



Water Infrastructure Improvement Project

Public Review Draft Initial Study & Proposed
Mitigated Negative Declaration

GHD | 718 Third Street, Eureka, CA 95501 USA

Project 11121530 July 2020

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Public Review Draft
Initial Study/Proposed Mitigated Negative Declaration
City of Rio Dell
Rio Dell Water Infrastructure Improvement Project

Prepared for:



City of Rio Dell
675 Wildwood Avenue
Rio Dell, California
95562

Prepared by:



GHD
718 Third Street
Eureka, California
95501

July 2020

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1. Project Information

Project Title	Rio Dell Water Infrastructure Improvement Project
Lead Agency Name & Address	City of Rio Dell; 675 Wildwood Ave, Rio Dell, CA 95562
Contact Person & Phone Number	Kyle Knopp, City Manager
Project Location	Rio Dell
Project Sponsor's Name & Address	City of Rio Dell; 675 Wildwood Ave, Rio Dell, CA 95562
General Plan Land Use Designation	Natural Resources (NR), Public Facilities (PF), TPZ, Neighborhood Commercial (NC) [Note: Most project activities to occur within existing public road rights-of-way]
Zoning	Natural Resources (NR), Public Facilities (PF), TPZ, Neighborhood Commercial (NC) [Note: Most project activities to occur within existing public road rights-of-way]

1.1 CEQA Requirements

This project is subject to the requirements of the California Environmental Quality Act (CEQA). The lead agency is the City of Rio Dell. The purpose of this Initial Study is to provide a basis for deciding whether to prepare an Environmental Impact Report, a Mitigated Negative Declaration or a Negative Declaration. This Initial Study is intended to satisfy the requirements of the California Environmental Quality Act, CEQA, (Public Resources Code, Div 13, Sec 21000-21177), and the State CEQA Guidelines (California Code of Regulations, Title 14, Sec 15000-15387). CEQA encourages lead agencies and applicants to modify their projects to avoid significant adverse impacts.

Section 15063(d) of the State CEQA Guidelines states the content requirements of an Initial Study as follows:

1. A description of the project including the location of the project;
2. An identification of the environmental setting;
3. An identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries;
4. A discussion of the ways to mitigate the significant effects identified, if any;
5. An examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls; and
6. The name of the person or persons who prepared or participated in the Initial Study.

1.2 Project Background

The project is located primarily within the City of Rio Dell (City, Figure 1). Operation of a municipal

water system warrants regular review in terms of condition, capacity, and reliability. The City actively manages and evaluates the City's water system to meet capacity and quality requirements, improve operations, and to reduce water losses from the distribution system. The City completed a Capital Improvement Plan in July of 2015 and a Preliminary Engineering Report in May 2019 (GHD Inc., 2019), which identified several priority projects to improve the reliability and resiliency of the water system.

The current system is comprised of many components of differing age and condition. Some components have been in service for more than 50 years. The system has many components that have experienced or are susceptible to failure, some operations are labor-intensive, and portions of the system warrant reconfiguration or replacement to meet the needs of the community and modern codes, practices, and standards. The engineering report completed in May 2019 described infrastructure in need of improvement (GHD Inc., 2019). Based on recommendations outlined in GHD (2019), proposed water system improvements include improvements to the distribution system, transmission system, and storage system (Figure 2).

Distribution System Improvements:

- **Distribution Piping Replacement** – Portions of water distribution system piping would be replaced to reduce maintenance issues with leaking pipes and upsize water mains to ensure sufficient fire flows. The underground pipes are located within existing street rights-of-way throughout the City as well as five alignments crossing underneath US101.
- **New Fire Hydrant Installations** – Installation of new fire hydrants would be co-located with distribution piping replacements and in areas where the existing hydrant spacing does not meet current fire code requirements. The new hydrants are proposed to fill gaps in existing fire hydrant coverage within the system based on a 225-foot coverage radius. The new hydrants would include isolation valves and 6-inch diameter connection laterals.
- **Fire Hydrant Replacements** – Approximately 30 existing fire hydrants would be replaced because of their age, poor performance, or leaks. The hydrant replacements would include the associated isolation valves and 6-inch diameter connection laterals.
- **Valve Cluster Replacements** – The existing distribution system contains non-operable isolation valves identified for replacement. These valves are mostly located below ground and are within existing roadways. Aboveground valves exist at the Painter Street Tank Site and are also slated for replacement as discussed below.
- **Painter Street Water Tank Valve Replacement** – The above-ground valves at the existing Painter Street water tank site have reached the end of their design life and would be replaced. No other modifications to the water tank or surrounding site are proposed.
- **Water Pipe Abandonment** – Approximately 175 to 200 feet of 8-inch diameter asbestos concrete pipe and approximately 600 feet of 6-inch diameter asbestos concrete pipe would be capped and abandoned in place using standard abandonment procedures near the southern terminus of the US 101 bridge over the Eel River. The pipe is redundant to other existing connections to Eeloa Avenue and has been subject to frequent maintenance due to leaks.

Transmission System Improvements

- **Eel River Pipeline Crossing** – The Metropolitan Well site is one of two water supplies used by the City. It is located across the Eel River from Rio Dell and serves as the backup supply of municipal water. It is connected to the City's water storage and distribution system by a single 8-inch diameter pipe located inside the US101 southbound bridge structure (Caltrans Bridge 04-0016L). The existing waterline is of unknown age and is considered seismically vulnerable due to the use of glued joints and simple pipe stands. The pipe segment is neither restrained nor anchored (GHD Inc., 2019). This project proposes three construction scenarios for addressing this pipe section. Construction Scenario 1 and Construction Scenario 2 would install an additional, seismically resilient, connection between the Metropolitan Wells and the City's storage and distribution system using horizontal directional drilling (HDD) (Figure 3). The Construction Scenario 1 HDD alignment would install the pipe from North Pacific Avenue, on the south side of the Eel River, to a pipeline to be installed along Northwestern Avenue. A third construction scenario (Construction Scenario 3) is to replace the existing pipeline in the bridge using modern seismic mitigation methods (Figure 3). These construction scenarios are discussed in a later section.

Storage System Improvements

- **Redwood Water Tank Replacement** – One of the two water tanks located at the Douglas Tank Site is leaking and would be replaced. The tank to be replaced is a 250,000-gallon redwood water storage tank at the end of its design life. It is no longer used for potable water storage. The City currently has a potable water storage deficit of 500,000-gallons. Replacing the 250,000-gallon redwood water storage tank with a new 500,000-gallon bolted steel tank would resolve the potable water storage deficit while removing unused equipment from the City's inventory.

1.3 Surrounding Land Uses and Existing Setting

The City of Rio Dell was incorporated in 1964 and is located in Humboldt County, California, along Highway 101 within the Eel River Valley (Figure 1). The City of Rio Dell is a residential community and has small commercial and industrial districts. The City is two square miles (1,278 acres) in size and is bordered on the north and the east by the Eel River and the south by Dean Creek. The City limits include the Eel River channel. The Scotia Bluffs, which make up the eastern bank of the Eel River across from Rio Dell, and the steep, wooded, hillside slopes on the west side of town are the dominant natural features of the City.

1.4 Project Description

The project consists of distribution system improvements, valve and fire hydrant replacements, and a redwood water tank replacement (Figure 2).

1.4.1 Distribution System Improvements

The following section describes the proposed distribution system improvements.

Objective

The City has identified approximately 18,000 feet of distribution piping, 170 valves, and 30 hydrants

in need of replacement (GHD, Inc., 2019). As part of the pipeline replacements, the project also proposes adding approximately 30 new fire hydrants to expand fire protection coverage within the City to meet current fire codes.

The objective for replacing pipelines is to improve the reliability and efficiency of the system and ensure sufficient capacity for fire flow (the amount of water needed for municipal fire protection) throughout the City. The majority of the high priority pipeline replacements were constructed before 1992 and are generally small diameter pipe (2-inch) or older asbestos concrete pipe (ACP) (GHD Inc., 2019).

Many of the pipeline alignments targeted for replacement do not satisfy the SWRCB requirements for water main separation from untreated sewage and storm drainage. These pipeline alignments will require State Board approval for exemption.

The objective for replacing existing valves is to maintain the City's ability to isolate pipe sections and reduce water loss within the distribution system. The City has identified approximately 170 existing valves that are either non-operable or leaking and are targeted for replacement.

The objective for replacing existing fire hydrants and adding new fire hydrants is to improve system safety and meet the California Fire Code. Approximately 30 existing hydrants have been identified that are either broken (valve seizure), leaking, or do not meet City standards. Based on the GHD (2019) Preliminary Engineering Report, California Fire Code and the Needed Fire Flow (NFF), the maximum distance from any point on the street or road frontage and a fire hydrant shall not be more than 225-feet (GHD Inc., 2019; California Fire Code, 2016). Proposed new fire hydrants would expand hydrant coverage to areas not currently covered by existing hydrants.

Access and Project Locations

Most distribution system pipeline replacements and associated staging areas would be located within City-owned properties or City rights-of-way. Five pipeline work areas are associated with US101 crossings. Due to the complexity involved with replacing the pipelines, three construction scenarios for the US101 crossing are proposed to be either capped and abandoned, reused as encasements for smaller diameter pipes, or sold to other utilities as encasements. Construction Scenario 1 and Construction Scenario 2 crossings are favorable for directional drilling as a means of replacing the existing connections. These two construction scenarios would install redundant, larger diameter pipes to ensure hydraulic performance is maintained in the distribution system in the case that parallel US101 crossings are abandoned from potable water use. New US101 pipeline crossings would be directionally drilled from City right-of-way, Caltrans right-of-way, or private property.

The valve replacement locations are scattered throughout the City's distribution system with some valves located in pipe section replacement work areas. All but four valves, located above ground at the Painter Street tank site, are located underground within existing roadways.

Caltrans encroachment permits are anticipated for all work involving crossing underneath US101 or within the US101 median. Project locations within Caltrans rights-of-way apply to all three construction scenario unless otherwise noted and are summarized below. See also Figure 2 and Figure 3.

US101 northbound crossing to Eeloa Avenue (Construction Scenario 2 and Construction Scenario 3 Only)

This existing pipe section is located underneath US 101 on the south side of bridge 04-0016R, and is proposed to be capped and abandoned. One end of the pipeline is located within Caltrans right-of-way between the northbound and southbound lanes of US101 on the southern end of the US101 crossing of the Eel River. The opposite end of the pipeline can be accessed from City right-of-way within Eeloa Avenue.

US101 crossing between Berkeley Street and Rigby Avenue

This existing pipe section is located underneath the northbound and southbound lanes of US101 between the end of Berkeley Street and Rigby Avenue. Access to the east end of the pipeline is located within Rigby Avenue. Access to the west end of the pipe is within the roadway at the intersection of 3rd Street and Berkeley Avenue. A temporary encroachment permit may be needed with PG&E and neighboring private landowner properties depending on contractor means and methods.

US 101 crossing along Center Street

This existing pipe section is located underneath the northbound and southbound lanes of US 101. Access to the pipe section's western and eastern ends are within the City right-of-way within Center Street.

US 101 crossing between Painter Street and Riverside Drive

This existing pipe section is underneath the northbound and southbound lanes of US 101. Access to the western end of the pipe section would either be within Painter Street and/or Caltrans right-of-way. The eastern end of the pipe is located in City right-of-way within Riverside Drive.

US 101 crossing between Ireland Street and Rigby Avenue along Davis Street

This existing pipe section is located underneath the southbound off-ramp to Davis Street, northbound on-ramp from Davis Street, and the northbound and southbound lanes of US101. Access to the pipe section's western and eastern ends are located within City right-of-way within Davis Street.

Earthwork

Earthwork for the distribution pipeline replacements would involve open trenching within road rights-of-way. Erosion control BMPs would be used to minimize impacts from trenching.

1.4.2 Transmission System Improvements (Eel River Crossing)

The following section describes three construction scenarios for the Eel River Crossing (Figure 3).

Objective

The objective of the Eel River Crossing is to provide the City of Rio Dell with a more seismically resilient way to convey water from its backup water supply (Metropolitan Well site) to the municipality of Rio Dell. The existing water line on the US101 bridge is vulnerable to earthquake damage and encroaches on Caltrans right-of-way. The City seeks to create an alternative to the current above-ground water pipe running on the inside of the US101 bridge to address seismic

vulnerability.

Pipeline Installation

The Eel River Crossing Construction Scenario 1 would create a redundant connection between the City's Metropolitan Well site and the City's storage and distribution system using Horizontal Directional Drilling (HDD). HDD is a trenchless construction method in which a pipe is installed along an arcing drill path, beginning and ending at entry and exit pits. The HDD pipe would pass under the Eel River. A drill rig is set up on the entry side and drills a pilot bore to the exit point. The pilot bore is then reamed in one or more passes to the size required for pullback of the prefabricated length of pipe through the bore hole under the river.

Construction Scenario 1

Construction Scenario 1 includes an HDD alignment extending from Northwestern Avenue across the Eel River to North Pacific Avenue. Construction Scenario 1 is located within the City limits on both City and private property. Construction Scenario 1 is not located in the Caltrans right-of-way. An access agreement with landowners would be required for construction as well as a permanent pipeline easement.

A new 8 to 10-inch diameter underground water pipe would be installed within the existing road right-of-way of Northwestern Avenue to connect the existing Metropolitan well site to the new Eel River Crossing alignment. Access would be provided via Northwestern Avenue (Figure 3).

Construction Scenario 2

Construction Scenario 2 includes a HDD alignment in-between the two US101 bridges and underneath the Eel River. The HDD alignment would be constructed near an existing HDD recycled effluent sewer line and a minimum separation of 10 feet would be maintained throughout the alignment. This construction scenario would require an encroachment permit for areas within the Caltrans right-of-way.

As with Construction Scenario 1, a new 8 to 10-inch diameter underground water pipe would be installed within the existing road right-of-way of Northwestern Avenue to connect the existing Metropolitan well site to the new Eel River Crossing alignment. Access would be provided via Northwestern Avenue (Figure 3).

Construction Scenario 3

In the event a HDD crossing is not feasible, pending the results of forthcoming geotechnical investigations, the existing pipeline within the southbound US101 bridge would be replaced using modern pipeline construction methods. Construction Scenario 3 would also require encroachment within the Caltrans right-of-way and is the least preferred alignment for the Eel River Crossing due to potential future conflicts with operation and maintenance of the US101 Bridge (Figure 3).

Site Access

Construction Scenario 1 Site Access

Access to the proposed drill pit located on the north side of the river would be from the eastern terminus of Northwestern Avenue. The drill pit and drilling work area would be located within both the Northwestern Avenue road right-of-way (within City limits) and private property. These work areas would require an access agreement with relevant land owners. The north side drill pit itself would be located in an agricultural field (Hoisington Randy & Dawnita; APN 205-181-002-000).

Access to the drill pit and drilling work area on the south side of the river would be provided via Eeloa Avenue and North Pacific Avenue. The drill pit and associated staging area would be located at the end of North Pacific Avenue on both City and private property and would require an access agreement (Childs Robin & Valdeen; APN 052-111-011-000). The pipe laydown area would be located on a vacant grass lot and would also require an access agreement (Dazzi Colin & Susan; APN 052-121-002-000).

An alternative strategy for this alignment, although not preferred, would flip the orientation of the two drill pits. In this scenario, the pipe laydown area would be located in the grazing field along Northwestern Avenue on the north side of the river.

Construction Scenario 2 Site Access

Both drill pits would be located between the northbound and southbound alignments of US101, within the Caltrans right-of-way, requiring an encroachment permit. Access would be off US101. The pipe laydown area would run within the median parallel to US 101 northbound, and installation may require a temporary single lane closure of US101 northbound.

Construction Scenario 3 Site Access

A new water pipe installed within the US101 southbound bridge would require construction access via US101. Work would occur within the US101 southbound bridge, within Caltrans right-of-way, and will require a Caltrans encroachment permit.

Site Preparation and Temporary Measures

All work within the road rights-of-way would require traffic control measures during construction activities. HDD would require site preparation for drilling and pipe layout. Site preparation would include minimal clearing and grubbing of existing grassy areas. No trees would be removed. Soil excavated to create the drill pits would be replaced at the conclusion of drilling.

HDD has the potential to release drilling fluids into the surface environment through hydraulic fracturing of the subsurface or “frac-out.” (A frac-out is a condition where drilling mud is released through fractures in the subsurface medium that reach the surface). To avoid potential impacts related to a frac-out, a Frac-Out Contingency Plan would be required to be in place prior to construction.

Earthwork

Earthwork for the Northwestern Avenue Water pipe installation would consist of intercepting the HDD alignment at Northwestern Avenue and extending the connection west toward the Metropolitan Wells. Vertical tunneling will be used to intercept the HDD alignment at Northwestern Avenue to bring the pipeline to the standard bury depth. The Northwestern Avenue extension would either use conventional open cut trenching or additional HDD within the road right-of-way. Erosion control best management practices (BMPs) would be used to minimize impacts from trenching and drilling activities.

Drill Spoils Disposal

Spoils generated from the HDD process would consist of bentonite slurry (10-15% solids). All drilling fluid additives are National Sanitation Foundation (NSF)/American National Standards Institute (ANSI) 60 compliant. The spoils would be collected with vacuum trucks and would be

hauled off-site by the contractor for legal disposal.

1.4.3 Storage System Redwood Water Tank Replacement

The City's water demand and firefighting storage needs result in a total water storage requirement of 1,250,000 gallons. Douglas Tank #1 was installed in 1973 and was taken out of service for potable water due to its deteriorating condition. Without Douglas Tank #1 in service, the reliable storage volume within the City's distribution system is reduced to 750,000-gallons. To minimize costs associated with developing 500,000 gallons of additional storage, the preliminary engineering report recommended replacing the 250,000-gallon redwood Douglas #1 tank with a 500,000-gallon bolted steel storage tank (GHD, Inc. 2019).

The replacement Douglas #1 tank would be approximately the same size as the recently installed Douglas #2 tank of approximately 48 foot in diameter and 38 feet in height. The water storage volume would be a nominal 500,000-gallons; however, the total height of the tank would be taller than the working height of the tank to maintain the mandatory freeboard capacity required by code.

Objective

The objective for replacing the water tank is to improve the City's storage system to meet daily, emergency, and firefighting storage needs for the community as well as meet the latest seismic building standards.

Access

The access road to the Douglas Tank Site traverses private property (APN 053-241-004-000) (Figure 2). The City has an easement with the private property owner to access the tank site. Improvements to the access road may be required before and/or after construction. Erosion control BMPs would be used to minimize potential impacts.

Site Preparation and Temporary Measures

Douglas Tank #1 was connected to the Pressure Zone 1 but was removed from potable water storage service (GHD Inc., 2019). The tank's demolition will not impact water distribution system operations due to the remaining 750,000 gallons of water storage that is connected to Pressure Zone 1.

Earthwork

Minimal earthwork is expected for the new 500,000-gallon bolted steel tank. The existing 250,000-gallon storage tank is approximately 46-feet in diameter, while the proposed replacement tank would be approximately 48-feet in diameter. Earthwork to be performed includes removing the existing foundation and aggregate subgrade. Once the old tank foundation is removed, a new foundation and subgrade will be installed.

Tank Installation

The existing tank would be deconstructed and a new tank foundation would be cast on site. The replacement tank would be subsequently installed atop a new foundation.

1.4.4 Project Construction

Construction Schedule

Construction would occur over a six month period planned to commence in June 2022. Because most project elements would occur under existing pavement, vegetation clearing would be required only in a few locations. Anticipated daytime work hours are 7:00 a.m. to 7:00 p.m., Monday through Friday with occasional work on Saturdays. Construction on Sunday or legal holidays is not currently anticipated except for emergencies or with prior approval from the City.

Construction Staging, Activities, and Equipment

Construction staging areas would be located on existing road easements and on other City-owned developed properties (e.g. parking lots) (Figure 2). Contractors may also use private lots they have access to as part of their construction operations. Staging areas would be used for equipment storage, materials storage, and temporary stockpiling.

Excess soils and construction materials would be stored on-site within previously designated staging areas only. Excess soils may be re-used on-site for backfill and finished grading. Excess soils would not remain stockpiled on-site once the project is complete. The contractor may haul additional excess soils off-site for use at other permitted sites.

Equipment required for construction would include: tracked excavators, backhoes, graders, bulldozers, dump trucks, drilling equipment, drill mud recycling equipment, pipe fusing equipment, cranes, water trucks, bobcats, and pick-up trucks. It is not anticipated that any temporary utility extensions, such as electric power or water, will be required for construction.

All construction activities will be accompanied by both temporary and permanent erosion and sediment control BMPs. Project construction would include the following activities:

- Directional drilling – To install the new subsurface transmission system piping
- Clearing and grubbing – To clear low brush
- Excavation – To create entrance and exit pits for HDD, and to prepare subgrade for Douglas Tank #1 foundation
- Trenching – To install the new pipe in Northwestern Avenue and replace/install water pipes, valve clusters, and hydrants.
- Installation of new distribution piping, valves, and hydrants.
- Placement of aggregate base – For the Douglas Tank #1 access road and trenched pipeline installations.
- Douglas Tank #1 demolition – Demolition of existing tank and removal from site.
- Tank Erection – Installation of 500,000-gallon bolted steel water tank, yard piping, and appurtenances.

Traffic and Access Control

Traffic controls would be required in accordance with the City and Caltrans standards, and the contractor would be required to comply with all conditions of the encroachment permits. The development and implementation of traffic controls would include, but not necessarily be limited to: traffic controls, signs, and flaggers conforming to the current California Manual of Uniform Traffic Control Devices. Construction Scenario 3 would likely require a temporary lane closure of US101 to enable safe installation of the new water pipe, in coordination with Caltrans. Identification of which

lane of US101 to close would also be determined in coordination with Caltrans.

Temporary Excavation Dewatering

If needed, temporary groundwater dewatering would be conducted to provide a dry work area. Dewatering would involve pumping water out of a trench or excavation. Groundwater would typically be pumped to Baker tanks (or other similar type of settling tank) or into a dewatering bag. Following the settling process provided by a tank or filter, the water would be used for dust control and compaction. Discharge water from Baker tanks would not be discharged into wetlands or any water bodies.

Site Restoration and Closure

Following construction, the contractor would demobilize and remove equipment, supplies, and construction wastes. The disturbed areas along the project alignment would be restored to pre-construction conditions or stabilized with a combination of grass seed (broadcast or hydroseed), straw mulch, rolled erosion control fabric, and native grass seed.

1.5 Operation and Maintenance

Once construction is complete, general operation and maintenance activities associated with the proposed project would include annual inspections, testing, exercising and servicing of valves, and repairs of piping and equipment, and other similar operational requirements. The access road to the Douglas Tank site would also be maintained. Maintenance and operational activities associated with fire hydrants include vegetation management (mowing) and valve testing. Water tank operations and maintenance includes monthly checks, repainting of the tank approximately every 20 years, and general maintenance and upkeep of grounds (e.g., weed removal, testing the generator).

Operation and maintenance of the project would not generate additional vehicle trips, above existing conditions. The City of Rio Dell would be responsible for all maintenance.

Operationally, no changes would be made to the pumping system required to transport water from both the Metropolitan Wells site and the Water Treatment Plant to Storage. For Construction Scenario 1 and Construction Scenario 2, the existing pumps would be used for pumping, and would continue to be connected to the electrical grid and would not result in an increase in operational emissions.

Project operations would not require the use of any new chemicals not presently in use by the existing municipal water system.

1.6 Environmental Protection Actions Incorporated into the Project

The following actions are included as part of the project to reduce or avoid potential adverse effects that could result from construction or operation of the project. Additional mitigation measures are presented in the following analysis sections in Chapter 3, Environmental Analysis. Environmental protection actions and mitigation measures, together, would be included in a Mitigation Monitoring Program at the time that the project is considered for approval.

1.6.1 Environmental Protection Action 1 – Implement Geotechnical Design Recommendations

As part of the project design process, the City would engage a California-registered Geotechnical Engineer to conduct a design-level geotechnical study for the project. The City would design the project to comply with the site-specific recommendations made in the project's geotechnical reports. This would include design in accordance with the seismic and foundation design criteria, determining appropriate method of tunneling under the Eel River, as well as site preparation and grading recommendations included in the reports. The geotechnical recommendations would be incorporated into the final plans and specifications for the project, and would be implemented during construction.

1.6.2 Environmental Protection Action 2 – Stormwater Pollution Prevention Plan (SWPPP)

If required, the project would seek coverage under State Water Resources Control Board (Water Board) Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities. If required, the City would submit permit registration documents (notice of intent, risk assessment, site maps, SWPPP, annual fee, and certifications) to the Water Board. A SWPPP would address pollutant sources, best management practices, and other requirements specified in the Order. The SWPPP would include erosion and sediment control measures, and dust control practices to prevent wind erosion, sediment tracking, and dust generation by construction equipment. A Qualified SWPPP Practitioner would oversee implementation of the project SWPPP, including visual inspections, sampling and analysis, and ensuring overall compliance, if a SWPPP is determined to be required.

1.7 Required Agency Approvals

The following permits and approvals are likely to be required prior to construction:

- CEQA compliance
- Caltrans encroachment permit
- Humboldt County encroachment, conditional use, and grading permits
- North Coast Regional Water Board Clean Water Act Section 401 certification (if wetlands and/or the Eel River may be impacted)
- USACE Clean Water Act Section 404 permit (if wetlands and/or the Eel River may be impacted)
- California Department of Fish and Wildlife (CDFW) 1600 permit (if riparian vegetation may be impacted)
- State Lands Commission lease or permit

1.8 Tribal Consultation

The City has/has not received requests for notification of proposed projects from California Native American tribes pursuant to Public Resources Code Section 21080.3.1, also known as Assembly Bill (AB) 52. Invitations to consult were sent to designated tribal representatives to request consultation under AB 52 on March 10, 2020. Responses were not received.

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2. Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages. Where checked below, the topic with a potentially significant impact would be addressed in an environmental impact report:

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Agricultural & Forestry Resources | <input checked="" type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Recreation |
| <input checked="" type="checkbox"/> Air Quality | <input checked="" type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Transportation |
| <input checked="" type="checkbox"/> Energy | <input type="checkbox"/> Land Use/Planning | <input checked="" type="checkbox"/> Tribal Cultural Resources |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Mineral Resources | <input checked="" type="checkbox"/> Utilities/Service Systems |
| <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Noise | <input type="checkbox"/> Wildfire |
| <input checked="" type="checkbox"/> Geology/Soils | <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Mandatory Findings of Significance |

DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION would be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there would 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 would be prepared.
- ☐ I find that the proposed 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 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 avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Kyle Knopp, City Manager

Date

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3. Environmental Analysis

3.1 Aesthetics

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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 view 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 day or night time views in the area?				✓

Visual resources within the project area north of the Eel River include the Metropolitan Well site, surrounding agricultural lands near Northwestern Avenue, and forest land. Visual resources within the project area south of the Eel River include views of the City of Rio Dell and at the water tank site located on an open hillside at the base of forested mountains east of Rio Dell.

Project construction scenarios include both the installation of a new underground pipe, which would be directionally drilled under the Eel River to connect the two facilities (which would not be visible above ground), and a replacement pipe attached to the US 101 bridge.

Project activities include the replacement of a redwood water tank adjacent to an existing steel water tank. All project construction scenarios would include the temporary presence and use of construction equipment during the construction phase of the project.

a) Have a substantial adverse effect on a scenic vista? (Less than Significant)

The aesthetics of the site of the directional drilling/pipe installation on the north side and south sides of the river (Construction Scenarios 1 and 2) would be affected only during construction activities. Following construction, all infrastructure would be buried and surface conditions restored to their pre-project conditions. The water tank site is located on a hillside east of Rio Dell and can be seen from various vantage points. However, because the tanks are roughly equal in height to the

surrounding trees (30-50 feet), they are often obscured from view. Because the proposed tank replacement would result in a new tank roughly the same size in the same location, view impacts would be negligible. The impact would be less than significant.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? (No Impact)

The project is not located within a state scenic highway (Caltrans 2019). The project area does not include any historic trees or rock outcroppings. There are no buildings within project work areas needed for directional drilling/pipe installation or the water tank site. The Historic Properties Identification Report completed for the project did not identify any built historic properties that would be affected by construction or operations (Angeloff 2020). Potentially historic buildings located in Rio Dell would not be affected by the installation of replacement subterranean water pipes. No impact would result

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public view 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? (Less than Significant)

The visual appearance of the directional drilling and pipe installation work areas and the associated equipment staging grounds would be affected only during the construction phase of the project and would not alter the appearance of the site post-project. Under Construction Scenario 1, drill pits would be located in areas with limited visual prominence. Under Construction Scenario 2, drill pits would be located between northbound and southbound lanes of US 101, which is visually impacted by the highway under existing conditions. The replacement water tank would be nearly identical in appearance to the existing tank. Following replacement of underground water lines and valves, the roadway would be repaved within the same footprint and would not result in a visual change. New and replaced fire hydrants would also not result in a significant visual change. This project does not conflict with any local regulations governing scenic quality. Impacts would be less than significant.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? (No Impact)

The project does not include any temporary sources of light. The existing tank site contains conventional safety lighting which would be maintained as a component of the tank site post-project. No impact would result.

3.2 Agriculture and Forest Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?			✓	
b) Conflict with existing zoning for agricultural use, or a Wouldiamson 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?				✓

The only project site located on agricultural lands is the drill pit and work area associated with Construction Scenario 1 (see Figure 2). The drill pit and work area would be located on actively managed pastureland located near the eastern terminus of Northwestern Avenue.

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland)? (Less than Significant)

Appendix G to the CEQA Guidelines suggests a finding of significance if a project would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps for the Farmland Mapping and Monitoring Program (FMMP) by the California Natural Resources Agency (California Department of Conservation [DOC]), to non-agricultural uses. The project area does not contain Unique Farmland or Farmland of State Importance as shown on the maps prepared pursuant to the FMMP of the DOC, as soil data in Humboldt County has not been compiled into the FMMP (DOC 2019). However, the project area does include 220 – Ferndale soil series mapped as prime farmland if irrigated and has a soil capability Class of I (if irrigated) and Class II a (if not irrigated) (NRCS 2020). The Humboldt County WebGIS portal also indicates this area is prime farmland (Humboldt County 2020). As such, this analysis assumes prime farmland present in this project area.

Humboldt County

The Humboldt County General Plan (2017) includes the following applicable policies regarding agricultural lands:

AG-G2. Preservation of Agricultural Lands

Agricultural land preserved to the maximum extent possible for continued agricultural use in parcel sizes that support economically feasible agricultural operations.

AG-P5. Conservation of Agricultural Lands

Agricultural lands shall be conserved and conflicts minimized between agricultural and non-agricultural uses through all of the following:

- A. By establishing stable zoning boundaries and buffer areas that separate urban and rural areas to minimize land use conflicts.
- B. By establishing stable Urban Development, Urban Expansion and Community Planning Areas and promoting residential in-filling of Urban Development Areas, with phased urban expansion within Community Planning Areas.
- C. By developing lands within Urban Development, Urban Expansion and Community Planning Areas prior to the conversion of agricultural resource production lands (AE, AG) within Urban Expansion Areas.
- D. By not allowing the conversion of agricultural resource production lands (AE, AG) to other land use designations outside of Urban Expansion Areas.
- E. By assuring that public service facility expansions and non-agricultural development do not inhibit agricultural viability, either through increased assessment costs, degradation of the environment, land fragmentation or conflicts in use.
- F. By increasing the effectiveness of the Williamson Act Program.
- G. By allowing historical structures and/or sensitive habitats to be split off from productive agricultural lands where it acts to conserve working lands and structures.
- H. By allowing lot-line adjustments for agriculturally designated lands only where planned densities are met and there is no resulting increase in the number of building sites.

AG-P6. Agricultural Land Conversion – No Net Loss

Lands planned for agriculture (AE, AG) shall not be converted to non-agricultural uses unless the Planning Commission makes the following findings:

- A. There are no feasible alternatives that would prevent or minimize conversion;
- B. The facts support an overriding public interest in the conversion; and
- C. For lands outside of designated Urban Development Boundaries, sufficient off-setting mitigation has been provided to prevent a net reduction in the agricultural land base and agricultural production. This requirement shall be known as the “No Net Loss” agricultural lands policy. “No Net Loss” mitigation is limited to one or more of the following:
 - 1. Re-planning of vacant agricultural lands from a non-agricultural land use designation to an agricultural plan designation along with the recordation of a permanent conservation easement on this land for continued agricultural use; or

2. The retirement of non-agricultural uses on lands planned for agriculture and recordation of a permanent conservation easement on this land for continued agricultural use; or
3. Financial contribution to an agricultural land fund in an amount sufficient to fully offset the agricultural land conversion for those uses enumerated in subsections a and b. The operational details of the land fund, including the process for setting the amount of the financial contribution, shall be established by ordinance.

AG-P16. Protect Productive Agricultural Soils

Development on lands planned for agriculture (AE, AG) shall be designed to the maximum extent feasible to minimize the placement of buildings, impermeable surfaces or nonagricultural uses on land as defined in Government Code Section 51201(c) 1- 5 as prime agricultural lands.

AG-S7. Prime Agricultural Land.

Prime Agricultural land per California Government Code Section 51201(c) means:

- A. All land which qualifies for rating as Class I or Class II in the Soil Conservation Service land use capability classifications.
- B. Land which qualifies for rating 80 through 100 in the Storie Index Rating.
- C. Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the U.S.D.A.
- D. Land planted with fruit or nut bearing trees, vines, bushes or crops which have a non- bearing period of less than five years and which would normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than \$200.00 per acre. Humboldt County General Plan Adopted October 23, 2017 Part 2, Chapter 4. Land Use Element 4-32
- E. Land which has returned from the production of unprocessed agricultural plant products on an annual gross value of not less than \$200.00 per acre for three of the five previous years.

Under Construction Scenario 1 for the Eel River Crossing, potential staging areas for the construction of the drill pit and HDD process would temporarily impact 2.3 acres of agricultural land found on APN 205-181-004 and APN 205-181-002 within the jurisdiction of Humboldt County, but would not result in the permanent conversion of the farmland to a non-agricultural use. At the conclusion of construction activities, all pipeline infrastructure would be buried underground with no above ground equipment remaining. All soils removed during construction would be replaced and regraded consistent with existing conditions, and the ground surface would be revegetated. Drilling would be short-term and would not result remove agricultural land from production for an extended period. In addition, the 2.3-acre area that would be temporarily impacted is negligible (2%) compared to the 109-acre area of the two parcels. Following the project, the area would not be degraded and would return fully to agricultural production. Any potential impact associated with Construction Scenario 1 drilling in prime agricultural land would be less than significant.

Construction Scenarios 2 and 3 for the Eel River Crossing would not result in any potential impact to agricultural or prime agriculture land. No other project component, including improvements to the distribution system and storage system, would result in an impact to agricultural or prime agriculture land or conversion of such lands. No impact from these project elements would result

b) Conflict with Agricultural Zoning or Williamson Act Contract? (No Impact)

The Construction Scenario 1 drilling and work area located in the agricultural field is zoned Natural Resources (NR) with a Timberland Production Zone (TPZ) use code description, which does not list agricultural uses as a permitted use. Therefore, the project site cannot be considered to be zoned agricultural. For this reason the proposed project does not conflict with existing agricultural zone. There are no Williamson Act contracts for lands located in the project area (Humboldt County 2020). No impact would result.

c, d) Conflict with Forest Land Zoning or Convert Forest Land? (No Impact)

For the construction of the Eel River Crossing Construction Scenario 1 the drill pit and HDD work areas would be located on property zoned TPZ (APN 205-181-004 and APN 205-181-002). Timber resources are present on the periphery of each APN, at a minimum of 0.25 or greater for the drilling area (Humboldt County 2020). Timber resources on these parcels or any other project work area would not be affected by the project. No impact would result.

e) Convert Farmland or Forest? (No Impact)

Construction activities to take place at the Construction Scenario 1 entrance pit and work area on prime farmland would be temporary and would not result in the conversion of farmland. The project would not affect any forestlands or convert any forest uses to other uses. No impact would result.

3.3 Air Quality

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporation	Less-Than-Significant Impact	No Impact
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 in 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?			✓	

The City of Rio Dell is located in Humboldt County, California, along Highway 101 within the Eel River valley. The City is two square miles (1,278 acres) in size and is bordered on the north and the east by the Eel River and the south by Dean Creek. The project is located within the North Coast Air Basin (Air Basin) which is managed by the North Coast Unified Air Quality Management District (NCUAQMD). The NCUAQMD monitors air quality and enforces local, State and federal air quality regulations for counties within its jurisdiction. Construction is anticipated to last for approximately 6 months. However, as a conservative approach to the analysis, emissions related to construction were calculated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 and are discussed below (also see Appendix A – CalEEMod Modeling Information and Results).

a) Conflict with or obstruct implementation of the applicable air quality plan? (Less Than Significant with Mitigation)

This impact relates to consistency with an adopted attainment plan. Within the project vicinity, the NCUAQMD is responsible for monitoring and enforcing local, state, and federal air quality standards.

Humboldt County is designated 'attainment' for all National Ambient Air Quality Standards. With regard to the California Ambient Air Quality Standards, Humboldt County is designated attainment for all pollutants except PM₁₀. Humboldt County is designated as "non-attainment" for the state's

PM₁₀ standard. Rule 104, Section D – Fugitive Dust Emissions is used by the NCUAQMD to address non-attainment for PM₁₀.

PM₁₀ refers to inhalable particulate matter with an aerodynamic diameter of less than 10 microns. PM₁₀ includes emission of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM₁₀ emissions include unpaved road dust, smoke from wood stoves, construction dust, open burning of vegetation, and airborne salts and other particulate matter naturally generated by ocean surf. Therefore, any use or activity that generates airborne particulate matter may be of concern to the NCUAQMD. The proposed project would create PM₁₀ emissions in part through vehicles coming and going to the project area and the construction activity associated with the project.

Pursuant to Rule 104 Section D, the handling, transporting, or open storage of materials in such a manner, which allows or may allow unnecessary amounts of particulate matter to become airborne, shall not be permitted. Reasonable precautions shall be taken to prevent particulate matter from becoming airborne, including, but not limited to covering open bodied trucks when used for transporting materials likely to give rise to airborne dust and the use of water during the grading of roads or the clearing of land. During earth moving activities, fugitive dust (PM₁₀) would be generated. The amount of dust generated at any given time would be highly variable and is dependent on the size of the area disturbed at any given time, amount of activity, soil conditions, and meteorological conditions. Unless controlled, fugitive dust emissions during construction of the proposed project could be a significant impact, therefore, Mitigation Measure AQ-1 would be incorporated to comply with NCUAQMD's Rule 104 Section D to ensure any potential impact would be less than significant.

Mitigation

Implementation of Mitigation Measures AQ-1 would reduce the potential impact related to PM₁₀ fugitive dust by requiring BMPs.

Mitigation Measure AQ-1: BMPs to Reduce Air Pollution

The contractor shall implement the following BMPs during construction:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, active graded areas, excavations, and unpaved access roads) shall be watered two times per day in areas of active construction unless natural precipitation has occurred.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-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.
- All vehicle speeds on unpaved roads shall be limited to 15 mph, unless the unpaved road surface has been treated for dust suppression with water, rock, wood chip mulch, or other dust prevention measures.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes. Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications.
- Post a publicly visible sign with the telephone number and person to contact at the City regarding dust complaints. This person shall respond and take corrective action within 48 hours. The NCUAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

With implementation of Mitigation Measure AQ-1, the project would not conflict with applicable air plans. This impact would be reduced to a less than significant level with mitigation.

Operation of the project would not include the handling, transporting or open storage of materials in which particulate matter may become airborne. Due to the absence of handling, transport or open storage of materials that would generate particulate matter, operation of the project is not expected to conflict with NCUAQMD's Rule 104 Section D. No impact from operation of the project would result.

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

The project's potential to generate a significant amount of criteria pollutants of concern during Project construction and operation is assessed in this Section. As noted above, Humboldt County is designated nonattainment of the State's PM₁₀ standard. The County is designated attainment for all other state and federal standards. Potential impacts of concern would be exceedances of state or federal standards for PM₁₀. Localized PM₁₀ is of concern during construction because of the potential to emit fugitive dust during earth-disturbing activities.

Localized PM₁₀

The project would include demolition, grading, trenching, and asphalt paving activity. Generally, the most substantial air pollutant emissions would be dust generated from grading and excavation. If uncontrolled, these emissions could lead to both health and nuisance impacts. Construction activities would also temporarily generate emissions of equipment exhaust and other air contaminants. The project's potential impacts from equipment exhaust are assessed separately in Section 3.3 (c) below.

The NCUAQMD does not have formally adopted thresholds of significance for fugitive, dust-related particulate matter emissions above and beyond Rule 104, Section D, which does not provide quantitative standards. For the purposes of analysis, this document uses the Bay Area Air Quality Management District (BAAQMD) approach to determining significance for fugitive dust emissions from project construction. The BAAQMD bases the determination of significance for fugitive dust on a consideration of the control measures to be implemented. If all appropriate emissions control measures recommended by BAAQMD are implemented for a project, then fugitive dust emissions during construction are not considered significant. BAAQMD recommends a specific set of "Basic Construction Measures" to reduce emissions of construction-generated PM₁₀ to less than significant. Without incorporation of these Basic Construction Measures, the project's construction-generated fugitive PM₁₀ (dust) would result in a potentially significant impact.

The Basic Construction Measure controls recommended by the BAAQMD are incorporated into Mitigation Measure AQ-1. These controls are consistent with NCUAQMD Rule 104 Section D,

Fugitive Dust Emission and provide supplemental, additional control of fugitive dust emissions beyond that which would occur with Rule 104 Section D compliance alone. Therefore, with incorporation of Mitigation Measure AQ-1 the project would result in a less than significant impact with mitigation for construction-period PM₁₀ generation, and would not violate or substantially contribute to an existing or projected air quality violation.

Construction Criteria Pollutants

The NCUAQMD has indicated that emissions are not considered regionally significant for projects whose construction would be of relatively short duration, lasting less than one year. For project construction lasting more than one year or that involves above average construction intensity in volume of equipment or area disturbed, construction emissions may be compared to the stationary source thresholds.

The NCUAQMD does not have established CEQA significance criteria to determine the significance of impacts that may result from a project; however, the NCUAQMD does have criteria pollutant significance thresholds for new or modified stationary source projects proposed within the NCUAQMD's jurisdiction. NCUAQMD has indicated that it is appropriate for lead agencies to compare proposed construction emissions that last more than one year to its stationary source significance thresholds, which are:

- Nitrogen oxides – 40 tons per year,
- Reactive organic gases – 40 tons per year,
- PM₁₀ – 15 tons per year, and
- Carbon monoxide – 100 tons per year.

If an individual project's emission of a particular criteria pollutant is within the thresholds outlined above, the project's effects concerning that pollutant are considered to be less than significant.

Construction of the project is expected to begin in 2022 and be completed within 6 months. Detailed construction equipment activity was estimated based on project construction components and detailed data from the project's engineering design. For the purposes of a conservative analysis, emissions modeling did not include the activities included in Mitigation Measure AQ-1, such as watering the construction site daily, promptly replacing ground cover on disturbed areas, and cleaning track out off of paved roadways. Table 3.3-1 – Construction Regional Pollutant Emissions summarizes construction-related emissions. As shown in the table, the project's construction emissions would not exceed the NCUAQMD's stationary sources emission thresholds in any year of construction. Therefore, the project's construction emissions are considered to have a less than significant impact.

Table 3.3-1 Construction Regional Pollutant Emissions

Parameter	Emissions (tons per year)			
	ROG	NO _x	CO	PM ₁₀
Project Construction 2022	0.18	1.65	1.50	7.9
NCUAQMD Stationary Source Thresholds	40	40	100	15
<i>Significant Impact?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

Operational Criteria Pollutants

Following construction, operation of the project would not include any stationary sources of air emissions. General operation and maintenance activities associated with the proposed project

would include annual inspections, testing, exercising and servicing of valves, and repairs of piping and equipment, and other similar operational requirements. Operation and maintenance of the project would not generate additional vehicle trips, above existing conditions. Operationally, no changes would be made to the pumping system required to transport water from both the Metropolitan Wells site and the Water Treatment Plant to existing storage locations or municipal users. Existing pumps would be used to pump water across the river via the Eel River Crossing. These pumps are hard wired electrical pumps and would not result in additional emissions. Therefore, the project would not result in an increase in operational emissions above the existing conditions, and the project's operations would have no impact.

c) Expose sensitive receptors to substantial pollutant concentrations? (Less Than Significant with Mitigation)

Activities occurring near sensitive receptors should receive a higher level of preventative planning. Sensitive receptors include school-aged children (schools, daycare, playgrounds), the elderly (retirement community, nursing homes), the infirm (medical facilities/offices), and those who exercise outdoors regularly (public and private exercise facilities, parks).

There are two schools in Rio Dell: Monument Middle School and Eagle Prairie Elementary School. The two schools are located immediately adjacent to each other on Center Street. Seven pipe segment replacement locations and a number of fire hydrant installation/replacement locations are located within 0.25 miles of the schools. No HDD or water tank-related replacement activities are located within 0.25 miles of either school. The closest residences are approximately 20 feet from the project boundary.

BAAQMD's Basic Construction Measures included in Mitigation Measure AQ-1 (BMPs to Reduce Air Pollution) minimize idling times for trucks and equipment to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]) and ensures construction equipment is maintained in accordance with manufacturer's specifications.

Project construction activities would occur in segments as pipes, valves, hydrants, and the tank are replaced in different areas throughout the project, and is not expected to include intensive or prolonged construction equipment use in any one location. Construction activity for the entire project is anticipated to be complete within 6 months. Due to the short duration, distribution of activities (no one area of prolonged or intense construction activity), and the implementation of Mitigation Measure AQ-1 which would control fugitive dust, the project would not result in the exposure of sensitive receptors to substantial pollutant concentrations. Therefore, with implementation of Mitigation Measure AQ-1 the construction-related impact would be less than significant with mitigation.

Following construction, the project would not include any stationary sources of air emissions or new emissions that would result in substantial long-term operational emissions of criteria air pollutants that would substantially affect sensitive receptors. Therefore, project operation would not expose nearby sensitive receptors to substantial levels of pollutants and would result in no impact.

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

The project would create limited exhaust fumes from gas and diesel powered equipment. The likelihood of these odors and emissions reaching nearby receptors is influenced by atmospheric conditions, specifically wind direction. Due to the relative short-term nature of construction, and the distribution of activities, emissions or odors caused by construction of the project would not

adversely affect a substantial amount of people. Therefore, a less than significant impact would occur

Following construction, implementation of the project would not result in any major sources of odor or emissions above the existing conditions. No operational impact would result.

3.4 Biological Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California 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 US 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?				✓

Analysis in this section is based on the project's Biological Resources Report (GHD 2020), included as Appendix B.

- 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? (Less Than Significant With Mitigation)**

Special-status Plant Species

Special status plant species under State jurisdiction include those listed as endangered,

threatened, or as candidate species by the California Department of Fish and Wildlife (CDFW) under the California Endangered Species Act (CESA). Plant species on CNPS California Rare Plant Ranking (CRPR) Lists 1A, 1B and 2A and 2B are considered eligible for state listing as endangered or threatened pursuant to the California Fish and Game Code and CDFW has oversight of these special status plant species as a trustee agency. As part of the CEQA process, such species should be considered as they meet the definition of Threatened or Endangered under Sections 2062 and 2067 of the California Fish and Game Code. There are occasions where CRPR List 3 or 4 species that might be considered of special concern particularly for the type locality of a plant, for populations at the periphery of a species range, or in areas where the taxon is especially uncommon or has sustained heavy losses, or from populations exhibiting unusual morphology.

One Sensitive Natural Community was mapped within the project area. This community occurs on a property owned by the City that is being considered for use as a staging area. The northern side of the property contains riparian vegetation adjacent to the Eel River. This community is defined by The Manual of California Vegetation as red alder forest or *Alnus rubra* Forest Alliance. Red alder and California bay (*Umbellularia californica*) are dominant in the overstory. Red elderberry (*Sambucus racemosa*) was observed in the understory. The invasive species English ivy, (*Hedera helix*), is prolific in this area where it has grown up the riparian trees and where it has spread over large portions of the ground. The *Alnus rubra* forest alliance is ranked as an S4 vegetation alliance and is not considered Sensitive by CDFW at the alliance level. However, all named associations within this alliance are considered Sensitive and this alliance would likely fit either the red alder/salmon berry (*Rubus spectabilis*) - red elderberry association or the red alder/*Rubus* spp. association. Both of these associations are considered Sensitive by CDFW, and thus this community may be considered Sensitive by CDFW. The vegetation mapped as red alder forest alliance is riparian vegetation which would be regulated by the California Department of Fish and Wildlife through the Lake and Streambed Alteration permit process (California Department of Fish and Game Code Section 1602). If the *Alnus rubra* Forest Alliance Sensitive community cannot be avoided during construction, the impact is considered potentially significant. The Implementation of Mitigation Measure BIO-1 would reduce the level of impact to be less than significant.

A seasonally appropriate survey for special status plant species occurred on May 12, 2020 and special status botanical species were not identified (TransTerra 2020). Eight special status species have a low likelihood of occurring within the project area (GHD 2020). A survey for special status species focused only on areas of the project identified to have potential habitat (generally the areas described as having natural vegetation communities as described above, including roadside habitat along Northwestern Avenue) will occur during the prime blooming period for these species. Given that required protocol plant surveys remain to be completed, and because of the proximity of the project area to known populations of special-status plants, the impact on special-status plants is considered potentially significant. Implementation of Mitigation Measure BIO-2 would reduce the level of impact to be less than significant.

Mitigation

Mitigation Measure BIO-1 would reduce the potential impact of the project on special-status communities by requiring mitigation under the guidance of a Habitat Mitigation and Monitoring Plan if impacts cannot be avoided. Mitigation Measure BIO-2 would reduce the potential impact of the project on special-status plants to a less-than-significant level by requiring pre-construction surveys and measures to avoid take of species and compensation for loss of any habitat.

Mitigation Measure BIO-1: Protect Special Status Plant Communities

Impacts to riparian vegetation will be avoided if possible. If impacts to riparian vegetation cannot be avoided and if riparian vegetation must be removed then a Section 1602 Lake and Streambed Alteration Agreement from the CDFW would be obtained. If project activities are determined to impact wetlands, or riparian vegetation requiring mitigation, a Habitat Mitigation and Monitoring Plan (HMMP) will be prepared and implemented.

Measure BIO-2: Protect Special Status Plants

Mitigation measures for special status plant species are addressed collectively for all species. Significant impacts to special-status plant species present or likely to be present onsite shall be minimized, avoided, and (if necessary) compensated by complying with the following:

- Pre-construction surveys: Seasonally appropriate pre-construction surveys for special status plant species shall occur prior to construction within the planned area of disturbance for the project, during the appropriate blooming time (spring or summer) for the target species. Survey methods shall comply with CDFW rare plant survey protocols, and shall be performed by a qualified field botanist. Surveys shall be modified to include detection of juvenile (pre-flowering) colonies of perennial species when necessary. Any populations of special status plant species that are detected shall be mapped. Populations shall be flagged if avoidance is feasible and if populations are located adjacent to construction areas.
- The locations of any special status plant populations to be avoided shall be clearly identified in the contract documents (plans and specifications).
- If special status plant populations are detected where construction would have unavoidable impacts, a compensatory conservation plan shall be prepared and implemented in coordination with CDFW. Such plans may include salvage, propagation, on-site reintroduction in restored habitats, and monitoring.

With the implementation of Mitigation Measures BIO-1 and BIO-2, potential impacts to special status plant communities and special status plants would be less than significant.

Special-status Wildlife Species

The only special status wildlife species with the potential to occur in the project area is the North American Porcupine (*Erethizon dorsatum*), which is a State Special Status Species (GHD 2019a). North American Porcupines are primarily nocturnal, but can sometimes be seen during the day. They are approximately 27 inches in length with yellowish quills on the head, rump, and upper surfaces of the tail. Their range extends across mainland Canada, Alaska, and the western and northeastern United States. They use a wide variety of habitats, but are most common in montane conifer, Douglas fir, and alpine dwarf-shrub. There are numerous occurrence records (both historical and recent) from the larger project vicinity, especially the Eel River estuary, and suitable habitat for the species is present on site (GHD 2019a). Although there are records of North American Porcupines from the general project vicinity and they have a moderate potential to occur onsite, no impacts are expected to occur to this species. The species is highly mobile and, if present, is expected to leave the project area once construction activity commences. Although some foraging habitat (riparian forest) would be removed in association with this project, substantial foraging habitat suitable for this species is present in the surrounding area (riparian forest along the

Eel River). As no impacts to this species are expected, the potential impact would be less than significant.

Special-status Fish Species

Federally threatened salmonids (Coho Salmon (*Oncorhynchus kisutch*), federally threatened Northern California Steelhead (*Oncorhynchus mykiss irideus*), and Chinook Salmon (*Oncorhynchus tshawytscha*) are known to occur nearby in the Eel River and could potentially be impacted by project construction. Additional species which could be nearby and potentially impacted include Green Sturgeon (*Acipenser medirostris*), which is listed as federally threatened, Pacific Lamprey (*Entosphenus tridentatus*), which is a State Species of Special Concern, and Coastal Cutthroat Trout (*Oncorhynchus clarkia clarkia*), also a State Species of Special Concern. The Eel River is designated Critical Habitat for Coho Salmon, Northern California Steelhead, and Chinook Salmon. Essential Fish Habitat (EFH) also occurs in the Eel River between the two primary project areas.

Special-status fish species were evaluated in the Biological Resources Report (GHD 2020). With the exception of Green Sturgeon, all other above-noted special status fish species have the potential to be present at or near the project site during construction. Due to the nature of the project, there is potential for adverse effects to these species and their habitats from construction activities occurring adjacent to the river (e.g. possibility for sediment discharge), and beneath the river (e.g. possibility for directional drilling to erroneously puncture the river bottom or cause a frac-out). However, the project is located approximately 300 feet at its closest point from the banks of the Eel River (from the southern Construction Scenario 1 staging areas) where the horizontal directional drilling would take place. The horizontal directional drilling will be completed by trained professionals at approximately 80 feet below the Eel River, which will not disturb in-stream habitat because no physical activity would take place within the stream channel itself. Additionally mitigation and conservation measures (BMPs) will be implemented to ensure that the project avoids and/or minimizes any adverse effects. The proposed project will have no effect on EFH.

Mitigation Measures HWQ-1 and HWQ-2 (see Section 3.10 (a)) would serve to protect water quality during construction and require development of a Frac-Out Contingency Plan. Mitigation Measure BIO-6 (see Section 3.4 (c) below) establishes avoidance and minimization measures to protect waters from sediment-related impacts. With the implementation of Mitigation Measures HWQ-1, HWQ-2, and BIO-6, the impact to special status fish would be less than significant.

Special-status Amphibian Species

Northern Red-legged Frogs (*Rana aurora*) are a State Species of Concern and occur along the west coast of North America from British Columbia to California and were evaluated in the Biological Resources Report (GHD 2020). The geographic range split between the Northern and California Red-legged Frog species occurs just south of Elk Creek in Mendocino County where both species overlap. Northern Red-legged Frogs are typically found near freshwater sources (e.g., wetlands, ponds, streams, etc.). However, they can range widely and inhabit damp places far from water. Northern Red-legged Frogs reproduce in water from December to February in Humboldt County, with some breeding occurring as late as March. Preferred egg laying locations are in “vegetated shallows with little water flow in permanent wetlands and temporary pools.” Northern Red-legged Frogs are relatively common in and near coastal portions of Humboldt County and recent records have documented the species near the project area. This being the case, Northern Red-legged Frogs have a moderate chance of occurring within the project area. Northern Red-legged Frogs have also been documented at the WWTP on previous site visits. Therefore, the potential impact on Northern Red-legged frogs is considered potentially significant.

Foothill Yellow-legged Frogs (*Rana boylei*) are known to be present in the Eel River and tributaries and likely occur along the river bank not far from the project area (GHD 2020). This species has a moderate potential to occur in the PSB, particularly where horizontal directional drilling activities will take place close to the Eel River. However, this species seldom wanders more than a few meters from water especially during the dry season, and it is not expected to be present within the project area where there is no suitable habitat. Therefore, the potential impact on Foothill Yellow-legged frogs is considered potentially significant.

Western Pond Turtles (pond turtles) (*Emys marmorata*) are a State Species of Concern and occur in a variety of permanent and semi-permanent freshwater aquatic habitats including lakes, rivers, ponds, creeks, and marshes and were also assessed in the Biological Resources Report (GHD 2020). Pond turtles are known to be present in the general vicinity and may occur along the river bank not far from the project area. Breeding can occur on loose soils on south or west facing slopes so a few pond turtles may venture away from the river into the project area. The species is frequently observed basking on exposed banks, logs, and rocks. Winter activity is possible but limited to unusually warm, sunny days; normally pond turtles are dormant during winter months on the north coast; dormancy typically involves burrowing into loose substrate above the high water mark. Pond turtles have been documented nesting up to 0.5 kilometers from water. Thus, Western Pond Turtles have a moderate chance of occurring within the project area although presence would likely be occasional, seasonal, and temporary. The potential impact to individual Western Pond Turtle is considered potentially significant.

Mitigation

Mitigation Measure BIO-3 would reduce the impact of the project on special status amphibians and reptiles to less-than-significant levels by requiring pre-construction surveys by qualified biologists prior to work in applicable habitats, and measures to avoid take of species.

Mitigation Measure BIO-3: Protect Special Status Amphibians and Reptiles

No more than one week prior to commencement of ground disturbance within 50 feet of suitable Northern Red-legged Frog, Yellow-legged Frog or Western Pond Turtle habitat, a qualified biologist shall perform a pre-construction survey and shall relocate any individuals of Northern Red-legged Frog or Western Pond Turtle or egg masses of Northern Red-legged Frog that occur within the work -impact zone to nearby suitable habitat.

In the event that a Northern Red-legged Frog, Yellow-legged Frog or Western Pond Turtle is observed in an active construction zone, the contractor shall halt construction activities in the area where observed and the frogs or turtles shall be moved to a safe location in similar habitat outside of the construction zone. The same measures above shall apply to Foothill Yellow-legged Frogs which are State Species of Concern and are no longer a CESA candidate.

With the implementation of Mitigation Measure BIO-3, potential impacts to special status amphibians and reptiles will be less than significant.

Passerines and Raptors

In support of the Biological Resources Report (GHD 2020), reconnaissance-level bird surveys occurred at the project area. During this survey, special-status species observed included Cooper's Hawk (*Accipiter cooperi*), Sharp-shinned Hawk (*Accipiter striatus*), Great Egret (*Ardea alba*), and American Peregrine Falcon (*Falco peregrinus anatum*). Additional special status species were documented as having potential to occur at the project area, including Black-crowned Night Heron

(*Nycticorax nycticorax*), Osprey (*Pandion haliaetus*), and Bank Swallow (*Riparia riparia*). In addition, native migratory birds may also be present at the project area. If nesting passerines or raptors were present in trees in the project area, construction noise and/or tree removals would have the potential to impact the species. The impact is considered potentially significant.

Mitigation

Mitigation Measure BIO-4 would reduce the impact of the project on nesting passerines or raptors to less-than-significant levels by requiring pre-construction surveys by qualified biologists prior to work in applicable habitats, and measures to avoid take of species.

Mitigation Measure BIO-4: Protect Special Status, Migratory, and Nesting Birds

Ground disturbance and vegetation clearing shall be conducted, if possible, during the fall and/or winter months and outside of the avian nesting season (March 15 – August 15) to avoid any direct effects to special status and protected birds. If ground disturbance cannot be confined to work outside of the nesting season, a qualified ornithologist shall conduct pre-construction surveys within the vicinity of the project area, to check for nesting activity of native birds and to evaluate the site for presence of raptors and special status bird species. The ornithologist shall conduct at minimum a one day pre-construction survey within the 7 - day period prior to vegetation removal and ground-disturbing activities. If ground disturbance and vegetation removal work lapses for seven days or longer during the breeding season, a qualified ornithologist shall conduct a supplemental avian pre-construction survey before project work is reinitiated.

If active nests are detected within the construction footprint or within 500 feet of construction activities, the ornithologist shall flag a buffer around each nest. Construction activities shall avoid nest sites until the ornithologist determines that the young have fledged or nesting activity has ceased. If nests are documented outside of the construction (disturbance) footprint, but within 500 feet of the construction area, buffers will be implemented as needed. In general, the buffer size for common species would be determined on a case-by-case basis in consultation with the CDFW and, if applicable, with USFWS. Buffer sizes will take into account factors such as (1) noise and human disturbance levels at the construction site at the time of the survey and the noise and disturbance expected during the construction activity; (2) distance and amount of vegetation or other screening between the construction site and the nest; and (3) sensitivity of individual nesting species and behaviors of the nesting birds.

If active nests are detected during the survey, the qualified ornithologist shall monitor all nests at least once per week to determine whether birds are being disturbed. Activities that might, in the opinion of the qualified ornithologist, disturb nesting activities (e.g., excessive noise), shall be prohibited within the buffer zone until such a determination is made. If signs of disturbance or distress are observed, the qualified ornithologist shall immediately implement adaptive measures to reduce disturbance. These measures may include, but are not limited to, increasing buffer size, halting disruptive construction activities in the vicinity of the nest until fledging is confirmed or nesting activity has ceased, placement of visual screens or sound dampening structures between the nest and construction activity, reducing speed limits, replacing and updating noisy equipment, queuing trucks to distribute idling noise, locating vehicle access points and loading and shipping facilities away from noise-sensitive receptors, reducing the number of noisy construction activities occurring

simultaneously, and/or reorienting and/or relocating construction equipment to minimize noise at noise-sensitive receptors.

With the implementation of Mitigation Measure BIO-3, potential impacts to special status, migratory, and nesting birds would be less than significant.

Bats

Several special status bat species have the potential to be present at or near the project area, including the Pallid Bat (*Antrozous pallidus*), Townsend's Big-eared Bat (*Corynorhinus townsendii*), Hoary Bat (*Lasiurus cinereus*), Western Red Bat (*Lasiurus blossevillei*), Long-eared Myotis (*Myotis evotis*), Long-legged Myotis (*Myotis volans*), and Yuma myotis (*Myotis yumanensis*) (GHD 2020).

Habitat for bats (tree cavities, loose bark, riparian forest, etc.) is present in the project area (based on reconnaissance level surveys). Vegetation and structures in the project area likely provide habitat to a variety of bat species. Construction of the project may adversely impact special-status bat species through the removal or modification of vegetation or structures and due to ground disturbance. The impact is considered potentially significant. Mitigation Measure BIO-5 has been incorporated into the project to ensure potential impacts to special status bats would be less than significant.

Mitigation

Mitigation Measure BIO-5 would reduce the impact of the project on special status bats to less-than-significant levels by requiring pre-construction surveys by qualified biologists prior to work in applicable habitats, and measures to avoid take of species.

Mitigation Measure BIO-5: Protect Special Status Bats

A qualified bat biologist shall conduct habitat surveys for special-status bats. Survey methodology should include visual examination of suitable habitat areas for signs of bat use and may utilize ultrasonic detectors to determine if special status bat species utilize the vicinity. Trees within 300 feet of construction activities should be examined. If habitat exists, species presence and site use patterns should be documented, including roost sites. Bat presence in the project may vary seasonally and annually. Surveys should be conducted in a manner to detect the presence of hibernating or torpid bats, reproductive colonies and/or migratory stop-over roosts. If no bat utilization or roosts are found, then no further study or action is required. If bats are found to utilize the project vicinity, or presence is assumed, a bat specialist should be engaged to advise the best method to prevent impact. This may include, but would not be limited to:

- Consultation with the California Department of Fish and Wildlife to determine appropriate measures for protecting bats with young if present, and for implementing measures to exclude non-breeding bat colonies during construction process.
- Phased removal of trees where selected limbs and branches not containing cavities are removed on the first day, with the remainder of the tree removed on the second day.

The implementation of Mitigation Measures BIO-5 would protect against potential project impacts to special status bats, sufficiently reducing the potential effect to be less than significant.

b, c) 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 US Fish and Wildlife Service, including wetlands? (Less Than Significant with Mitigation)

Mapping of sensitive natural communities occurred on February 18, 19, and 26, 2020 (GHD 2020). Components of the project were visited and surveyed for vegetation communities; additional developed project components (e.g. existing stockpile areas near the WWTP) were analyzed via aerial imagery (GHD 2020).

Coast redwood (*Sequoia sempervirens*) forest occurs on the margins of Rio Dell. Per The California Manual of Vegetation, redwoods are dominant in the tree canopy with other native conifer and hardwood species. The *Sequoia sempervirens* forest alliance occurs on the southern side of Northwestern Avenue, at the residential edge of the project and near the hydrant to be replaced (the southwestern most project component) (GHD 2020). This forest type extends outside the project into the surrounding area. The *Sequoia sempervirens* forest alliance is ranked as an S3 community, and is considered Sensitive by CDFW. This forest alliance is only adjacent to project components, and impacts to the *Sequoia sempervirens* forest alliance are not anticipated. As discussed above in 3.4 (a), the *Alnus rubra* Forest Alliance is also present within the project area. Any impacts to special status plant communities would be reduced to be less than significant with the implementation of Mitigation Measure BIO-1.

A reconnaissance-level wetland delineation occurred concurrent with Sensitive Natural Communities mapping and documented probable and possible wetlands within project work areas (GHD 2020). If these areas cannot be avoided, the project may also potentially require temporary disturbance and/or permanent fill of seasonal wetlands within the construction area. Potential impacts to seasonal wetland and other jurisdictional waters would be potentially significant.

Mitigation

Mitigation Measures BIO-6 through BIO-7 require avoidance and minimization of permanent impacts and temporary impacts to sensitive natural communities and wetlands during construction, restoration of pre-project conditions at the conclusion of construction, and compensation of regulated wetlands and sensitive natural communities, thereby reducing potential impacts to natural communities and wetlands to a less-than-significant level.

Mitigation Measure BIO-6: Avoidance and Minimization Measures to Protect Juxtaposed Wetlands

Three-parameter wetland delineation will occur within work areas where possible or probably wetlands were identified and will include identification of adjacent wetlands (juxtaposed). The City shall implement the following avoidance and protection measures for juxtaposed Waters of the United States and Waters of the State that would not be impacted (filled or excavated) during project construction:

1. The City shall attempt to avoid or minimize impacts to wetlands/waters to the greatest extent feasible in the final design plans.
2. Juxtaposed wetlands shall be clearly identified in the construction documents and reviewed by the City prior to issuing for bid to ensure they are clearly marked as equipment exclusion zones during construction.
3. Suitable perimeter control BMPs, such as silt fences, or straw wattles shall be placed below all construction activities at the edge of surface water features to

intercept sediment before it reaches the waterway. These BMPs shall be installed prior to any clearing or grading activities.

Mitigation Measure BIO-7: Compensate for Loss of Wetlands and Waters

Three-parameter wetland delineation will occur within the project footprint. The City shall conduct a pre-construction wetland delineation in areas to be impacted by project construction that may include wetlands (both temporary and permanent impacts). The City shall avoid fill of seasonal wetlands and waters, to the extent feasible. If fill in wetlands cannot be avoided, the City shall compensate for the loss of seasonal wetland habitat so that there is no net loss in wetlands. The City shall compensate for impacts to identified wetlands through creation of wetland at a ratio of no less than 1:1. A Mitigation and Monitoring Plan shall be prepared in coordination with the NCRWQB and the USACE. Compensation for wetlands shall occur so there is no net loss of wetland habitat at ratios to be determined in consultation with the NCRWQCB and USACE. The Plan shall be acceptable to the regulatory agencies with jurisdiction over wetlands and waters and include the following elements: proposed mitigation ratios; description and size of the restoration or compensatory area; site preparation and design; plant species; planting design and techniques; maintenance activities; plant storage; irrigation requirements; success criteria; monitoring schedule; and remedial measures. The Plan shall be implemented by the City.

The City shall also compensate for impacts to other waters by obtaining required permits from the U.S. Army Corp of Engineers, the North Coast Regional Water Quality Control Board, and the California Department of Fish and Game, which shall be received prior to the start of any on-site construction activity. The City shall ensure any additional measures outlined in the permits are implemented.

Implementation of Mitigation Measures BIO-6 through BIO-7 will reduce potential impacts to wetlands to a less-than-significant level.

- 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? (Less Than Significant with Mitigation)**

Project construction and operations do not include in-water work or any other activity that might impede fish migration. Terrestrial project construction and operations do not include construction of any barriers to wildlife migration (e.g. fencing, highly developed roadway, or large structures). Deterrence of migratory and nesting birds associated with noise is addressed in Section 3.4 (a) with Mitigation Measure BIO-3 to ensure the potential impact to migratory and nesting birds would be less than significant.

- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (Less Than Significant)**

HDD implementation may necessitate tree removal and is located within the jurisdiction of the City. According to the City Municipal Code, The City does not have a tree preservation policy or ordinance.

A very small portion of the project area on the north side of the Eel River is located within the jurisdiction of Humboldt County, related to the tie in to the existing Metropolitan wells and

Construction Scenario 1 HDD drilling and drilling work areas. The Open Space and Conservation Element of the Humboldt County General Plan (2017) summarizes policies germane to the protection of biological resources. Applicable policies include:

- BR-P1: Wetland Identification,
- BR-S10: Development Standards for Wetlands, and
- BR-S11: Wetlands Defined.

Policy BR-S10 established that development standards for wetlands shall be consistent with the standards for Streamside Management Areas (SMA). The SMA width applied to wetlands is designated as 50 feet for seasonal wetlands and 150 feet for perennial wetlands. The setback begins at the edge of the delineated wetland.

Humboldt County does regulate tree removal for trees larger than 12 inches in diameter that are in residential zones through a Special Permit. As all potential tree removal associated with the project would occur outside a residential zone, Humboldt County's tree removal policy does not apply.

As the project would obtain a Use Permit from Humboldt County for construction and operations to occur in eastern project areas, the project would be required to be consistent with all applicable provisions of the Humboldt County General Plan as a condition of the permit.

The project would obtain necessary resource agency permits and would avoid and/or compensate for impacts to wetlands and waters to ensure that no net loss occurs. No conflicts with policies or ordinances protecting biological resources have been identified. Therefore, the impact would be less than significant.

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? (No Impact)

There are no adopted Habitat Conservation, Community Conservation, or approval local, regional, or state habitat conservation plans that apply to the project area. No impact would result.

3.5 Cultural Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?		✓		

In support of the project, a Historic Properties Identification Report (HPIR) was prepared to evaluate cultural and historic resources potentially affected by the project (Angeloff 2020). The findings and recommendations of the HPIR are used as the basis for cultural resources impact assessment.

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? (No Impact)

The HPIR did not identify historic resources within the evaluated Area of Potential Effect (APE) and did not conclude that any historic resources would be impacted by the project (Angeloff 2020). The project would not alter any built structures, potentially historic or otherwise, or impede the visual setting of any such structure. No impact would result.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? (Less Than Significant with Mitigation)

The HPIR found that two potentially significant archaeology resources could be affected by the project, although the exact location of each resource within the APE is unknown. Angeloff (2020) found the current project area has been subject to past activities that have disturbed archaeological resources; however, it is highly doubtful that evidence of a significant deposit was completely eradicated by historic use activities and that remnants or intact deposits representing significant historic or prehistoric activities likely still exist under municipal streets. In order to provide protection for archaeological resources that may be inadvertently discovered during the course of construction, Mitigation Measure CR-1 would be implemented. With the implementation of Mitigation Measure CR-1, the potential impact would be less than significant.

c) Disturb any human remains, including those interred outside of formal cemeteries? (Less Than Significant with Mitigation)

Based on results of Angeloff (2020), discovery of human remains was not identified to be likely to occur. However, in the event human remains are encountered during construction, Mitigation Measure CR-2 would be implemented to ensure any potential impact would be less than significant.

Mitigation

Implementation of Mitigation Measures CR-1 and CR-2 would reduce the potential impact to archaeological resources or human remains by requiring construction worker training and procedures that shall be taken in the event of inadvertent discovery

Mitigation Measure CR-1: Implement Worker Sensitivity Training and Inadvertent Discovery Protocols

Construction crew shall attend a pre-project meeting, much like a pre-project safety meeting, and be informed of the heightened possibility of discovering buried deposits. At the close of the meeting each crew member shall be issued a copy of the Inadvertent Discovery Protocol tear sheet provided by the City and included as an attachment in Angeloff (2020) as an attachment to the HPIR. If buried archaeological resources are discovered during project implementation all work should be halted within 50 feet of the find and City officials, a professional archaeologist, and tribal representatives would be contacted immediately to evaluate the find.

Mitigation Measure CR-2: Minimize Impacts to Unknown Archaeological Resources or Human Remains if Encountered

If human remains are discovered during project implementation all work shall be halted and the permitting agency, Humboldt County shall be contacted immediately. The County shall contact the County Coroner immediately and the Coroner would evaluate the find to determine the subsequent course of action.

Implementation of Mitigation Measures CR-1 and CR-2 would reduce potential impacts related to inadvertent discovery of cultural resources to be less than significant.

3.6 Energy

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Result in potentially significant environmental impacts 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?				✓

a) Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? (Less Than Significant with Mitigation)

Construction of the project would involve a variety of earthwork and construction practices, involving the use of heavy equipment as discussed in Sections 1.4.1. Construction would require the use of fuels, primarily gas, diesel, and motor oil. Construction emissions were estimated using CalEEMod version 2016.3.2, and are estimated to be approximately 294 MTCO₂e from all construction activities (Appendix A). The project's construction emissions equal 9.8 MTCO₂e per year when annualized over the assumed 30-year lifespan of the project. Trips associated with project construction would consist of less than 20 per day, and construction equipment would remain staged in the project area once mobilized. Excess soils and construction materials would be stored on-site within previously designated staging areas only. Excess soils may be re-used on-site for backfill and finished grading. Excess soils would not remain stockpiled on-site once the project is complete. The contractor may haul additional excess soils off-site for legal use at other permitted sites. Drill spoils would be collected via vacuum trucks and hauled from the site by the contractor for legal disposal. Any additional consumption of energy to support off-site hauling would not be required.

Inefficient construction-related operations would also be avoided due to the measures in Mitigation Measure AQ-1 (BMPs to Reduce Air Pollution). Equipment idling times would be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes or less (as required by Mitigation Measure AQ-1). Because construction would not encourage activities that would result in the use of large amounts of fuel and energy in a wasteful manner, and with the incorporation of Mitigation Measure AQ-1 which would reduce idling time, impacts related to the inefficient use of construction-related fuels would be less than significant with mitigation.

Operation of the project would include periodic maintenance of infrastructure, including inspections, structural repairs, general upkeep, and road maintenance. These activities would generally be supported by vehicles and use of hand-held tools. The use of fossil-fuel powered equipment to support these operational and maintenance activities would be periodic and short-term (occurring intermittently). These activities would not result in a substantial increase in energy use, and would not result in inefficient, wasteful, or unnecessary consumption of fuels or other energy resources.

Operation and maintenance of the project would not generate additional vehicle trips, above existing conditions. Additionally, no changes would be made to the pumping system required to transport water from both the Metropolitan Wells site and the Water Treatment Plant to storage or service locations. Therefore, the project would not result in an increase in energy use above the existing conditions. The impact would be less than significant with the incorporation of Mitigation Measure AIR-1.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? (No Impact)

The City does not have an adopted plan related to renewable energy or energy efficiency. The project would not conflict with or inhibit the implementation of the State Energy Action Plan, SB 1389, SB 100, AB 1007, or other state regulations that are applicable to the project because the project would not inefficiently utilize energy. In regards to greenhouse gases and energy efficiency, project facilities would comply with applicable state requirements, which is further discussed in Section 3.8 – Greenhouse Gas Emissions. The project would temporarily require the use of construction equipment in order to construct the components of the project; however, these activities would be temporary and would not interfere with the broader energy goals of the City or state. The project would therefore not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, as no component of the project would require an energy source, beyond the temporary use of construction equipment, above existing energy operational energy consumption. No impact would result.

3.7 Geology and Soils

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?				✓
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?		✓		

The project is located in the generally flat and gently sloping Eel River valley. Soils beneath paved surfaces within the street rights-of-way have been previously disturbed and compacted at the time of street construction and utility installation. Soils would see little to no disturbance at the water tank site as a result of tank replacement. Soils would be disturbed to the greatest degree at the entrance/exit pits for the horizontal directional drilling under the river. Each pit would be approximately 72 square feet in size and excavated to a depth of four feet. The drilling process would disturb soils primarily under the Eel River. The installation of a new water pipe in the

Northwestern Avenue right-of-way previously disturbed and compacted the area as well as previous street construction and other subsequent improvements.

a, 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. (No Impact)

The project site is not located within an active Alquist-Priolo fault mapped by the California Geological Survey (DOC 2020). The project would have no impact with regard to the rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map. The nearest fault zone is the Hydesville Fault Zone, located approximately 2.5 miles north of the project (DOC 2020). Additionally, the project does not include structures designed for human occupancy. No impact related to fault rupture would result.

a, ii) Strong seismic ground shaking? (Less Than Significant)

The project is situated within a seismically active area close to several seismic sources capable of generating moderate to strong ground motions. Because the project is located within a seismically active area, the probability that strong ground shaking associated with large magnitude earthquakes would occur during the design life of the underground or bridge-mounted pipeline is high. Thus, the pipeline would be designed to resist moderate to very strong levels of seismic ground shaking without experiencing structure damage, consistent with recommendation from the geotechnical investigation (see Environmental Protection Action 1).

Project implementation would not increase risk of strong seismic ground shaking or exposure to strong seismic ground shaking above existing conditions. If strong seismic ground shaking were to damage the proposed facilities, it is unlikely that human lives would be put at risk because the project does not involve the construction of habitable structures. The project would be constructed to the seismic standards of the most recent California Building Code, as applicable. Therefore, the impact to people and structures from strong seismic ground shaking would be less than significant.

a.iii, a.iv, c, d) Liquefaction, landslides, or otherwise unstable soils? (No Impact)

The project is not located in a mapped liquefaction hazard zone (Humboldt PBD 2015). Liquefaction is a phenomenon involving loss of soil strength, and resulting in fluid mobility through the soil. Liquefaction typically occurs when loose, uniformly-sized, saturated sands or silts are subjected to repeated shaking in areas where the groundwater is less than 50 feet below ground surface. In addition to the necessary soil and groundwater conditions, the ground acceleration must be high enough, and the duration of the shaking must be sufficient, for liquefaction to occur.

Project implementation would not increase risk of liquefaction or exposure to liquefaction above existing conditions and no impact would occur. The project area is generally flat and gently sloping, located in the Eel River valley. Steep slopes and hillslopes are not present at the pipe replacement and HDD sites, including existing street rights-of-way. The steepest slope in the project area is located at the water tank site, which has a slope of approximately 20%. Thus, landslides within or near the project are unlikely to occur, and the potential for landslide occurrence is not increased by the project.

In addition, the City shall implement Environmental Protection Action 1 – Implement Geotechnical Design Recommendations, which would further address the seismic and foundation design criteria and determine the appropriate method of directional drilling under the Eel River. No impact would result.

b) Result in substantial soil erosion or the loss of topsoil? (Less Than Significant)

Construction activities, including trenching, directional drilling, and operation of heavy machinery would disturb soil and, therefore, have the potential to cause erosion. Erosion and sediment control provisions prescribed in the Rio Dell Municipal Code, NCRWQCB regulations, and the California Building Code (CBC) would be required as part of the project. BMPs may include: silt fences, straw wattles, soil stabilization controls, site watering for controlling dust, and sediment detention basins. These BMPs are designed to maintain potential water quantity impacts at a less than significant level during and post construction. Therefore, the potential soil erosion impact would be less than significant.

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? (No Impact)

The purpose of the project is replace existing water infrastructure and to create a more seismically secure backup water system for the City. The project does not include, expand, or otherwise involve the use of septic tanks or other alternative wastewater disposal systems. No impact would result.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (Less Than Significant with Mitigation Incorporation)

Paleontological resources are the remains or traces of prehistoric animals and plants. Paleontological resources, which include fossil remains and geologic sites with fossil-bearing strata are non-renewable and scarce and are a sensitive resource afforded protection under environmental legislation in California. Under California PRC § 5097.5, unauthorized disturbance or removal of a fossil locality or remains on public land is a misdemeanor. State law also requires reasonable mitigation of adverse environmental impacts that result from development of public land and affect paleontological resources (PRC § 30244).

It is unlikely that project construction would impact potentially significant paleontological resources because most of the project occurs in relatively newly deposited alluvium. However, the possibility of encountering a paleontological resource during construction cannot be completely discounted, therefore, the impact related to the potential disturbance or damage of previously undiscovered paleontological resources, if present, is considered potentially significant.

Mitigation

Mitigation Measure GEO-1 would reduce the impact of construction activities on potentially unknown paleontological resources to a less-than-significant level by addressing discovery of unanticipated buried resources and preserving and/or recording those resources consistent with appropriate laws and requirements.

Mitigation Measure GEO-1: Inadvertent Discovery of Paleontological Resources

In the event that fossils are encountered during construction (i.e., bones, teeth, or unusually abundant and well-preserved invertebrates or plants), construction activities shall be diverted away from the discovery within 50 feet of the find, and a professional paleontologist shall be notified to document the discovery as needed, to evaluate the potential resource, and to assess the nature and importance of the find. Based on the scientific value or uniqueness of the find, the paleontologist may record the find and allow work to continue, or recommend salvage and recovery of the material, if it is determined

that the find cannot be avoided. The paleontologist shall make recommendations for any necessary treatment that is consistent with currently accepted scientific practices. Any fossils collected from the area shall then be deposited in an accredited and permanent scientific institution where they would be properly curated and preserved.

Implementation of Mitigation Measure GEO-1 would reduce this impact to a less-than-significant level for both construction and operation because a plan to address discovery of unanticipated paleontological resources and to preserve and/or record those resources consistent with appropriate laws and requirements would be implemented.

3.8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?			✓	

The NCUAQMD has not adopted regulations regarding the evaluation of greenhouse gas (GHG) emissions in a CEQA document, and has not established CEQA significance criteria to determine the significance of impacts with regard to GHGs. The NCUAQMD recommends considering the GHG emission CEQA standards from the Bay Area Air Quality Management District (BAAQMD). Pacific Gas & Electric provides energy to the City.

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

As provided by the BAAQMD's CEQA Air Quality Guidelines, the following analysis quantifies greenhouse gas emissions from operation and compares it to the 1,100 MTCO₂e per year threshold established by the BAAQMD. For project construction, BAAQMD does not have quantitative GHG emission thresholds (BAAQMD 2017). Rather, the BAAQMD states that a lead agency (the City) should disclose GHG emission information and make a determination on the significance in relation to meeting AB 32 GHG reduction goals.

Project construction activities would result in a temporary increase in GHG emissions, including exhaust emissions from on-road trucks, worker commute vehicles, and off-road heavy-duty equipment. Construction would require earthmoving and other equipment, as used for similar projects, and which have been accounted for in the State's emission inventory and reduction strategy for both on and off-road vehicles. Construction emissions estimated via CalEEMod version 2016.3.2 were approximately 294 MTCO₂e from all construction activities over the construction period (Appendix A). The project's construction emissions equal 9.8 MTCO₂e per year when annualized over the assumed 30-year lifespan of the project. Emissions during construction would not be a considerable contribution to the cumulative greenhouse gas impact, given that construction would be temporary, of short duration, and would not require a large fleet of earthmoving equipment and soil-off hauling beyond the normal equipment and activities related to such utility or infrastructure projects. Therefore, the project's construction-related emissions would be less than significant.

Project operation would not result in greenhouse gas emissions above existing conditions. No impact would result.

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

The project is evaluated for consistency with the CARB *2017 Climate Change Scoping Plan*. The 2017 Scoping Plan provides California's climate policy portfolio and recommended strategies to put the state on a path to achieve the 2030 target. The scenario includes ongoing and statutorily required programs, continuing the Cap-and-Trade Program, and high-level objectives and goals to reduce GHGs across multiple economic sectors. Existing programs, also known as "known commitments," identified by the 2017 Scoping Plan include: SB 350, the LCFS, CARB's Mobile Source Strategy, Senate Bill 1383 for short-lived climate pollutants and California's Sustainable Freight Action Plan. The high-level objective and goals recommendations cover the energy, transportation, industry, water, waste management, agriculture, and natural and working lands, and are to be implemented by a variety of state agencies.

Project construction would cause a temporary increase in GHGs, however as discussed above Project emissions would not exceed the identified emission thresholds. Project construction is analyzed for consistency with the *2017 Climate Change Scoping Plan* in Table 3.8-1.

Table 3.8-1. Consistency Analysis between Project and Climate Change Scoping Plan

Scoping Plan Reduction Measures	Consistency/Applicability Determination
California Cap-and-Trade Program Linked to Western Climate Initiative. Implement a broad-based California Cap-and-Trade program to provide a firm limit on emissions. Link the California cap-and-trade program with other Western Climate Initiative Partner programs to create a regional market system to achieve greater environmental and economic benefits for California. Ensure California's program meets all applicable AB 32 requirements for market-based mechanisms.	Not Applicable. This is a statewide measure that cannot be implemented by the project applicant or lead agency. The project would not result in an increased operational energy use.
California Light-Duty Vehicle Greenhouse Gas Standards. Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals	Consistent. This is a statewide measure that cannot be implemented by the project applicant or lead agency. However, the standards would be applicable to the light-duty vehicles that would access the project site.
Energy Efficiency. Maximize energy efficiency building and	Not Applicable. This is a measure for the state to increase its energy efficiency standards in new

appliance standards; pursue additional efficiency including new technologies, policy, and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California.	buildings. The project would not result in new habitable buildings subject to the energy efficiency standards.
Renewable Portfolio Standard. Achieve 33 percent renewable energy mix statewide. Renewable energy sources include (but are not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas.	Not Applicable. This is a statewide measure that cannot be implemented by the project applicant or lead agency. The project would not result in an increased operational energy use.
Low Carbon Fuel Standard. Develop and adopt the Low Carbon Fuel Standard.	Consistent. This is a statewide measure that cannot be implemented by the project applicant or lead agency. When this measure is initiated, the standard would be applicable to the fuel used by vehicles that would access the project site.
Regional Transportation-Related Greenhouse Gas Targets. Develop regional greenhouse gas emissions reduction targets for passenger vehicles. This measure refers to SB 375.	Not applicable. This is a statewide measure calling for the development of GHG emission reduction targets.
Vehicle Efficiency Measures. Implement light-duty vehicle efficiency measures.	Not applicable. This is a statewide measure that cannot be implemented by the project applicant or lead agency.
Goods Movement. Implement adopted regulations for the use of shore power for ships at berth. Improve efficiency in goods movement activities.	Not applicable. The project does not propose any changes to modes of transportation of goods.
Million Solar Roofs Program. Install 3,000 MW of solar-electric capacity under California's existing solar programs.	Consistent. This measure is intended to increase solar power throughout California, which is being done by various utility companies and solar programs. The project would not result in new buildings subject to the program.
Medium/Heavy-Duty Vehicles. Adopt medium and heavy-duty vehicle efficiency measures.	Not applicable. This is a statewide measure that cannot be implemented by the project applicant or lead agency.

<p>Industrial Emissions. Require assessment of large industrial sources to determine whether individual sources within a facility can cost- effectively reduce greenhouse gas emissions and provide other pollution reduction co-benefits. Reduce greenhouse gas emissions from fugitive emissions from oil and gas extraction and gas transmission. Adopt and implement regulations to control fugitive methane emissions and reduce flaring at refineries.</p>	<p>Not applicable. This measure would apply to the direct GHG emissions at major industrial facilities. The project is not industrial.</p>
<p>High Speed Rail. Support implementation of a high-speed rail system.</p>	<p>Not applicable. This is a statewide measure that cannot be implemented by the project applicant or lead agency.</p>
<p>Green Building Strategy. Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.</p>	<p>Not Applicable. This is a measure for the state to increase its energy efficiency standards in new buildings. The project would not result in new habitable buildings subject to the energy efficiency standards.</p>
<p>High Global Warming Potential Gases. Adopt measures to reduce high global warming potential gases.</p>	<p>Not Applicable. The project would not include air conditioners or commercial refrigerators.</p>
<p>Recycling and Waste. Reduce methane emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero-waste.</p>	<p>Consistent. The project does not include a landfill. The project would reduce construction waste with implementation of state mandated recycling and reuse mandates.</p>
<p>Sustainable Forests. Preserve forest sequestration and encourage the use of forest biomass for sustainable energy generation.</p>	<p>Not Applicable. The project would not include tree removal or areas for reforestation.</p>
<p>Water. Continue efficiency programs and use cleaner energy sources to move and treat water.</p>	<p>Not Applicable. The project would not include an increase in water consumption or energy use associated with water treatment or transport.</p>
<p>Agriculture. In the near-term, encourage investment in manure digesters and at the five- year Scoping Plan update determine if</p>	<p>Not applicable. The project does not include agricultural production.</p>

the program should be made mandatory by 2020.

Source of Scoping Plan Reduction Measures: CARB 2008

As described in Table 3.8-1, the project is consistent with AB 32, as outlined in the 2008 and 2017 Climate Change Scoping Plans. Therefore, the project would not conflict with AB 32 or the Climate Change Scoping Plan, and would result in a less than significant impact.

3.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			✓	
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?			✓	

This section evaluates the potential impacts related to hazards and hazardous materials during construction and operation of the project.

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)

Construction of the project would include the transport and use of common hazardous materials inherent to the construction process, including petroleum products for construction equipment and vehicles, paints, concrete curing compounds, and solvents for construction of project

improvements. These materials are commonly used during construction, are not acutely hazardous, and would be used in relatively small quantities.

Caltrans and the California Highway Patrol (CHP) regulate the transportation of hazardous materials and wastes, including container types and packaging requirements, as well as licensing and training for truck operators, chemical handlers, and hazardous waste haulers. The California Division of Occupational Safety and Health (Cal-OSHA) also enforces hazard communication program regulations which contain worker safety training and hazard information requirements, such as procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees.

Project construction would be required to implement storm water best management practices during construction in accordance with the State Water Resources Control Board General Construction Storm Water Permit. Best management practices addressing materials management would be required, including proper material delivery and storage, spill prevention and control, and management of concrete and other wastes.

Because the City and its contractors would be required to comply with existing and future hazardous materials laws and regulations and applicable best management practices addressing the transport, storage, use, and disposal of hazardous materials, the potential to create a significant hazard to the public or the environment during construction of the project would be less than significant.

Following construction, operation of the project would not result in the need for new hazardous materials that would need to be transported, used, or disposed. No operational impact would occur.

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? (Less Than Significant Impact with Mitigation)

The project would utilize heavy machinery to perform some construction-related tasks including grading, drilling, excavation, and transportation of materials. There is always the possibility when equipment is operating that an accident could occur and fuel could be released onto the soil. Implementation of Mitigation Measure HAZ-1 will be implemented to ensure potential impacts related to an accidental spill are less than significant.

Mitigation

Implementation of Mitigation Measure HAZ-1 will require protective measures to ensure hazardous materials do not inadvertently impact waters or water quality.

Mitigation Measure HAZ-1: Protection of Waters from Hazardous Materials

Equipment on site during construction will be required to have emergency spill cleanup kits immediately accessible in the case of any fuel or oil spills. Equipment will not be refueled near the Eel River or any perennial wetland. If equipment must be washed, it will be washed off-site.

With the incorporation of Mitigation Measure HAZ-1, the potential impact to water quality would be less than significant.

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

There are two schools in Rio Dell: Monument Middle School and Eagle Prairie Elementary School. The two schools are located immediately adjacent to each other on Center Street. Seven pipe segment replacement locations and a number of fire hydrant installation/replacement locations are located within 0.25 miles of the schools. No HDD or water tank-related activities are located within .25 miles of either school. Construction activities associated with the pipe segment and fire hydrant replacements are assumed to include the use of hazardous materials such as fuels, lubricants, degreasers, paints, and solvents. These materials are commonly used during construction, are not acutely hazardous, and would be used in small quantities. Numerous laws and regulations ensure the safe transportation, use, storage, and disposal of hazardous materials (see Impact discussion in Section 3.9 (a) and (b) above). Although construction activities could result in the inadvertent release of small quantities of hazardous substances, a spill or release at a construction area is not expected to endanger individuals at nearby schools given the nature of the materials, the small quantities that would be used, and the distance of the schools from the project area. Therefore, because the City and its contractors would be required to comply with existing and future hazardous materials laws and regulations covering the transport, use, and disposal of hazardous materials, and because of the nature and quantity of the hazardous materials to be potentially used by the project, the impact related to the use of hazardous materials during construction adjacent to the school would be less than significant. Project operations would have no impact on Rio Dell schools.

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? (Less than Significant)

A review of the California Department of Toxic Substances Control EnviroStor database (DTSC 2020) and the GeoTracker database (State Water Resources Control Board 2020, CalEPA 2020) indicate that three current or former hazardous materials sites are located near the project sites.

The Eel River Sawmill site (SWRCB Case Number: T0602393346) is located approximately 1,000 feet northwest of the City's Metropolitan Well Site. This well is the source of water for project's Eel River Crossing Construction Scenarios 1 through 3. Petroleum hydrocarbons from oil spills and fuel use at the site are chemicals of concern, as are pentachlorophenol, and dioxins from historical wood treatment operations. The status of the site is listed as "Open – Verification Monitoring as of 6/22/2017".

The Humboldt Pacific Transport site (SWRCB Case Number: T0602393131) is located approximately 700 feet northwest of the Construction Scenario 1 HDD drill pit and work area on North Pacific Avenue. This site is a former auto wrecking yard. Soil and groundwater investigations showed release of various chemical compounds due to the auto wrecking activities. The cleanup status is listed as "Open - Inactive as of 11/14/2008."

The Nally Enterprises sites are located near the intersection of North Pacific Avenue and Eeloa Avenue. Approximately 500 feet west of the Construction Scenario 1 HDD drill pit lies a Leaking Underground Storage Tank (LUST) Cleanup site (SWRCB Case Number: T0602300082). Its cleanup status is listed as "Completed – Case Closed). Approximately 100 feet east of the other Construction Scenario 1 HDD drill pit lies a contaminated soils site (SWRCB Case Number: SL0602333574). Listed contaminants include automotive gasolines, diesel fuel, and

waste/motor/hydraulic/lubricating oils. The cleanup status of the site is listed as “Completed – Case Closed as of 6/25/2011”.

Proposed ground-disturbing activities are not anticipated to take place on or immediately adjacent to the former Eel River Sawmill or the Humboldt Pacific Transport Site. The HDD alignments for Construction Scenarios 1 and 2 would not pass under or through either of the sites; this ensures that potentially contaminated soils would not present in the drill spoils. The Nally Enterprises sites have been remediated to the satisfaction of the SWRCB and are closed cases. They no longer represent a hazard to the public or to the environment. The impact would be less than significant.

- 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)**

The nearest airport is the Rohnerville Airport, which is located more than two miles from the project area. No impact would result.

- f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (No Impact)**

The City does not have an independent emergency response plan. However, the City does have hazardous material response plans associated with the regulatory requirements for their wastewater treatment, water treatment plant facilities and operations, and an emergency response plan that establishes chain-of-command and response procedures between the emergency services, public works, City staff and Council, and other essential departments and outside organizations. The proposed project does not conflict with these plans. No impact would result.

- g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? (Less than Significant)**

The California Department of Forestry and Fire Protection (CAL FIRE) is required by law to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These Fire Hazard Severity Zones (FHSZ) influence how people construct buildings and protect property to reduce risk associated with wildland fires. The project site is primarily located in a local responsibility area (LRA) meaning an area where local governments have financial responsibility for wildland fire protection (Humboldt County 2020). Project areas located north of the Eel River are located within the State Responsibility Area and are designated as a moderate fire risk (CalFire Fire hazard Severity Zones in SRA, 2007). Project areas located on the south side of the Eel River are located with the Local Responsibility Area of the Rio Dell Fire Protection District. All project sites in this portion are designated as moderate fire risk with the exception of the Douglas Street Water Tank site, which is designated as a high fire risk.

It is possible fire ignition could occur during construction (e.g. related to heavy machinery usage). The project would not otherwise increase exposure to wildlife fire above existing conditions. The impact would be less than significant.

3.10 Hydrology and Water Quality

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water 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 the 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?			✓	
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?				✓

The project spans both sides of the Eel River, and a number of project areas are located near the Eel River but outside the 100-year FEMA flood zone. The project area does not include any streams, creeks, or other tributaries. Project elements include the horizontal directional drilling of a pipe under the Eel River; however direct contact with Waters would not be anticipated.

- a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? (Less Than Significant with Mitigation)**

If impacts to Waters or wetlands would occur, the project would be required to obtain and comply

with necessary permits requirements required by Section 401 and Section 404 of the Clean Water Act and administered by NCRWQCB and USACE, respectively, acting to prevent or essentially reduce the potential for the project and operations to violate any water quality standards or waste discharge requirements.

The greatest potential project impacts to water quality would result from sediment mobilization during construction and operations or a frac-out during horizontal drilling. Construction and operation activities such as site clearing, grading, excavation, and material stockpiling could leave soils exposed to rain or surface water runoff that may carry soil contaminants (e.g., nutrients or other pollutants) into wetlands and/or waterways near the site, degrade water quality, and potentially violate water quality standards for specific chemicals, dissolved oxygen, suspended sediment, or nutrients. This impact would be potentially significant. Directional drilling has the potential to release drilling fluids into the surface environment through frac-outs. A frac-out is a condition where drilling mud is released through fractured soils and bedrock into the surrounding rock and sand, which travels to the surface. This impact would also be potentially significant.

SWRCB Order No. 2009-0009 applies to public and private construction projects that include one or more acres of soil disturbance. Because the proposed project is anticipated to disturb over one (1) acre of land, compliance with Order No. 2009-0009 would be required. Therefore, if construction and operation activities associated with the project are not properly managed, applicable water quality standards and waste discharge requirements could be violated.

As described in Environmental Protection Action 2, the project construction would obtain coverage under State Water Resources Control Board Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities, as amended by Order No. 2012-0006. In compliance with the NPDES requirements, a Notice of Intent (NOI) would be prepared and submitted to the NCRWQCB, providing notification and intent to comply with the State of California Construction General Permit, if such a permit is required.

If required, a Construction SWPPP would be prepared for pollution prevention and control prior to initiating site construction activities. The Construction SWPPP would identify and specify the use of erosion sediment control BMPs for control of pollutants in stormwater runoff during construction related activities, and would be designed to address water erosion control, sediment control, off-site tracking control, wind erosion control, non-stormwater management control, and waste management and materials pollution control. A sampling and monitoring program would be included in the Construction SWPPP that meets the requirements of the NCRWQCB to ensure the BMPs are effective. A Qualified SWPPP Practitioner would oversee implementation of the SWPPP, including visual inspections, sampling and analysis, and ensuring overall compliance, if a SWPPP is determined to be required.

Additionally, water sourced from dewatering activities would be pumped into Baker tanks (or similar) or dewatering bags and used for dust control purposes. Water sourced from dewatering would not be illegally discharged to wetlands or cause polluted runoff.

Mitigation

The potential violation to water quality standards would be less than significant with the incorporation of Mitigation Measure HWQ-1 and HWQ-2 protecting against water quality impacts related to sedimentation, erosion, hazardous materials, or a frac-out.

Mitigation Measure HWQ-1: Implement Best Management Practices to Protect Water Quality

The following representative Best Management Practices would be implemented to protect water quality during construction to avoid impacts to water quality:

- All contractors that would be performing demolition, construction, grading, operations or other work that could cause increased water pollution conditions at the site (e.g., dispersal of soils) shall receive training regarding the environmental sensitivity of the site and need to minimize impacts. Contractors also shall be trained in implementation of stormwater BMPs for protection of water quality.
- The Contractor would implement BMPs during construction including the following BMPs from the current California Stormwater BMP Handbook for Construction: EC-1: Scheduling; EC-2: Preservation of Existing Vegetation; NS-2: Dewatering Operations; NS-9: Vehicle Equipment and Fueling; NS-10: Vehicle & Equipment Maintenance; WM-2: Material Use; and WM-4: Spill Prevention and Control;
- Contractors would be responsible for minimizing erosion and preventing the transport of sediment to sensitive areas;
- Sufficient erosion control supplies would be maintained on site at all times, available for prompt use in areas susceptible to erosion during rain events;
- Disturbance of existing vegetation would be minimized to only that necessary to complete the work;
- The contractor would make adequate preparations, including training and providing equipment, to contain oil and/or other hazardous materials spills;
- Dewatering operations would be conducted where needed from the work location and stored or disposed of appropriately;
- Vehicle and equipment maintenance should be performed off-site whenever practical;
- Contractor shall ensure that the site is prepared with BMPs prior to the onset of any storm predicted to receive 0.5 inches or more of rain over 24 hours; and
- All erosion and sediment control measures shall be maintained in accordance to their respective BMP fact sheet until disturbed areas are stabilized;

Mitigation Measure HWQ-2: Development of a Horizontal Directional Drilling Hydrofracture Contingency Plan

To avoid potential impacts related to a frac-out, construction specification shall require preparation of a Horizontal Directional Drilling Hydrofracture Contingency Plan, which shall be approved by the City and in place prior to construction. The Plan shall include an anticipated drilling mud design that provides engineering properties and the anticipated fluid pressure required as the pilot hole is incrementally advanced in approximately 10-meter (30-foot) increments. The contractor shall be required to monitor and record the Driller's Mud composition, drill fluid pressure and volumes, and have an inadvertent return contingency plan and associated equipment to minimize impacts. The Driller's Mud, spoils, water, and all other waste materials are to be legally disposed with weight or volume tickets confirming legal disposal. The Plan shall include: visual monitoring, monitoring pressures and volumes, observation during drilling, standards and specification for a four-hour shutdown minimum if frac-out occurs to allow ground to heal, cleanup plan, frac-out tank or vac truck (placed in strategic locations), and roles and

responsibilities in the event of a frac-out event.

Implementation of Mitigation Measure HWQ-1 and HWQ-2 would mitigate potential impacts related to violations of water quality standards and waste discharge requirements to a less-than-significant level by appropriately managing construction dewatering and implementing erosion control measures near streams and other wetted waters of the U.S. or State and developing a contingency plan to avoid environmental impacts resulting from a frac-out during direction drilling.

b) 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)

The project is located in groundwater basin 1-010 (Eel River Valley) and is not listed as a basin in Critical Conditions of Overdraft (DWR 2016). Basin 1-010 is a medium priority basin (DWR 2020). The project would not increase impervious surface to limit recharge and would not result in increased pumping of groundwater resources. Similarly, the project would not decrease groundwater supplies or interfere with groundwater management. During construction, isolated and short-duration groundwater dewatering may occur as needed. Dewatering would be small in scale and generally limited to shallow groundwater only. In one location tunneling related to HDD may require a depth up to approximately 30 feet to intercept a key pipe segment. The impact would be less than significant.

c, i) Substantially alter the existing drainage pattern of the 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 result in substantial erosion or siltation on- or off-site? (Less Than Significant Impact)

Drainage patterns on project areas would not be permanently altered as a result of the project, nor would the project add impervious surfaces. With the exception of the replacement water tank and fire hydrants, all project elements are located below the ground surface. Construction would not alter topography (e.g. disturbed roads would be resurfaced to the same slope and dimensions as existing conditions). Project elements would not result in significant alteration of the existing drainage pattern of the site, and the project areas do not include streams or watercourses except beneath the Eel River. The replaced water tank would not alter drainage patterns. New fire hydrants would be too small to alter a drainage pattern. Implementation of Mitigation Measure HWQ-1 and Mitigation Measure HWQ-2 would serve to avoid potential water quality impacts associated with erosion or siltation during construction. The potential impact would be less than significant.

c, ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? (No Impact)

The project would not increase impervious surfaces or substantially alter topography, slope, or drainage to or near the Eel River or any other tributary. Both on-site and off-site flooding would remain unaffected. No impact would result.

c, 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? (Less Than Significant)

The project would not increase the area of impervious surface. The project also does not include elements that would increase stormwater drainage or necessitate significant design features to accommodate stormwater management. Additionally, in compliance with Environmental Protection Action 2, if required, the project would develop a SWPPP to be approved by the NCRWCB, and the project would be designed to meet NCRQWB storm water requirements. The project would not

cause on- or off-site flooding. The impact would be less than significant.

c, iv) Impede or redirect flood flows? (Less than Significant)

All project areas are located outside of FEMA 100-year flood zone of the Eel River with the exception of the HDD sites described in Construction Scenarios 1 and 2 (FEMA 2020). However, all infrastructure associated with Construction Scenarios 1 and 2 would be located at or below grade and would not impede or redirect flood flows. Existing topography would not be significantly altered in such a manner as to redirect flood flows. The underground pipes would not impede or redirect flood flows because they would be below ground surface. The replacement water tank is located outside the FEMA 100-year flood zone and would be located on approximately same footprint in the same location as the existing tank. The replacement tank would therefore not impede or redirect flood flows. The potential impact would be less than significant.

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

The project site is not located near a larger isolated body of water that may be affected by a seiche. No project area is located within a Tsunami Evacuation Area. The majority of the project areas are located outside of the FEMA 100-year flood zone. HDD-related sites are located within the 100-year flood zone.

In the event of a very significant flood that might inundate, scour, or wash away water infrastructure. The flood magnitude associated with such an event would be both uncommon and substantial. Construction near the Eel River associated with HDD for Construction Scenarios 1 or 2 would occur during summer and falls months limited by permitted in-water work periods. Flooding during this time of year is extremely unlikely to occur. Thus, the risk of releasing construction-related pollutants as a result of a flood would not occur. The potential impact of pollutants to water quality due to project inundation would be less than significant.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? (No Impact)

The relevant water quality control plan is the NCRWQCB Basin Plan, which establishes thresholds for key water resource protection objectives for both surface waters and groundwater. If required, the project would obtain coverage under State Water Resources Control Board Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities, which would include a SWPPP. If impacts to Waters or wetlands would occur, the project would also obtain a NCRWCB Clean Water Act Section 401 Water Quality Certification. These regulatory requirements and associated requisite monitoring would ensure a conflict with the Basin Plan does not occur. No impact would result.

3.11 Land Use and Planning

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?				✓

This section evaluates the potential impacts related to land use, as it applies to construction and operation of the project.

a) Physically divide an established community? (No Impact)

The project would not physically divide a community. While construction would cause temporary traffic impacts due to work in the street rights-of-way, the post-project operations create no permanent disruption to the flow of people or goods throughout Rio Dell. The sole permanent above-ground improvement (the replacement water tank) would likewise not limit circulation or divide a community. No impact would result.

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? (No Impact)

This project is consistent with the Rio Dell Zoning Regulations (Chapter 17 of the Rio Dell Municipal Code). The pipeline and hydrant-related infrastructure meet the definition of “Utility Infrastructure” and are not considered land uses subject to local land use regulation. The water tank site is considered a “Utility Facility” and is located in the “Public Facilities – PF” zone district. This use is permissible in the PF zone district which is intended for the operation of public facilities on lands owned by a public agency.

A very small portion of the project area on the north side of the Eel River is located within the jurisdiction of Humboldt County, related to the tie in to the existing Metropolitan wells. These areas are along Northwestern Road and zoned as public roadway. The adjacent staging and work areas for Construction Scenario 2 is zone TPZ. Project activities within Humboldt County jurisdiction would seek a Conditional Use Permit and adhere to associated requirements.

Construction Scenario 1 HDD drilling and drilling work areas on the north side of US 101 between northbound and southbound US 101 is entirely within the State right-of-way and would seek an Encroachment Permit from Caltrans and adhere to associated requirements.

No impacts related to land use would result.

3.12 Mineral Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
f) 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?				✓
g) 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?				✓

This section evaluates the potential impacts related to mineral resources associated with the project. Aside from the gravel located on the Eel River floodplain, there are no additional mineral resources in the project area.

a, b) 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, or a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (No Impact)

Construction of the proposed project would not result in the loss of mineral resources. Aside from the floodplain gravel, there are no mineral resources found within the project area. Floodplain gravel would not be harvested, removed, or permanently disturbed as a result of project actions. The project does not require a substantial amount of any mineral resource for construction, although some mineral resources (primarily aggregate and rock) would be needed for construction. Therefore, no impact would occur.

3.13 Noise

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Result in 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) Result in generation of excessive groundborne vibration or noise levels?			✓	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				✓

Current noise in the project area is consistent with the noise associated by street and highway traffic. The sites for proposed underground water pipe replacements within street rights-of-way experience noise typical of streets in Rio Dell. The existing tank site experiences noise consistent with the operation of two ground-level water tanks. Noise at the sites of the proposed river crossings (Construction Scenarios 1-3) vary depending on their proximity to US 101. The proposed drilling pits and work area locations associated with Construction Scenario 1 would experience the least noise because they are located in agricultural/residential areas relatively far from US 101. The drilling pits and work area locations associated with Construction Scenario 2 would be located within the US 101 right-of-way and either side of the river and therefore experience greater traffic noise. The Construction Scenario 3 pipe attached to the existing US 101 bridge would be the closest in proximity to highway traffic and as such experiences the greatest noise and vibration.

- a) Result in 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? (Less than Significant)**

Construction of the proposed project would temporarily increase noise in the immediate vicinity of the project sites. The temporary noise increases would result from use of construction equipment for the project, as well as from increased traffic as construction workers commute to and from the project sites. No project site is anticipated to see an increase in operational noise following project completion. For all project locations, sensitive noise receptors include single-family residences

(Table 3.1). Eagle Prairie Elementary School and Monument Middle School are also sensitive receptors located in the center of town in close proximity to planned water pipe segment replacements. Given the spatial extent of the project, work would not occur in any one location or on any single street for a significant duration before construction would be complete and work would migrate to the next work area or street.

Sound from a point source is known to attenuate at a rate of -6 dB for each doubling of distance. For example, a noise level of 84 dB Leq as measured at 50 feet from the noise source would attenuate to 78 dB Leq at 100 feet from the source and to 72 dB Leq at 200 feet from the source to the receptor. Based on the reference noise levels in Table 3.13-2, the noise levels generated by construction equipment at the project sites, construction noise would be greatest at the site of the replaced water pipes/fire hydrants within the street rights-of-way. Under a worst case scenario, a person would experience almost the full 85dB noise of an excavator from a distance of 20'. However, this noise would only occurring during a relatively short (1-3 days) construction period on any individual pipe segment or fire hydrant location. Further, this noise is consistent with the noise generated during pipe repairs which occur continuously throughout the City.

Table 3.1 Distance to Noise Receptors

Project Component	Distance to Residential Uses and Schools (feet)
Underground Pipe Segment Replacements in ROW	Less than 20' Residence
Replacement and New Fire Hydrants in ROW	Less than 20' Residence
Douglas Street Water Tank Replacement	Approx. 250' Residence
Painter Street Water Tank Valve Replacement	Approx. 240' Residence
Construction Scenario 1 HDD – Northwestern Ave New Water Pipe Installation	Approx. 350' Residence
Construction Scenario 1 HDD – Entrance Pit and Work Area	Approx. 200' Residence
Construction Scenario 1 HDD – Exit Pit and Work Area	Approx. 100' Residence
Construction Scenario 2 HDD – Entrance Pit and Work Area	Approx. 1,300' Residence
Construction Scenario 2 HDD – Exit Pit and Work Area	Approx. 230' Residence
Construction Scenario 3 – Northside Undergrounding of Pipe	Approx. 1,300' Residence
Construction Scenario 3 – Southside Undergrounding of Pipe	Approx. 230' Residence
Dave Street and Ireland Street Segment Replacements in ROW	Approx. 100' Monument Middle School
Dave Street and Ireland Street Segment Replacements in ROW	Approx. 100' Eagle Prairie Elementary School

Table 3.13-2: Construction Equipment Reference Noise Levels as Measured at 50'

Equipment	Noise Level (dB ¹)	Equipment	Noise Level (dB)
Drill rig truck	84	Jackhammer	85
Horizontal Boring Hydraulic Jack	80	Large Generator	82
Front end loader or Backhoe	80	Paver or Roller	85
Excavator	85	Dump truck	84

Source: Federal Highway Administration, 2006.

Noise Ordinance Compatibility

City of Rio Dell

The 2015 Rio Dell General Plan and the Rio Dell Municipal code does not include construction or operational noise-related standards or regulations. Therefore the proposed project would not conflict with the City's noise policies.

Humboldt County

The Humboldt County's Noise Compatibility Standards set a construction noise range from a maximum of 65 dB – 85 dB, depending on the land use. However, exceptions include the use of heavy machinery and tools used during construction of permitted structures when conforming to the terms of the approved Use Permit (Humboldt County 2017d). The project would obtain a Use Permit and would comply with terms of the approved permit, including those that specifically address noise limitations. The project would not conflict with Humboldt County's Noise Element or Noise Compatibility Standards.

Noise and Land Use Compatibility

Construction

All project locations would experience a temporary increase in noise as a result of construction activities. The entrance pit and work area associated with Construction Scenario 1 and 2 would experience the longest noise duration because the HDD process would require multiple weeks to complete. The installation of the under-river pipe, which would occur following drilling at the exit pit and work areas associated with Construction Scenario 1 and 2, would be completed in approximately one week. Construction activities occurring within existing street rights-of way such as the pipe segment replacements and fire hydrants would be completed in a matter of days-a week for any given segment. The installation of the new water pipe in the Northwestern Avenue right-of-way would be comparatively longer given the nearly 3,000 feet of the pipe to be installed. The water tank replacement at the Douglas Street water tank site would involve equipment producing upwards of 85dB measured at 50 feet. The noise would have attenuated to a moderate 70dB by the time that it has reached the nearest of the nearby homes or schools. The replacement of above-ground valves would not require heavy equipment and is therefore not expected to create

¹ "dB" is a weighted decibel measurement for assessing hearing risk and, therefore, is used by most regulatory compliance.

excessive noise. The potential impact from construction related noise would be less than significant.

Operation

None of the project components is expected to produce operational noise in excess of the pre-project baseline. The majority of the project consists of underground pipes. The replacement water tank would not have any associated on-site pump or mechanical equipment that would produce ambient noise. No impact would result.

b) Result in generation of excessive groundborne vibration or noise levels? (Less Than Significant)

Earth moving and earth compacting activities using heavy machinery would create groundborne vibrations and noise that may be noticeable on a temporary basis during construction activities. Noticeable groundborne vibrations and noise would be limited to normal daytime hours. Additional groundborne vibrations beyond baseline conditions are not anticipated as a result of operational activities, and the potential impact would be less than significant.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? (No Impact)

The project is not located within the vicinity of a private airstrip or an airport land use plan, or within two miles of a public airport. No impact would result.

3.14 Population and Housing

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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, necessitating the construction of replacement housing elsewhere?				✓

The 2018 population for Rio Dell was estimated to be 3,390 people (US Census 2020). The proposed project would replace and improve existing municipal water infrastructure for continued service to the existing community population. The objective of the project is not to advance or facilitate future population growth.

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)? (No impact)

The proposed project does not include components that would directly or indirectly induce unplanned population growth. The key project elements consist of the replacement of degrading water pipes and improvements in the supply of standby (backup) water supplies. No project component increases the amount of water available to support development nor does it provide water service to new areas. The replacement of the redwood water tank would resolve a noted deficiency in water storage capacity, but does not represent an ability to serve additional customers, compared to existing conditions. No impact would result.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? (No Impact)

The proposed project would not displace people or housing or otherwise effect housing because there is no housing located in the immediate vicinity of the project area and the project does not include modification or construction of housing. No impact would result.

3.15 Public Services

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

The project would result in an overall benefit to public services by improving the quality and reliability of the water supply. It supports the City's planning goals and corrects deficiencies noted in the Preliminary Engineering Report (GHD 2019).

- a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for public services? (No Impact)**

The project itself results in improvements to public utility facilities. The project improvements would not result in the need to increase staffing, create new hazardous conditions, or result in a modification to the road system that would restrict access for emergency services. The project improvements consist of passive, largely subterranean water system improvements.

New and replaced fire hydrants would improve fire protection capacity and result in a positive benefit to the community. Additional police protection is not required because the project would not require increased water maintenance staffing. The above-ground project components (e.g. water tank and fire hydrants) would be unlikely to be the target of theft or vandalism.

The project would not affect schools because it would not induce population growth. There are no public parks located in Rio Dell. For the reasons stated above, the project would not result in an impact to public services.

3.16 Recreation

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				✓
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?				✓

There are no parks or recreational areas located in the vicinity of the project areas, including river access points.

- a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? (No Impact)**

The proposed project improvements do not induce population growth or an increase in staffing in any part of Rio Dell. Parks and recreational areas are not located within the City. No impact would result.

- b) Include or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment? (No Impact)**

The proposed project does not include the construction or expansion of recreational facilities. Therefore, no impact would result.

3.17 Transportation

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			✓	
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?			✓	

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? (Less than Significant)

The project does not conflict with any of the goals or policies contained in the Rio Dell General Plan Circulation Element. The project does not involve a permanent modification of the Rio Dell street network. Impacts to local streets would be limited to the construction phase of the project, after which all streets would be restored to their pre-project condition.

A small number of project work areas north of the Eel River near Northwestern Avenue are within the jurisdiction of Humboldt County. Northwestern Avenue would be used for access. In addition, a water line would be trenched alongside Northwestern Avenue to connect to the existing Metropolitan well site. These activities do not conflict with any of the goals or policies contained in the Humboldt County General Plan Circulation Element.

Pipe Segment Replacements and Fire Hydrants

During the construction phase of the project, traffic would be affected most noticeably by the replacement of pipe segments within street rights-of-ways, including HDD work areas. As described in the project description and shown in Figure 2, there are a number of pipe segments that would be replaced. Replacing these pipes would involve traffic controls, signs, flaggers, land closures, etc. consistent with typical water distribution line maintenance. The pipes would be exposed by excavating a trench in the street right-of-way. Traffic control would be performed consistent with standard City procedures for pipe maintenance or replacement. Some of these pipe segment replacements would occur in Caltrans rights-of-way for City streets that cross under US 101.

These construction activities are not expected to impact the flow of traffic on US 101, with the exception of Construction Scenario 3. Construction Scenario 3 would likely require a temporary lane closure of US 101 to enable safe installation of the new water pipe within the bridge structure, in coordination with Caltrans. The Construction Scenario 3 lane closure would be consistent with the safety and traffic control standards required in the Caltrans encroachment permit. The impact would be less than significant.

HDD North Side of River

Horizontal Directional Drilling activities, as proposed for Construction Scenario 1 and 2, would cause the longest duration traffic impact of any project activity in any single location. Drilling activities at the entrance pit (north side of the river) for Construction Scenario 1 and 2 are anticipated to take up to six weeks to complete. During this time, workers and equipment (e.g. drill spoils haul trucks) would be traveling to and from the sites. Construction Scenario 1 may result in additional traffic near the eastern terminus of Northwestern Avenue, a rural road. However, this portion of Northwestern Avenue sees very little local traffic due to the fact that it serves a very sparsely populated area consisting of approximately 1-5 rural residences and a single agricultural operation. Drilling activities associated with Construction Scenario 2 would take place in a heavily disturbed median area three acres in size on the north bank of the river between the northbound and southbound lanes of US 101. Work in this area poses no risk to local traffic, but has the potential to create unsafe conditions due to the fact that workers and equipment would need to cross US 101 outside of an established intersection. To ensure safety, access procedures would be consistent with the terms of the Caltrans encroachment permit. The impact would be less than significant with mitigation.

HDD South Side of River

Drilling activities on the south side of the river associated with Construction Scenario 1 and 2 are expected to take up to two weeks to complete. Construction activities at the exit pit focus primarily on the staging of the approximately 2,000 feet of pipe and insertion of the pipe into the borehole. The exit pit and work area for Construction Scenario 1 would center on the gravel area of North Pacific Avenue. Approximately ten homes use North Pacific Avenue as their sole means of access and may experience short-term, short-duration construction delays. The laydown and staging area for the pipes would occur either along the Eeola Avenue right-of-way west of the intersection with North Pacific Avenue or in a grass vacant lot located east of the intersection of Eeola Avenue and North Pacific Avenue.

The exit pit and pipe stage area of Construction Scenario 2 would be located in the Caltrans right-of-way in the median between the northbound and southbound lanes of US 101. This location would have no impact on local traffic but has the potential to create unsafe conditions due to the fact that workers and equipment would need to cross US 101 outside of an established intersection. To ensure safety, access procedures would be consistent with the terms of the Caltrans encroachment permit. The impact would be less than significant.

Water Tank Replacement/Valve Replacement

Access to the existing Douglas Street and Painter Street Water Tanks is provided via existing rural gravel access roads. The roads may undergo minor improvements such as adding additional gravel to the roads surface, but no substantial regrading or realignment is proposed. Construction and staging activities on these sites would take place outside of the street rights-of-way. Construction-related vehicle trips would increase traffic on local streets to a minor degree. The impact would be less than significant.

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? (Less than Significant)

The provisions included in § 15034.3 are not applicable statewide until July 1, 2020. The following discussion is included prospectively. § 15064.3, subdivision (b), of the CEQA Guidelines lists the criteria for analyzing transportation impacts from proposed projects. The criteria are broken up into four categories, including land use projects, transportation projects, qualitative analysis, and methodology. Transportation projects that reduce, or have no impact on, vehicle miles traveled

should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. Because the proposed project has no permanent impact on streets and roadways, there would be no impact on vehicle miles traveled as a result of construction. In the project area, thresholds have not yet been established for vehicle miles traveled; however, slight increases in construction-related or operational-related vehicle miles traveled would not impact or reduce the Level of Service of associated roadways. The impact would be less than significant.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (No Impact)

The project would not result in an alternation in the geometric design of a street or road, nor would it create or alter an intersection. There are not proposed changes in land use associated with this project. No impact would result.

d) Result in inadequate emergency access? (Less than Significant)

Construction activities would primarily occur within segments of municipal streets. Construction would be phased such that not all streets would be impacted at any one time during construction. Construction related traffic would consist of earthwork and directional drilling equipment and support vehicles. Construction-related road or lane closures are not expected, and emergency access would not be limited. The potential impact would be less than significant.

3.18 Tribal Cultural Resources

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Register of Historic Resources, or in a local register of historic resources as defined in Public Resources Code section 5020.1(k)?		✓		
b) Cause a substantial adverse change in the significance of a tribal cultural resource that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1? In applying the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.		✓		

a,b) Cause a substantial adverse change in the significance of a tribal cultural resource? (Less Than Significant with Mitigation)

CEQA requires lead agencies to determine if a proposed project would have a significant effect on tribal cultural resources. The CEQA Guidelines define tribal cultural resources as: (1) a site, feature, place, cultural landscape, sacred place, or object with cultural value to a California Native American Tribe that is listed or eligible for listing on the California Register of Historical Resources, or on a local register of historical resources as defined in Public Resources Code Section 5020.1(k); or (2) a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant according to the historical register criteria in Public Resources Code Section 5024.1(c), and considering the significance of the resource to a California Native American tribe. The City sent invitations to consult were sent to designated tribal representatives to request consultation under AB 52 on March 10, 2020. Responses were not received.

As discussed in Section 3.5 (Cultural Resources), two potentially significant archaeology resources could be affected by the project, although the exact location of each resource within the APE is unknown. The cultural resource investigation found the current project area has been subject to past activities that have disturbed archaeological resources; however, it is highly doubtful that evidence of a significant deposit was completely eradicated by historic use activities and that remnants or intact deposits representing significant historic or prehistoric activities likely still exist under municipal streets (Angeloff 2020).

Although specific tribal cultural resources were not identified in the HPIR or via AB 52 consultation with tribal representatives, the potential for inadvertent discovery of tribal cultural resources remains. However, with the implementation of Mitigation Measure CR-1 and Mitigation Measure

CR-2, would the potential impact to any tribal cultural resources would be reduced to be less than significant.

3.19 Utilities and Service Systems

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?		✓		
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				✓
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				✓
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?				✓

The project is a public utility project designed to upgrade the existing water distribution system standby municipal water supply. It benefits the City and its population and by maintaining the water system and by reducing the risk of seismic damage.

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? (Less Than Significant with Mitigation)

The project would result in the creation of new water infrastructure in the form of a water pipe that would cross the Eel River (Eel River Crossing) to connect the existing standby water supply (Metropolitan Well Site) to Rio Dell residents. This Eel River Crossing water pipe would replace an existing water pipe attached to the US101 bridge. This project does not involve the construction of storm water, electrical, natural gas, or telecommunications infrastructure/facilities but does focus on the construction of water utilities. The project includes upgrades to the water distribution system whose potential environmental impacts are evaluated as part of this Initial Study/Proposed Mitigated Negative Declaration. The following subjects are related to the proposed water system upgrades, and are evaluated in other sections of this document and require mitigation measures to ensure potential impacts would be less than significant:

- Potential impacts to air quality are evaluated in Section 3.3 (Air Quality) and include Mitigation Measure Air-1.
- Potential impacts related to biological resources are evaluated in Section 3.4 (Biological Resources) and include Mitigation Measures BIO-1 through BIO-7.
- Potential impacts related to cultural resources and tribal cultural resources are evaluated in Section 3.5 (Cultural Resources) and Section 3.18 (Tribal Cultural Resources), respectively, and include Mitigation Measures CR-1 and CR-2.
- Potential impacts related to energy are evaluated in Section 3.6 (Energy) and also include Mitigation Measure Air-1.
- Potential impacts related to Hazards and Hazardous Materials are evaluated in Section 3.9 and include Mitigation Measure HAZ-1.
- Potential impacts related to hydrology and water quality are evaluated in Section 3.9 (Hydrology and Water Quality) and include Mitigation Measure HWQ-1 and HWQ-2.

No additional water infrastructure or expansion of existing facilities beyond those identified in the project description and evaluated in this Initial Study are required. Therefore, with the implementation of the Mitigation Measures referenced above, the potential impact would be less than significant.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? (No Impact)

During construction, City water supplies or local wells could potentially be used for dust control and other activities. Construction-related water demands would be short-term and minimal in volume. HDD-related water would be tanked to the site. Following construction, the project would not directly or indirectly induce population growth and would not result in an increased demand for water. Therefore, no new entitlements or facilities would be required. No impact would result.

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? (No Impact)

The project would not directly or indirectly induce population growth and would not increase the amount of wastewater generated. Municipal water service would remain operational during construction; service would not be disrupted. No impact would result.

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? (No Impact)

Construction of the project would result in a temporary increase in solid waste disposal needs associated with demolition and construction wastes. Construction wastes would include, but not be limited to, excavated soils, construction waste resulting from pipe and valve replacements, mowing and grubbing of work, drilling mud, and staging areas. Construction waste with no practical reuse or that cannot be salvaged or recycled would be legally disposed of at a local transfer station. Drill spoils would be collected via vacuum trucks and hauled from the site by the contractor for legal disposal.

Active permitted in-County transfer stations include the Humboldt Waste Management Authority facilities in Eureka or Samoa, California and the Recology Eel River Transfer Station in Fortuna, California. Solid waste generated by the project would represent a small fraction of the daily

permitted tonnage of these facilities. This would be a less than significant impact on landfill capacity with the implementation of federal, state, and local statutes and regulations related to solid waste. Therefore, the project's construction-related solid waste disposal needs would be sufficiently accommodated by existing landfills, and the impact would be less than significant. Following construction, project operation would not generate additional solid waste. No operational impact would result.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? (No Impact)

No applicable federal solid waste regulations would apply to the project. At the State level, the Integrated Waste Management Act mandates a reduction of waste being disposed and establishes an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance. The project would not conflict with or impede implementation of such programs. Following construction, project operation would not generate additional solid waste. Therefore, no constructional or operational impact would occur.

3.20 Wildfire

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
If located in or near state 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?			✓	

This section evaluates potential impacts related to wildfire risk; no portion of the project area is located within or near a State Responsibility Area (SRA) where Cal Fire is the primary emergency response agency responsible for fire suppression and prevention. The project site is not located in a SRA or lands classified as very high fire severity zones. The project is located approximately 1,000 feet from the nearest SRA (CalFire 2020). While the CEQA Guidelines Appendix G Checklist section for wildfire would not be applicable to the project, the proximity of the SRA (within 1,000 feet) to the project area is evaluated below.

a) Substantially impair an adopted emergency response plan or emergency evacuation plan? (No Impact)

The City does not have an independent emergency response plan. Therefore, the project would not impair implementation of or physically interfere with the plan. No impact would occur.

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? (Less Than Significant)

The project area includes very low slopes in the Eel River valley where windy conditions are common. Fire ignition risk associated with construction activities is low and limited to accidental ignition associated with a potential heavy machinery-related incident. The project would not otherwise increase exposure to wildfire fire above existing conditions. The impact would be less than significant.

- 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 Impact)**

Project construction would result in a low fire ignition risk, associated with a potential heavy machinery accident (discussed in Section 3.20 (b) above). Ongoing operation and use of the project corridor after construction is complete would not result in an exacerbated fire risk.

- 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)**

Project construction would not expose people or structures to significant risk. The project is located in the low-lying, generally flat bottomlands of the Eel River valley. The immediate project area is not forested, although the trees and vegetation are present. The tank replacement would be located on a sloped hillside near trees. Because the project is located in flat bottomlands, risk of flooding or landslides associated with post-fire slope instability or changes in drainage is extremely low. The impact is less than significant.

3.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less-than-Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
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) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?			✓	
c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?			✓	

- 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)**

As evaluated in this IS/MND, the project would not 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; reduce the number or restrict the range of an endangered, rare, or threatened species; or eliminate important examples of the major periods of California history or prehistory

Mitigation measures are listed herein to reduce impacts related to Air Quality, Biological Resources, Cultural Resources, Energy, Geology, Hazards and Hazardous Materials, Hydrology, Tribal Cultural Resources, and Utilities. With implementation of the required mitigation measures, impacts would be less than significant.

- b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects,**

**the effects of other current projects, and the effects of probable future projects)?
(Less Than Significant)**

Cumulative impacts are defined as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (CEQA Guidelines § 15355). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

City of Rio Dell

Efforts to identify cumulative projects included contact with the City to request information on past and future project related to water utilities or projects located within the same or similar project area (City limits). As a result, the City identified two applicable projects:

- Rio Dell ATP/Safe Routes to School Project (planned for construction in 2020)
- Metropolitan Wells Redevelopment Project (completed in 2018)

Both projects would occur prior to the planned implementation of the proposed project but within a similar or overlapping vicinity. Neither project would result in a significant environmental impact to the community or environmental resources in and near Rio Dell.

The Rio Dell ATP/Safe Routes to School Project would improve street and pedestrian safety, including intersection, sidewalk, and street improvements. The project would apply standard BMPs for erosion control, water quality protection, hazardous materials, and other standard considerations, avoiding significant environmental impacts. The project would benefit criteria evaluated in the CEQA guidelines that apply to Transportation.

The Metropolitan Wells Redevelopment Project improved drinking water infrastructure and reliability for the City of Rio Dell and is now complete. The project also applied standard BMPs, avoiding environmental impacts. While the Metropolitan Wells Redevelopment Project also involved municipal water, the project was independent from the proposed project. The project would benefit criteria evaluated in the CEQA guidelines that apply to Public Utilities.

Humboldt County

Outreach to the Humboldt County Planning Department and Humboldt County Department of Public Works was conducted and identified the following applicable projects:

- Storm damage repair project on Monument Road at the City/County line.

Caltrans

Outreach to Caltrans was conducted regarding potential projects along US 101 near Rio Dell. Caltrans projects near Fortuna were not considered to have a potential cumulatively considerable effect, due to the distance between the City of Fortuna and City of Rio Dell (9 miles). The following projects near Rio Dell were identified and would occur within a similar timeframe as the proposed project:

- Eel River Bridge Seismic Retrofit Project, to seismically retrofit the bridge (planned for construction in 2024)
- Humboldt 101 Drainage South Project, planned to rehabilitate drainage in Humboldt County at various locations from the Mendocino County border to Eel River Bridge #04-16R in Rio Dell (planned for construction in 2025)

Both Caltrans projects would involve construction of bridges (one northbound and one southbound)

spanning the Eel River at Rio Dell. The seismic retrofit project would involve the same bridges associated with Construction Scenario 2 and Construction Scenario 3. Drainage improvements are planned for the stretch of US101 north of Rio Dell and would not occur within the community of Rio Dell proper.

Both Caltrans projects would be compliant with CEQA, NEPA, and required individual permits. Additionally, both projects would result in a net environmental benefit (earthquake resiliency and improved drainage, which would benefit water quality) and would not be cumulatively impactful to the water quality of the Eel River watershed or aquatic, wetland, botanical, or wildlife habitat. While the Caltrans projects would occur shortly after the planned implementation window the proposed project, thus a cumulative impact related to overlapping traffic control would not occur.

Of those projects identified and considered for cumulative impacts, all did or would include BMPs and environmental clearance, including both permits and CEQA review. Projects implemented by the City would complement the proposed project to improve transportation and public utilities infrastructure throughout the community without negatively affecting the environment. Storm damage repair on Monument Road would reduce potential environmental impacts related to erosion and entry of fine sediment into the Eel River watershed, and would thus have a positive environmental result. Caltrans' proposed project would also yield a positive environmental result. Therefore, any potential cumulative effect would be less than significant.

c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly? (Less Than Significant)

The project has been planned and designed to avoid significant environmental impacts. As discussed in the analysis throughout Section 3 of this IS/MND, the project would not have environmental effects that would cause substantial adverse direct or indirect effects on human beings. The impact would be less than significant.

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5. Report Preparers

5.1 LEAD AGENCY

Kyle Knopp, City Manager
Randy Jensen, Water Superintendent
Derek Taylor, Wastewater Superintendent

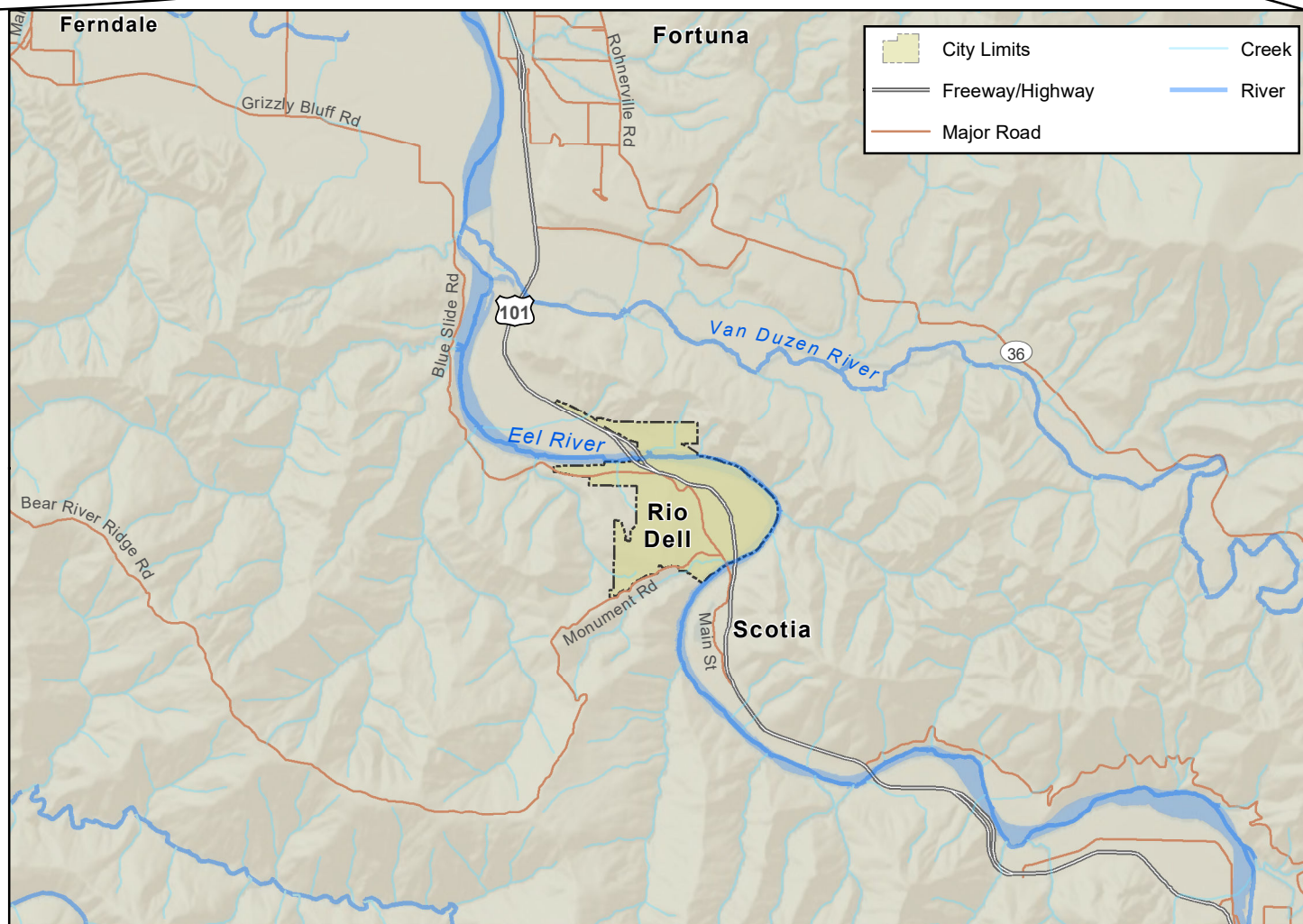
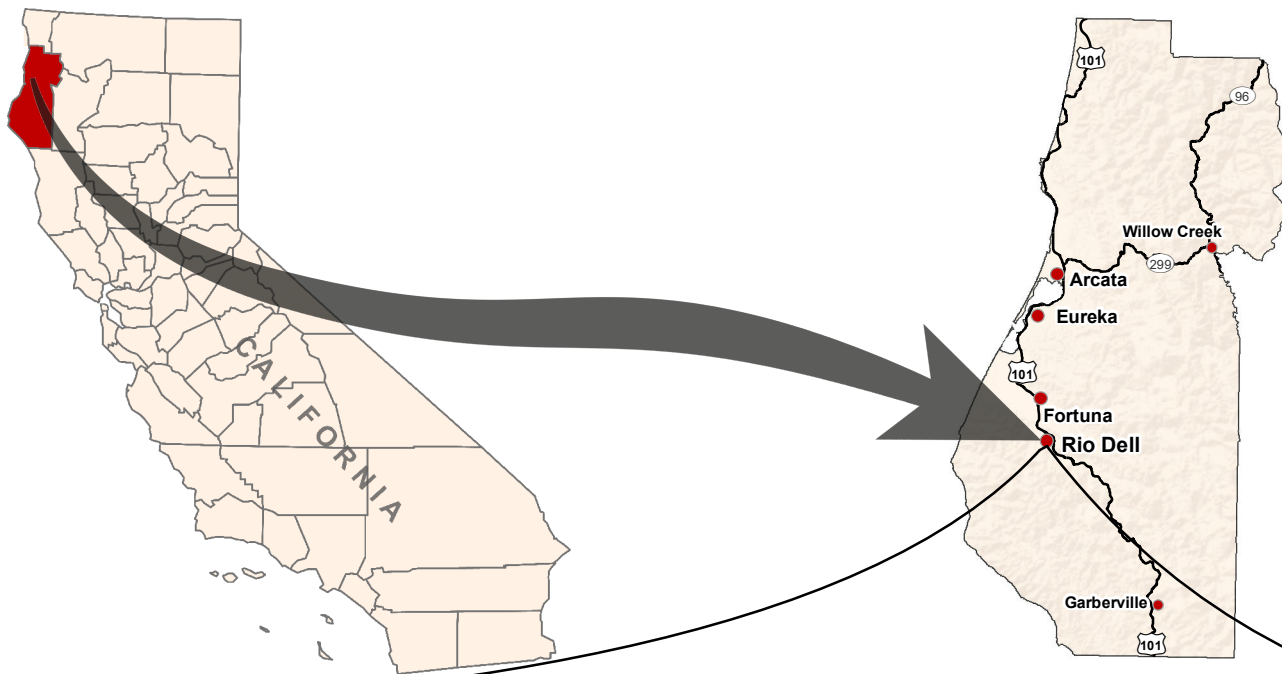
5.2 GHD

Andrea Hilton, Environmental Planner
Brian Heaton, Environmental Planner
Chyrss Meier, Environmental Planner
Misha Schwarz, Senior Scientist

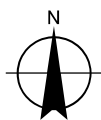
5.3 Sub-consultants

DZC Archaeology & Cultural Resource Management

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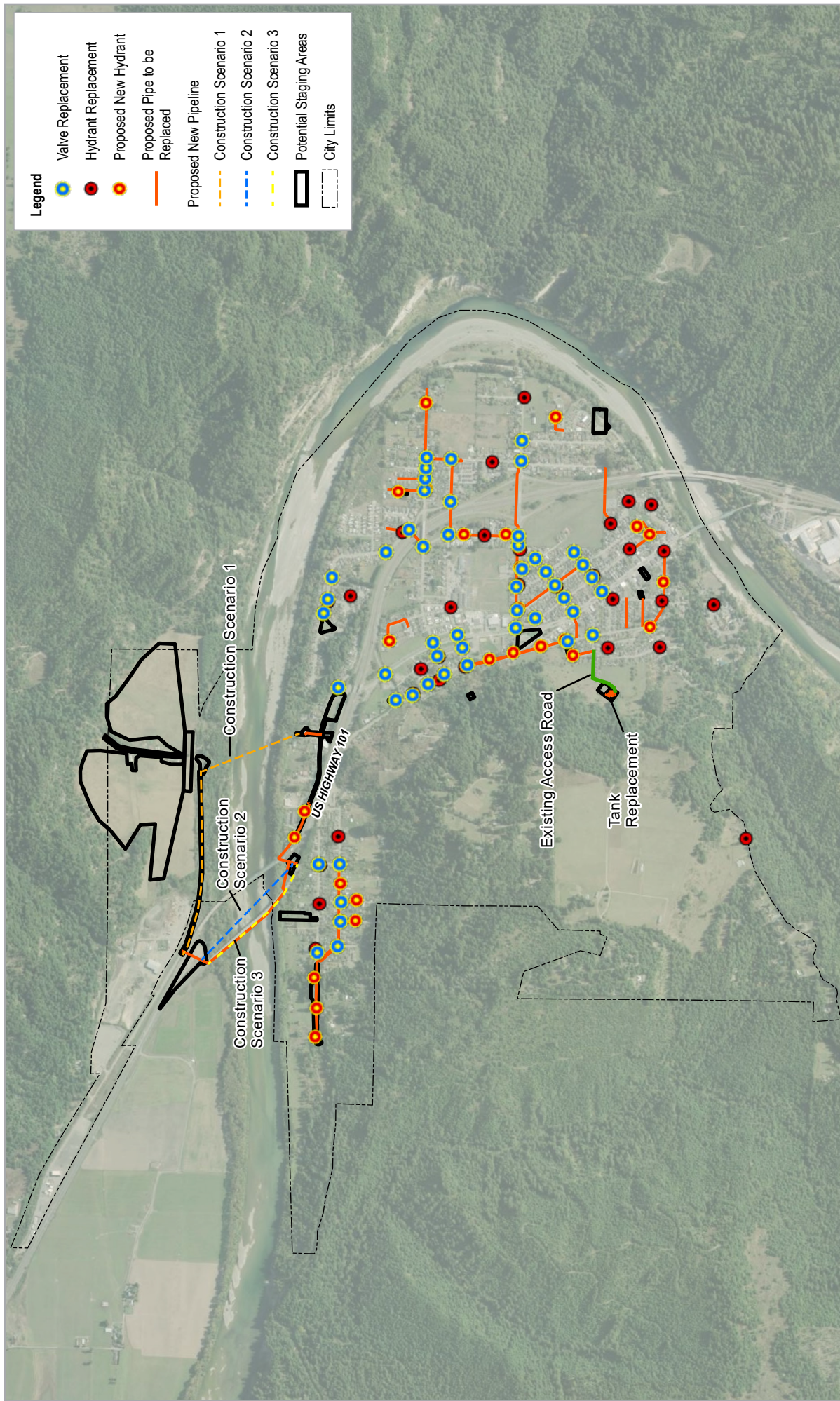


City of Rio Dell
Preliminary Engineering and
Alternatives Analysis Report

Project No. 11121530
Revision No. -
Date 2/17/2020

Project Location Map

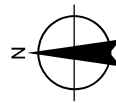
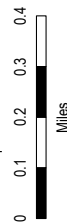
Figure 1



Legend

- Valve Replacement
- Hydrant Replacement
- Proposed New Hydrant
- Proposed Pipe to be Replaced
- Proposed New Pipeline
- Construction Scenario 1
- Construction Scenario 2
- Construction Scenario 3
- Potential Staging Areas
- City Limits

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Map Projection: Lambert Conformal Conic
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City of Rio Dell
Water Infrastructure Improvement

Project No. 11121530
Revision No. -
Date 02/17/2020

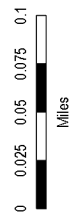
Project Overview

FIGURE 2

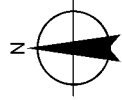
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City of Rio Dell
Water Infrastructure Improvement

Project No. 11121530
Revision No. -
Date 02/17/2020

Eel River Crossing Alternatives

FIGURE 3

Appendices

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Appendix A

Air Quality Modeling Results

Rio Dell Drinking Water Project - Construction - North Coast Air Basin, Annual

Rio Dell Drinking Water Project - Construction

North Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.19	User Defined Unit	1.19	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	93
Climate Zone	1			Operational Year	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	641.35	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction only run

Land Use - User defined as municipal water system upgrades and improvements; units in acres

Construction Phase - Project specific durations

Off-road Equipment - Project specific equipment

Table Name	Column Name	Default Value	New Value
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tblConstructionPhase	NumDays	10.00	70.00
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tblConstructionPhase	PhaseEndDate	6/16/2022	8/8/2022
tblConstructionPhase	PhaseStartDate	5/28/2022	5/1/2022
tblConstructionPhase	PhaseStartDate	6/3/2022	5/3/2022
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2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1847	1.6539	1.4937	3.3300e-003	7.8273	0.0740	7.9013	0.8535	0.0684	0.9220	0.0000	291.5107	291.5107	0.0876	0.0000	293.7001
Maximum	0.1847	1.6539	1.4937	3.3300e-003	7.8273	0.0740	7.9013	0.8535	0.0684	0.9220	0.0000	291.5107	291.5107	0.0876	0.0000	293.7001

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0000	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2022	8/5/2022	5	70	
2	Grading	Grading	5/1/2022	8/5/2022	5	70	
3	Paving	Paving	5/3/2022	8/8/2022	5	70	
4	Trenching	Trenching	5/1/2022	8/5/2022	5	70	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 26.25****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	2	3.00	81	0.73
Trenching	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Excavators	1	7.00	158	0.38
Trenching	Excavators	1	7.00	158	0.38
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Cement and Mortar Mixers	1	7.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Paving Equipment	1	7.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Demolition	Off-Highway Trucks	1	7.00	402	0.38
Grading	Off-Highway Trucks	1	7.00	402	0.38
Trenching	Off-Highway Trucks	1	7.00	402	0.38
Trenching	Skid Steer Loaders	1	7.00	65	0.37
Grading	Graders	1	6.00	187	0.41

Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	5	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0600	0.5562	0.3935	9.6000e-004		0.0258	0.0258		0.0241	0.0241	0.0000	84.4534	84.4534	0.0235	0.0000	85.0413
Total	0.0600	0.5562	0.3935	9.6000e-004		0.0258	0.0258		0.0241	0.0241	0.0000	84.4534	84.4534	0.0235	0.0000	85.0413

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6700e-003	2.1300e-003	0.0179	3.0000e-005	1.8672	3.0000e-005	1.8672	0.1866	2.0000e-005	0.1866	0.0000	2.4532	2.4532	1.6000e-004	0.0000	2.4571
Total	2.6700e-003	2.1300e-003	0.0179	3.0000e-005	1.8672	3.0000e-005	1.8672	0.1866	2.0000e-005	0.1866	0.0000	2.4532	2.4532	1.6000e-004	0.0000	2.4571

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1720	0.0000	0.1720	0.0884	0.0000	0.0884	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0604	0.5984	0.4113	1.0600e-003		0.0252	0.0252		0.0232	0.0232	0.0000	93.0073	93.0073	0.0301	0.0000	93.7593
Total	0.0604	0.5984	0.4113	1.0600e-003	0.1720	0.0252	0.1972	0.0884	0.0232	0.1116	0.0000	93.0073	93.0073	0.0301	0.0000	93.7593

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1400e-003	1.7000e-003	0.0143	2.0000e-005	1.4937	2.0000e-005	1.4938	0.1493	2.0000e-005	0.1493	0.0000	1.9625	1.9625	1.3000e-004	0.0000	1.9657
Total	2.1400e-003	1.7000e-003	0.0143	2.0000e-005	1.4937	2.0000e-005	1.4938	0.1493	2.0000e-005	0.1493	0.0000	1.9625	1.9625	1.3000e-004	0.0000	1.9657

3.4 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0237	0.2329	0.3013	4.7000e-004		0.0119	0.0119		0.0110	0.0110	0.0000	40.4399	40.4399	0.0128	0.0000	40.7591
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0237	0.2329	0.3013	4.7000e-004		0.0119	0.0119		0.0110	0.0110	0.0000	40.4399	40.4399	0.0128	0.0000	40.7591

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4700e-003	2.7700e-003	0.0233	4.0000e-005	2.4273	3.0000e-005	2.4273	0.2426	3.0000e-005	0.2426	0.0000	3.1891	3.1891	2.1000e-004	0.0000	3.1942
Total	3.4700e-003	2.7700e-003	0.0233	4.0000e-005	2.4273	3.0000e-005	2.4273	0.2426	3.0000e-005	0.2426	0.0000	3.1891	3.1891	2.1000e-004	0.0000	3.1942

3.5 Trenching - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0296	0.2577	0.3141	7.2000e-004		0.0109	0.0109		0.0101	0.0101	0.0000	63.5523	63.5523	0.0206	0.0000	64.0662
Total	0.0296	0.2577	0.3141	7.2000e-004		0.0109	0.0109		0.0101	0.0101	0.0000	63.5523	63.5523	0.0206	0.0000	64.0662

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6700e-003	2.1300e-003	0.0179	3.0000e-005	1.8672	3.0000e-005	1.8672	0.1866	2.0000e-005	0.1866	0.0000	2.4532	2.4532	1.6000e-004	0.0000	2.4571
Total	2.6700e-003	2.1300e-003	0.0179	3.0000e-005	1.8672	3.0000e-005	1.8672	0.1866	2.0000e-005	0.1866	0.0000	2.4532	2.4532	1.6000e-004	0.0000	2.4571

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.524665	0.040497	0.191701	0.124835	0.034547	0.005905	0.015163	0.051494	0.002571	0.001315	0.005227	0.001165	0.000916

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas
Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity
Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	------------	-------------	-------------	-----------

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Appendix B

Biological Resources Report



Biological Resources Report

Rio Dell Water Infrastructure Improvement Project

Prepared for the City of Rio Dell

GHD | 718 Third Street, Eureka, CA, 95511

11121530 | 04 | Biological Resources Report | March 16, 2020



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1. Introduction

The City of Rio Dell (City) is located in Humboldt County, California (**Figure 1, Appendix B**). The City actively manages and evaluates the City's water system to meet capacity and quality requirements, improve operations, and to reduce water losses from the distribution system. The City completed a Capital Improvement Plan in July of 2015 and identified several priority projects to improve the reliability and resiliency of the water system.

1.1 Project History

The current system is comprised of many components of differing ages and conditions. Some components have been in service for more than 50 years. The system has many components that have experienced or are susceptible to failure, some of the operations are labor-intensive, and portions of the system warrants reconfiguration or replacement to meet the needs of the community and modern practices and standards.

An engineering report was completed in May 2019 describing infrastructure in need of improvement. Proposed improvements include:

- Replacement of selected portions of distribution system piping to reduce maintenance issues with leaking pipes,
- Installation of fire hydrants within distribution pipeline improvement areas not currently covered by existing hydrants,
- Replacement of the Douglas Tank Site redwood water storage tank which is currently at the end of its life and is developing leaks,
- Addition of redundant distribution system piping between the Metropolitan Well site and the City's distribution system using horizontal directional drilling (HDD), and
- [not likely] Addition of hydro-pneumatic tanks at the Metropolitan well site.

1.2 Project Location

The City of Rio Dell was incorporated in 1964 and is located in Humboldt County, California, along Highway 101 within the Eel River Valley (Range 1E, Township 1N, Sections 5NW and 6NW, and Range 1E, Township 2N, Section 31SW). The City is approximately 25 miles south of the City of Eureka and approximately 250 miles north of San Francisco. The City of Rio Dell is a residential community and has small commercial and industrial districts. The City is two square miles (1,278 acres) in size and is bordered on the north, east, and south by the Eel River and the south by Dean Creek. The City limits extend to the middle of the Eel River channel. The Scotia Bluffs, which make up the eastern bank of the Eel River across from Rio Dell, and the steep, wooded, hillside slopes on the west side of town are the dominant natural features of the City. **Appendix B, Figure 1** presents a regional location map. Directly across the Eel River to the south is the Town of Scotia.



1.3 Project Objective

The goal of this project is to protect essential services and avoid loss of potable water service to Rio Dell residents and businesses.

2. Description of the Project

This section summarizes the overall configuration and characteristics of the action. Refer to the Project Description for additional information (GHD 2020).

2.1 Definition of the Project Area

The project area is defined as the extent of construction activities associated with engineering design for the Project (**Appendix B, Figure 2**). The project area includes areas of horizontal direction drilling, replacement piping, as well as staging areas, and locations for fire hydrants and the replacement water tank. For a detailed map of site improvements, see **Figure 2, Appendix B**.

2.2 Construction Schedule

Construction would occur over a six month period planned to commence in June 2022. Because most project elements would occur under existing pavement, vegetation clearing would be required only in a few locations. Anticipated daytime work hours are 7:00 a.m. to 7:00 p.m., Monday through Friday with occasional work on Saturdays. Construction on Sunday or legal holidays is not currently anticipated except for emergencies or with prior approval from the City.

2.3 Construction Staging, Activities, and Equipment

Staging areas would be located on exiting road easements and on other City-owned developed properties (e.g. parking lots). Contractors may also use private lots they have access to as part of their construction operations. Staging areas would be used for equipment storage, materials storage, and temporary stockpiling.

Excess soils and construction materials would be stored on-site within previously designated staging areas only. Excess soils may be re-used on-site for backfill and finished grading. Excess soils would not remain stockpiled on-site once the project is complete. The contractor may haul additional excess soils off-site for use at other permitted sites.

Equipment required for construction would include: tracked excavators, backhoes, graders, bulldozers, dump trucks, drilling equipment, drill mud recycling equipment, pipe fusing equipment, cranes, water trucks, bobcats, and pick-up trucks. It is not anticipated that any temporary utility extensions, such as electric power or water, will be required for construction.

All construction activities will be accompanied by both temporary and permanent erosion and sediment control BMPs. Project construction would include the following activities:

- Directional drilling – To install the new subsurface transmission system piping.
- Clearing and grubbing – To clear low brush.



- Excavation – To create entrance and exit pits for HDD, and to prepare subgrade for Douglas Tank #1 foundation.
- Trenching – To install the new pipe in Northwestern Avenue and replace/install water pipes, valve clusters, and hydrants.
- Installation of new distribution piping, valves, and hydrants.
- Placement of aggregate base – For the Douglas Tank #1 access road and trenched pipeline installations.
- Douglas Tank #1 demolition – Demolition of existing tank and removal from site.
- Tank Erection – Installation of 500,000-gallon bolted steel water tank, yard piping, and appurtenances.

2.4 Traffic and Access Control

Traffic controls would be required in accordance with the City and Caltrans standards, and the contractor would be required to comply with all conditions of the encroachment permits. The development and implementation of traffic controls would include, but not necessarily be limited to: traffic controls, signs, and flaggers conforming to the current California Manual of Uniform Traffic Control Devices. Alternative 3 would likely require a temporary lane closure of US101 to enable safe installation of the new water pipe, in coordination with Caltrans.

2.5 Groundwater Dewatering

If needed, temporary groundwater dewatering will be conducted to provide a dry work area. Dewatering will involve pumping water out of a trench or excavation. Groundwater will typically be pumped to Baker tanks (or other similar type of settling tank) or into a dewatering bag. Following the settling process provided by a tank or filter, the water will be used for dust control and compaction. Discharge water from Baker tanks would not be discharged into wetlands or any water bodies.

2.6 Wetlands Impacts

If project activities are determined to impact wetlands or other sensitive habitats requiring mitigation, a Habitat Mitigation and Monitoring Plan (HMMP) will be prepared and implemented. Implementation of the HMMP will require establishment of new wetland or other designated sensitive habitats at a ratio of no less than one to one following construction. HMMP implementation, should it be deemed necessary, may require shallow excavation and/or grading prior to planting. A monitoring period up to five years would also be a likely requirement to demonstrate success of establishment and/or planting areas.

2.7 Site Restoration and Closure

Following construction, the contractor will demobilize and remove equipment, supplies, and construction wastes. The disturbed areas along the project alignment will be restored to pre-



construction conditions or stabilized with a combination of grass seed (broadcast or hydroseed), straw mulch, rolled erosion control fabric, and other plantings/vegetation.

2.8 Maintenance and Operation

Once construction is complete, general operation and maintenance activities associated with the proposed project would include annual inspections, testing, exercising and servicing of valves, and repairs of piping and equipment, and other similar operational requirements. The access road to the Douglas Tank site would also be maintained. Maintenance and operational activities associated with fire hydrants include vegetation management (mowing) and valve testing. Water tank operations and maintenance includes monthly checks, repainting of the tank approximately every 20 years, and general maintenance and upkeep of grounds (e.g., weed removal, testing the generator).

Operation and maintenance of the project would not generate additional vehicle trips, above existing conditions. The City of Rio Dell would be responsible for all maintenance.

Operationally, no changes would be made to the pumping system required to transport water from both the Metropolitan Wells site and the Water Treatment Plant to Storage. For Alternative 1 and Alternative 2, the existing pumps would be used for pumping, and would continue to be connected to the electrical grid and would not result in an increase in operational emissions.

Project operations would not require the use of any new chemicals not presently in use by the existing municipal water system.

3. Regulatory Background

This project is subject to the requirements of the California Environmental Quality Act (CEQA), a suite of federal environmental acts, and rules. Following is an overview of agencies that have potential oversight of the proposed project related to biological resources as well as relevant laws. The regulatory setting is divided into sections on federal, state, and local jurisdiction.

3.1 Federal Jurisdiction

3.1.1 Endangered Species Act (ESA)

The ESA of 1973 (16 USC 1531 et seq.) establishes a national policy that all federal departments and agencies provide for the conservation of threatened and endangered species and their ecosystems. The Secretary of the Interior and the Secretary of Commerce are designated in the ESA as responsible for: (1) maintaining a list of species likely to become endangered within the foreseeable future throughout all or a significant portion of its range (threatened) and that are currently in danger of extinction throughout all or a significant portion of its range (endangered); (2) carrying out programs for the conservation of these species; and (3) rendering opinions regarding the impact of proposed federal actions on listed species. The ESA also outlines what constitutes unlawful taking, importation, sale, and possession of listed species and specifies civil and criminal penalties for unlawful activities.



Pursuant to the requirements of the ESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed or proposed species may be present in the project region, and whether the proposed project would result in a “take” of such species. The ESA prohibits “take” of a single threatened and endangered species except under certain circumstances and only with authorization from the USFWS or the National Oceanic and Atmospheric Administration (NOAA) Fisheries through a permit under Section 7 (for federal entities or federal actions) or 10(a) (for non-federal entities) of the Act. “Take” under the ESA includes activities such as “harass, harm, pursue, hunt shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” USFWS regulations define harm to include “significant habitat modification or degradation.” On June 29, 1995, a U.S. Supreme Court ruling further defined harm to include habitat modification “...where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.”

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 for such species (16 USC 1536[3][4]). If it is determined that a project may result in the “take” of a federally-listed species, a permit would be required under Section 7 or Section 10 of the ESA.

Critical Habitat is defined by the ESA as a specific geographic area containing features essential for the conservation of an endangered or threatened species. Under Section 7 of the ESA, critical habitat should be evaluated if designated for federally listed species that may be present in the project Action Area (federally designated term for a “Project Study Boundary”).

3.1.2 Clean Water Act (CWA)

The CWA (1977, as amended) establishes the basic structure for regulating discharges of pollutants into waters of the U.S. It gives the U.S. Environmental Protection Agency (EPA) the authority to implement pollution control programs, including setting wastewater standards for industry and water quality standards for contaminants in surface waters. The CWA makes it unlawful for any person to discharge any pollutant from a point source into navigable waters, without a permit under its provisions.

Discharge of fill material into “waters of the U.S.,” including wetlands, is regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the CWA (33 USC 1251-1376). USACE regulations implementing Section 404 define “waters of the U.S.” to include intrastate waters (such as, lakes, rivers, streams, wetlands, and natural ponds) that the use, degradation, or destruction of could affect interstate or foreign commerce. Wetlands are defined for regulatory purposes as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3; 40 CFR 230.3). The placement of structures in “navigable waters of the U.S.” is also regulated by the USACE under Section 10 of the Federal Rivers and Harbors Act (33 USC 401 et seq.). Projects are approved by USACE under standard (i.e., individual) or general (i.e., nationwide, programmatic, or regional) permits. The type of permit is determined by the USACE and based on project parameters.



The USACE and the EPA announced the release of the Clean Water Rule on May 27, 2015 (80 FR 124: 37054-37127). The Rule is intended to ensure waters protected under the CWA are more precisely defined, more predictable, easier to understand, and consistent with the latest science. The intent is to: 1) clearly define and protect tributaries that impact the quality of downstream waters; 2) provide certainty in how far safeguards extend to nearby waters; 3) protect unique regional waters; 4) focus on streams instead of ditches; 5) maintain the status of waters associated with infrastructure (i.e., sewer systems); and 6) reduce the need for case specific analysis of all waters. The U.S. Court of Appeals for the Sixth Circuit stayed implementation of the Clean Water Rule pending further action of the court in October 2015. In response, the USACE and EPA resumed case-by-case analysis of waters of the U.S. determinations. Implementation of the Clean Water Rule was pending litigation prior to February 2017. An Executive Order (Restoring the Rule of Law, Federalism, and Economic Growth by Reviewing the “Waters of the United States” Rule) was signed on February 28, 2017, directing the USACE and EPA to review The Rule and publish for notice and comment a proposed rule rescinding or revising The Rule. The USACE and EPA subsequently published a Notice of Intention to Review and Rescind or Revise the Clean Water Rule in the Federal Register on March 6, 2017. The definition of “navigable waters” under the CWA along with The Rule is currently under review per the Executive Order.

The Fish and Wildlife Coordination Act requires consultation with the USFWS, NOAA Fisheries, and responsible state wildlife agency for any federally authorized action to control or modify surface waters. Therefore, any project proposed or permitted by the USACE under the CWA Section 404 must also be reviewed by the federal wildlife agencies and California Department of Fish and Wildlife (CDFW).

Section 401 of the CWA requires any applicant for a federal license or permit, which involves an activity that may result in a discharge of a pollutant into waters of the U.S., obtain a certification that the discharge will comply with applicable effluent limitations and water quality standards. CWA 401 certifications are issued by Regional Water Quality Control Boards (RWQCBs) under the California Environmental Protection Agency.

3.1.3 Executive Order 11990

Executive Order 11990 (1977) furthers the protection of wetlands under NEPA through avoidance of long and short-term adverse impacts associated with the destruction or modification of wetlands where practicable. The order requires all federal agencies managing federal lands, sponsoring federal projects, or funding state or local projects to assess the effects of their actions on wetlands. The agencies are required to follow avoidance, mitigation, and preservation procedures. The Presidential Wetland Policy of 1993 and subsequent reaffirmation of the policy in 1995 supports effective protection and restoration of wetlands, while advocating for increased fairness of federal regulatory programs.

3.1.4 Migratory Bird Treaty Act (MBTA)

The MBTA of 1918 (16 USC 703-711) as amended established federal responsibilities for the protection of nearly all species of birds, their eggs, and nests. A migratory bird is defined as any species or family of birds that live, reproduce, or migrate within or across international borders at some point during their annual life cycle. The MBTA prohibits the take, possession, buying, selling,



purchasing, or bartering of any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). Only exotic species such as Rock Pigeons (*Columba livia*), House Sparrows (*Passer domesticus*), and European Starlings (*Sturnus vulgaris*) are exempt from protection.

In 2001, President Clinton defined “take” in Executive Order 13186 to include both “intentional” and “unintentional.” This was also the interpretation of the Act put forth in an earlier Solicitor’s Opinion (M-37041). However, in December of 2017, the Department of the Interior’s (DOI) Office of Solicitor argued via Opinion M-37050 that incidental take was not prohibited under the Migratory Bird Treaty Act (this interpretation of the Act was also upheld in 2015 by the 5th Circuit in *United States v. CITGO Petroleum Corp.*). Opinion M-37050 was the subject of a lawsuit between eight U.S. states and the U.S. DOI.

In January of 2020, representative Alan Lowenthal and 18 bipartisan sponsors introduced the federal Migratory Bird Protection Act (H.R. 5552). The purpose of this bill was to “[a]mend the Migratory Bird Treaty Act to affirm that the Migratory Bird Treaty Act’s prohibition on the unauthorized take or killing of migratory birds includes incidental take by commercial activities, and to direct the United States Fish and Wildlife Service to regulate such incidental take, and for other purposes” (H.R. 5552). As of March 2020, this bill has yet to pass the House (Congress.gov 2020).

In February of 2020, the USFWS proposed a new rule to define the scope of the MBTA (85 FR 5915). The rule specifies that “the Service proposes to adopt a regulation defining the scope of the MBTA’s prohibitions to reach only actions directed at migratory birds, their nests, or their eggs” and essentially codifies M-37050 (85 FR 5915). Public comment on this new proposed rule closed on March 19, 2020.

As of March 2020, the interpretation of “take” in the rule by the DOI did not include “incidental take.” This interpretation is currently the subject of litigation.

3.2 State Jurisdiction

3.2.1 California Environmental Quality Act (CEQA)

CEQA applies to certain activities of state and local public agencies. A public agency must comply with CEQA when it undertakes an activity defined by CEQA as a “project.” A project is an activity undertaken by a public agency or a private activity which must receive some discretionary approval. The proposed project is a project under CEQA; therefore, CEQA compliance is required. Under CEQA, a variety of technical studies including biological, cultural, traffic, and air quality studies as well as research and professional knowledge are considered to determine whether the project may have an “adverse effect” on the environment. Lead agencies are charged with evaluating the best available data when determining what specifically should be considered an “adverse effect” to the environment.

3.2.2 Porter-Cologne Water Quality Act

The Porter-Cologne Act provides for statewide coordination of water quality regulations by establishing the California State Water Resources Control Board. The State Board is the statewide authority that oversees nine separate RWQCBs that collectively oversee water quality at regional



and local levels. California RWQCBs issue CWA Section 401 Water Quality Certifications for possible pollutant discharges into waters of the U.S. or state. On April 2, 2019 the California State Water Resources Control Board adopted new definitions and procedures for discharges of dredged or fill material to Waters of the State.

3.2.3 California Endangered Species Act (CESA)

The CESA includes provisions for the protection and management of species listed by the State of California as endangered, threatened, or designated as candidates for such listing (California Fish and Game Code (FGC) Sections 2050 through 2085). The CESA generally parallels the main provisions of the ESA and is administered by the CDFW, who maintains a list of state threatened and endangered species as well as candidate species. The CESA prohibits the “take” of any species listed as threatened or endangered unless authorized by the CDFW in the form of an Incidental Take Permit. Under FGC, “take” is defined as to “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.”

3.2.4 Other State Special Status Species and Communities

The CDFW maintains a list of species of special concern. These are broadly defined as species that are of concern to the CDFW because of population declines and restricted distributions, and/or they are associated with habitats that are declining in California. The criteria used to define special status species are described by the CDFW. Impacts to special status plants, animals, and Sensitive Natural Communities may be considered significant under CEQA.

State Species of Special Concern include those plants and wildlife species that have not been formally listed, yet are proposed or may qualify as endangered or threatened. In addition, USFWS Birds of Conservation Concern, and CDFW special status invertebrates are considered special status species by CDFW.

The CDFW administers the Native Plant Protection Act (Sections 1900–1913 of the FGC). These sections allow the California Fish and Game Commission to designate endangered and rare plant species and to notify landowners of the presence of such species. Plant species on California Native Plant Society’s (CNPS) California Rare Plant Ranking (CRPR) Lists 1 and 2 are considered eligible for state listing as Endangered or Threatened pursuant to the California Fish and Game Code and CDFW has oversight of these special status plant species as a trustee agency. As part of the CEQA process, such species should be considered as they meet the definition of Threatened or Endangered under Sections 2062 and 2067 of the California Fish and Game Code. CRPR List 3 and 4 plants may warrant protection under CEQA Guidelines 15380 only in special circumstances. CDFW publishes and periodically updates lists of special status species which include, for the most part, the above categories. Additionally, there are 64 plant species designated as “rare” which is a special designation created before plants were rolled into CESA in the 1980s. The CESA and the Native Plant Protection Act (NPPA) required a project to have a “Scientific, Educational, or Management Permit” from CDFW for activities that would result in “take,” possession, import, or export of state-listed plant species including research, seed banking, reintroduction efforts, habitat restoration, and other activities relating to any plant designated SE (State endangered), ST (State threatened), SR (State rare), or SC (State candidate for listing).



3.2.5 Sensitive Natural Communities

CDFW provides oversight of habitats (i.e. plant communities) listed as Sensitive in the California Natural Diversity Database (CNDDDB) and on the California Sensitive Natural Communities List, based on global and state rarity rankings. The natural communities are broken down to alliance and association levels for vegetation types affiliated with ecological sections in California. The alliances on the California Sensitive Natural Communities List coincide with A Manual of California Vegetation (Sawyer et al. 2009). CDFW considers alliances and associations with a state rank of S1 to S3 to be Sensitive. The application of ranking for determination of Sensitive Communities is summarized as follows in Table 3.2 (NatureServe 2019):

Table 3.2 NatureServe Conservation Status Ranks

Name	Calculated Status Rank	Status Description
Score \leq 1.5	G1, N1, S1	Critically Imperiled
$1.5 \leq$ Score \leq 2.5	G2, N2, S2	Imperiled
$2.5 \leq$ Score \leq 3.5	G3, N3, S3	Vulnerable
$3.5 \leq$ Score \leq 4.5	G4, N4, S4	Apparently Secure
Score $>$ 4.5	G5, N5, S5	Secure

3.2.6 California Fish and Game Code (FGC)

Lake or Streambed Alteration Agreement

Streams, lakes, and riparian vegetation that serve as habitat for fish and other wildlife species are subject to jurisdiction by the CDFW under Sections 1600-1616 of the FGC. Any activity that will do one or more of the following: 1) substantially obstruct or divert the natural flow of a river, stream, or lake; 2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or 3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake; generally require a 1602 Lake and Streambed Alteration Agreement (LSAA). The term “stream,” which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as follows: “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. Riparian is defined as, “on, or pertaining to, the banks of a stream;” therefore, riparian vegetation is defined as, “vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself.” Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from the CDFW.

Birds of Prey and Native Nesting Birds

Section 3503 of the FGC prohibits the take, possession, or needless destruction of the nest or eggs of any bird. Subsection 3503.5 specifically prohibits the take, possession, or destruction of any birds in the orders *Falconiformes* (hawks and eagles) or *Strigiformes* (owls) and their eggs or nests.



These provisions, along with the federal MBTA, essentially serve to protect nesting native birds. Non-native species, including the European Starling, Rock Dove, and House Sparrow, are not afforded protection under the MBTA or FGC.

Fully Protected Species

The CDFW enforces the FGC, which provides protection for “fully protected birds” (Section 3511), “fully protected mammals” (Section 4700), “fully protected reptiles and amphibians” (Section 5050), and “fully protected fish” (Section 5515). As fully protected species, the CDFW cannot authorize any project or action that would result in “take” of these species even with an incidental take permit.

Migratory Bird Protection Act

The California Migratory Bird Protection Act (MBPA) was introduced in the California State Assembly 2019 by Assembly Member Ash Kalra and co-sponsored by the National Audubon Society. The text of the Act specifies that it is unlawful to take or possess any migratory nongame bird as designated in the federal Migratory Bird Treaty Act (16 U.S.C. Sec. 703 et seq., seq.) before January 1, 2017. This upholds the interpretation of the MBTA under Clinton’s EO 13166, where “take” was defined as both “unintentional as well as intentional” (FGC 5315). Governor Gavin Newsom signed the Act into law on September 27, 2019. The MBPA effectively closes the federal MBTA loophole on incidental take of migratory birds in California.

3.3 Local Jurisdiction

3.3.1 Humboldt County Grading Permit

The Project is anticipated to include earthwork and grading of earthen material, therefore a grading permit from Humboldt County will be required. The City will work with Humboldt County to provide the necessary information to receive a grading permit, including cut and fill areas, and an erosion control plan.

4. Methods

4.1 Project Study Boundary

Investigations were conducted at different spatial scales for wildlife than for reconnaissance level wetland mapping and natural communities mapping. For wildlife, the project was evaluated at the level of the Project Study Boundary (PSB). For the purposes of this BRR, the PSB includes the project area as defined in **Section 2.1 (Appendix B, Figure 2)** and a buffer of 0.25 miles. This large buffer around the project location is designed to account for any auditory and visual disturbance to wildlife as well as other potential impacts such as increased run-off/sedimentation from construction and increased dust. The project area where reconnaissance level wetland and Sensitive Natural Communities mapping occurred is defined in detail below.



4.2 Preliminary Investigations

4.2.1 Database Searches (IPaC, CNDDDB, CNPS)

Prior to field surveys, a database search of the CNDDDB (CDFW 2020), USFWS IPaC (Information for Planning and Conservation), NOAA Fisheries West Coast Region California Species List Tools, and CNPS (California Native Plant Society) Inventory of Rare and Endangered Vascular Plants was conducted by GHD on October 30, 2019 and updated on March 10, 2020 for the Rio Dell Water Infrastructure Improvement Project. The CNDDDB database and CNPS Inventory were queried for all CRPR List species including CRPR 3 and 4 plant species, for informational purposes while conducting field surveys, although CRPR 3 and 4 plant species are not presented on the database table included in **Appendix A**. In addition, citizen science databases such as eBird and iNaturalist were reviewed for additional local wildlife information. The search encompassed nine USGS quadrangles (quads) centered on the Project quad (Scotia) and the surrounding eight quads (Fortuna, Hydesville, Owl Creek, Taylor Peak, Redcrest, Buckeye Mtn., Bull Creek, and Weott).

Based on these database results, habitat assessments made during the reconnaissance level wetland and Sensitive Natural Community mapping survey, results from the avian survey, and personal knowledge regarding the habitat and conditions surrounding the project, a scoping table was compiled (**Appendix A**). This table summarizes special status state or federal plant and wildlife species that could be present in the project area or PSB, respectively. The table also presents information such as the likelihood of each species or community to occur in the project area or PSB. **Figure 3 in Appendix B** shows all special status species tracked by CNDDDB that are known to occur within a five mile radius of the project area.

4.2.2 National Wetlands Inventory

A search of the U.S. Fish and Wildlife Service National Wetlands Inventory was conducted on November 21, 2019 for the immediate project vicinity. **Appendix B, Figure 4** shows the National Wetlands Inventory data for the project location. The project is surrounded on the north, east, and southeast sides by the Eel River (Riverine) and the adjacent palustrine emergent wetland occurring along the Eel River.

4.3 Field Surveys

4.3.1 Project Components and Methodology for Wetland Reconnaissance, Sensitive Natural Communities, and Special Status Plant Habitat Assessment

A reconnaissance level wetland assessment of potential three-parameter wetlands (having wetland-type vegetation, hydric soils, and wetland hydrology) as defined and regulated by the U.S. Army Corps of Engineers occurred within the project area over four days on February 18th, 19th, and 26th, and on March 2, 2020. Sensitive Natural Communities occurring within the project area were also identified and the project area was evaluated for potential habitat for special status plant species.

The project area consisted of project components, linear project components, and other identified project locations. Each of these groups are defined further. Project components included hydrants



to be replaced, locations of proposed new hydrants, and locations of valve replacements. A radius of at least ten feet was assessed around individual project components and any potential wetlands within eyeshot were identified on field maps. Areas where new pipe is proposed, and areas where pipe is proposed to be replaced were considered linear project components. These areas were surveyed from the roadway, and any potential wetlands along the roadsides were identified on field maps. Additional project locations that were surveyed included potential staging areas, including the potential staging area within the Rio Dell wastewater treatment facility (**Figure I6**), the City of Rio Dell water tank location off of Douglas Street (**Figure J4**) and the potential inlet/outlet location for the proposed new pipe on the south side of the Eel River (**Figure E4**). The two areas within the median of highway 101 shown in **Figures C1** and **D2** were also surveyed.

Not all potential project locations could be surveyed due to a lack of permission from private property owners. Areas that were excluded from the reconnaissance wetland survey and Sensitive Natural Community mapping included: the Painter Street tank location (**Figure G4**), the potential staging area along Eeloa Avenue (**Figure E4**), the proposed new pipe inlet/outlet location on the north side of the Eel River (**Figure C3**) and the private property locations associated with pipe installation shown on **Figures (A2, A3, B2, B3, C2, and C3)**.

The reconnaissance level wetland assessment is not a formal wetland delineation and it was primarily limited to the identification of wetland type vegetation and any hydrology indicators that could be observed without digging test pits nor completing wetland data sheets. Hydrology indicators observed generally included ponded water, saturated soil, and/or geomorphic position. As the survey often occurred from the street, and private property permission had not been obtained on adjacent parcels, observations were limited to what could be seen from the road edges. No test pits were dug to see if hydric soils occur. Many, but not all of the "Probable Wetlands" that were mapped occurred in roadside ditch habitat. Some "Probable Wetlands" were identified that did not occur or were not restricted to ditch habitat. It should be noted that the boundaries of these wetlands are unknown, as they were often only identified from the road edge. Probable wetlands were identified within a riparian area shown on **Figure E1** for example, and the outer boundary of these wetlands were symbolized with arrows to express the uncertainty of the boundaries. The boundaries of reconnaissance level wetlands were drawn onto field maps with aerial imagery and were later digitized by GHD into ArcGIS.

The extremely dry conditions of February 2020 complicated the identification of wetlands. Field work occurred during an exceptionally long winter dry spell. According to data from the National Weather Service (NWS) automated rain gage in Eureka (Eureka WFO (EKA01)), during February, Eureka received only 0.6 inches of rain, which is more than five inches less than the historical average amount of rainfall in February (5.63 inches) (NWS 2020). According to the NWS, Eureka has received only 19.1 inches of rain as of March 9, since the beginning of the 2020 water year on October 1, 2019, compared to a normal value of 29.8 inches (NWS 2020). This is 64% of the mean normal rainfall to date within the water year (NWS 2020).

To determine the presence of wetland type vegetation, the standard reference for plant wetlands indicators: *State of California 2016 Wetland Plant List* (Lichvar et al. 2016) was utilized. Plants were assessed based on the probability that they would be found in wetlands (USACE 1987), ranging from Obligate (almost always in wetlands) [OBL], Facultative/wet (67% to 99% in wetlands) [FACW], Facultative (34% to 66% in wetlands) [FAC], Facultative/up (1% to 33% in wetlands)



[FACU], or Uplands (less than 1% in wetlands) [UP]. Plants not listed in this manual are considered to be in the upland category (Lichvar et al. 2016).

Two categories were used to distinguish the potential wetlands that were observed within the project area. Wetlands that were clearly dominated by wetland plant species (generally FACW and OBL), and/or that had geomorphic position indicative of a wetland feature were generally identified as "Probable Wetlands." Some potential wetland areas were considered to be marginal for various reasons, and these were mapped as "Possible Wetlands." Each of the "Possible Wetlands" is described in **Section 5.2** along with the reasons for the distinction.

Per Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities by the California Natural Resource Agency (CDFW 2018), Sensitive Natural Communities were identified following the classification system described in *A Manual of California Vegetation* (Sawyer et al. 2009). Vegetation communities were identified to the alliance level. The boundaries of any Sensitive Natural Communities occurring within project locations were drawn onto field maps with aerial imagery and were later digitized by GHD into ArcGIS. The natural communities identified within the project area were checked against CDFW's most up to date California Natural Communities List dated November 8, 2019 (CDFW 2019a). As the survey occurred outside of the floristic season (the primary flowering and fruiting period for most plant species), only a habitat assessment was made to evaluate the likelihood of available habitat for special status plant species.

4.3.2 Methods – Wildlife Survey

A reconnaissance-level survey was conducted to assess the potential for special status terrestrial wildlife species and wildlife habitat at the project site. The wildlife species evaluations were not protocol level and were intended to document known sensitive species presence and identify additional potential species and habitat that could be present at the project site during project implementation as described in GHD's scope of work. The results of these field efforts will provide a basis to avoid, minimize, and/or mitigate potential impacts associated with project activities, guide future management goals and decisions, and inform the necessary environmental documents needed for this project. The results will also provide input for environmental review and permit applications. In some cases, additional pre-construction surveys may be recommended prior to ground disturbance. Emphasis of the non-protocol site surveys was on amphibians, reptiles, and birds, with a lesser focus on mammals.

The survey was conducted by Elizabeth Meisman (GHD Wildlife Biologist) on January 17, 2020. The survey area included the project area and accessible areas within 500 feet of the project's disturbance area. To the degree feasible, inaccessible areas within 500 feet of the project's disturbance area (i.e. private property) were surveyed with binoculars. Weather on the survey day was overcast, without any precipitation, high winds, or other conditions that could negatively impact bird or other wildlife activities. The wildlife survey occurred prior to the scheduled start of construction.

The survey methods were intended to identify confirmed or probable wildlife activity. Where the habitat allowed the surveyor to walk wildlife habitat and surrounding vegetation, the survey included a physical search of the area. This included inspecting the ground, shrubs, and trees for the



presence of nest/den structures (existing nests from the previous breeding season and possible wildlife nest/den cavities). Additionally, the bark of vegetation and the ground layer under vegetation were inspected for evidence of wildlife species, such as feathers, pellets, scat, or whitewash. Where the habitat was dense or otherwise impenetrable/inaccessible, observations were made from fixed locations. The foliage was viewed with binoculars and behavioral observations of adult birds were made to infer the locations of nests. A list of all wildlife species heard or observed on site was completed after the survey (**Section 5.3.1**).

5. Results

5.1 Summary of General Biological Resources

The City is located on the banks of the lower Eel River in Humboldt County. The elevation of Rio Dell is approximately 160 feet. The climate is characterized by high rainfall and summer fog supporting mesic north coast coniferous forest which surrounds the project area, outside of the riparian corridor of the Eel River. Most distribution system segments marked for replacement are located in existing roadways.

Much of the Rio Dell project vicinity is residential. There are limited areas of nesting habitat available for birds in residential yards, depending on the types of plants present. Vegetation occurring within the project area is discussed in **Section 5.2.2** (Natural Communities Results).

There is substantial coniferous forest habitat surrounding the City on the western side which may serve as nesting and foraging habitat for various wildlife taxa including birds, mammals and amphibians. The adjacent Eel River provides foraging and nesting habitat for a number of bird species as well as other wildlife given the availability of fish, invertebrates in the water and mud, and flying insects associated with this habitat.

The PSB may serve as nesting and foraging habitat for many common avian species protected under the Migratory Bird Treaty Act. In addition, several California state special status avian, bat, and amphibian species have moderate to high potential to occur in or directly adjacent to the project area or have potential to disperse through the project area. No protocol level wildlife surveys were conducted and assessment is based on database searches, historical records, and a review of the primary literature, and a brief on-site habitat evaluation.

5.2 Wetland Reconnaissance, Sensitive Natural Communities, and Special Status Plant Habitat Assessment

5.2.1 Wetland Reconnaissance

As described above, reconnaissance level wetland mapping consisted of mapping two categories of wetlands, “Probable Wetlands” and “Possible Wetlands”. The category of “Possible Wetland” was generally used for more marginal wetlands that may not possess all three wetland parameters. These areas are described below.



A “Possible Wetland” was mapped in the corner of the project area that is associated with the southern extent of the inlet/outlet area for the proposed new pipe (**Figure E4**). Standing water was present in this “Possible Wetland.” The substrate appeared to be compacted gravel fill with a layer of saturated soil on top of the fill. Wetland vegetation covered approximately 20% of the area and pennyroyal (*Metha pulegium*), a wetland obligate plant species, was the dominant plant species. In order to further evaluate this wetland a soil test pit should be dug to assess whether any redoximorphic features are present.

The southern Highway 101 median (**Figure C1**) contains a long wetland ditch that is designated as a Probable wetland as well three small areas mapped as “Possible Wetlands.” The three small wetland features appear to be more “marginal” than the long wetland ditch feature. The three small wetlands on the northeastern side of the project area all occur in a substrate of engineered fill material that appears to be highly altered. Wetland vegetation was present, but it is unknown if these areas are three parameter wetlands.

Wetland vegetation and some ponded water was observed around the water tank at Douglas Street (**Figure J4**). The ponded water is coming from the leaking water tank which has created the conditions for the wetland vegetation to establish. The wetland vegetation transitions to upland vegetation directly outside the influence of the leaking tank. Hydric soils may not be present depending on the duration the tank has been leaking for. The tank is located in engineered fill.

A “Possible Wetland” was noted at the bottom of a slope off of Painter Street near Highway 101 shown on **Figure F5**. This area was observed from the roadway, as private property access had not been granted. A ditch is present at the base of the hillslope on private property. Himalyan blackberry (*Rubus armeniacus*) was abundant in the ditch. Himalyan blackberry is a facultative species meaning it is equally likely to occur in wetlands and uplands. Without trespassing it was impossible to evaluate this wetland further and thus more information would be needed to decide if this is a “Probable Wetland” location.

The potential staging area shown on **Figure E2** contained one “Probable Wetland” and one “Possible Wetland.” The “Probable Wetland” is mentioned here for purposes of clarity in distinguishing these features. The “Probable Wetland” is a gully on the northeast side of the potential staging area. The gully drains into a tributary to the Eel River which is included within the mapped Red Alder Forest Alliance. The “Possible Wetland” is an area that requires more information to make a determination of “Probable Wetland.” More information is needed to determine if the “Possible Wetland” in the potential staging area is a three parameter wetland. The dominant vegetation in this wetland consisted of three facultative species: Himalyan blackberry, buttercup (*Ranunculus repens*) and velvet grass (*Holcus lanatus*). The “Potential Wetland” is located in a slight topographic depression.

5.2.2 Natural Communities

The majority of the project components are located within residential areas of Rio Dell. As discussed previously, several project components are located within roadways. The majority of roadside habitat that was evaluated during this survey consisted of maintained vegetation such as lawns or maintained landscaping. The potential staging area at the Water Treatment Plant is graveled and generally lacks native vegetation. With the exception of some of the wetland areas



within the highway medians, these areas generally consisted of ruderal vegetation on what appears to be engineered fill.

Coast redwood (*Sequoia sempervirens*) forest occurs on the margins of the City of Rio Dell. Per The California Manual of Vegetation, redwoods are dominant in the tree canopy with other native conifer and hardwood species (Sawyer et al. 2009). The *Sequoia sempervirens* forest alliance occurs on the southern side of Northwestern Avenue, at the residential edge of the project shown in **Figures E1** and **E2**, and near the hydrant to be replaced (the southwestern most Project component) shown in **Figure L2**. This forest type extends outside the Project into the surrounding area. The *Sequoia sempervirens* forest alliance is ranked as an S3 community, and is considered Sensitive by CDFW. This forest alliance is only adjacent to project components, and impacts to the *Sequoia sempervirens* forest alliance are not anticipated.

A narrow strip of red alder occurs along a portion of the north side of Northwestern Avenue (**Figure C1**). The alders grow behind roadside ditch which appears to be a ditch dug in uplands, except where wetland type vegetation was observed, beginning near a culvert, and mapped as "Probable Wetlands." This "Probable Wetland" occurred outside of the Project area as shown on **Figure C2** but it is included on the Figures since it was observed during the field survey. The strip of red alder is not being considered a community, and will not be impacted by the project. Upslope of the red alder is pastureland. Abundant invasive pampas grass (*Cortaderia* sp.) occurs along Northwestern Avenue.

One Sensitive Natural Community was mapped within the project area and is shown on **Figure D1**. This community occurs on a property owned by the City that is being consider for use as a staging area. The northern side of the property contains riparian vegetation adjacent to the Eel River. This community is defined by The Manual of California Vegetation as red alder forest or *Alnus rubra* Forest Alliance. Red alder and California bay (*Umbellularia californica*) are dominant in the overstory. Red elderberry (*Sambucus racemosa*) was observed in the understory. The invasive species English ivy, (*Hedera helix*), is prolific in this area where it has grown up the riparian trees and where it has spread over large portions of the ground. The *Alnus rubra* forest alliance is ranked as an S4 vegetation alliance and is not considered Sensitive by CDFW at the alliance level. However, all named associations within this alliance are considered Sensitive and this alliance would likely fit either the red alder/salmon berry (*Rubus spectabilis*) - red elderberry association or the red alder/*Rubus* spp. association. Both of these associations are considered Sensitive by CDFW, and thus this community may be considered Sensitive by CDFW. The vegetation mapped as red alder forest alliance is riparian vegetation which would be regulated by the California Department of Fish and Wildlife through the Lake and Streambed Alteration permit process (California Department of Fish and Game Code Section 1602).

Dense Himalyan blackberry (*Rubus armeniacus*) occurs in patches primarily between the riparian vegetation and the remainder of the staging area (with large patches scattered throughout the mowed area). With the exception of the "Probable Wetland" and the "Possible Wetland" which are described in the Wetland Reconnaissance Results, the remainder of the potential staging area is mowed and composed primarily of disturbance associated species such as tall fescue (*Festuca arundinacea*), velvet grass (*Holcus lanatus*), and wild radish (*Raphanus sativus*). All other potential staging areas were developed or composed of mowed and primarily non-native vegetation.



5.2.3 Special Status Plant Habitat Assessment

A seasonally appropriate survey for special status plant species has not been performed within the project area. Based on an assessment of habitats present within the project area, no Special Status Species are thought to have a moderate or high likelihood of occurring within the project area, see the scoping table in **Appendix B** for detail. Eight special status species have a low likelihood of occurring within the project area. These species are identified in **Appendix B**. A survey for special status species focused only on areas of the project identified to have potential habitat (generally the areas described as having natural vegetation communities as described above, including roadside habitat along Northwestern Avenue) will occur this spring during the prime blooming period for these species. Results of this survey will be reported in an updated version of this report.

5.3 Wildlife Survey and Wildlife Habitat Evaluation Results

5.3.1 Survey Results

All of the avian species detected during the survey were common species and do not have any special federal or state regulatory status. A total of thirteen avian species were observed in or flying over the PSB (Table 5.1). Other incidental wildlife sightings that occurred during the survey are also provided (Table 5.2).

Table 5.1 Avian Species Observed Within the PSB

AOU Code	Common Name	Scientific Name	Special Status
RTHA	Red-tailed Hawk	<i>Buteo jamaicensis</i>	MBTA Protected
BLPH	Black Phoebe	<i>Sayornis nigricans</i>	MBTA Protected
WCSP	White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	MBTA Protected
SOSP	Song Sparrow	<i>Melospiza melodia</i>	MBTA Protected
CBCH	Chestnut-backed Chickadee	<i>Poecile rufescens</i>	MBTA Protected
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	MBTA Protected
NOFL	Northern Flicker	<i>Colaptes auratus</i>	MBTA Protected
CORA	Common Raven	<i>Corvus corax</i>	MBTA Protected
EUST	European Starling	<i>Sturnus vulgaris</i>	Non-native, None
TUVU	Turkey Vulture	<i>Cathartes aura</i>	MBTA Protected
AMRO	American Robin	<i>Turdus migratorius</i>	MBTA Protected
DEJU	Dark-eyed Junco	<i>Junco hyemalis</i>	MBTA Protected
EUCD	Eurasian Collared-Dove	<i>Streptopelia decaocto</i>	Non-native, None

MBTA Protected: Protected under the federal Migratory Bird Treaty Act.

Table 5.2 Other Wildlife Species Observed Within the Project Area

Common Name	Latin Name	Special Status
Domestic/Feral Cat	<i>Felis catus</i>	None



Table 5.2 Other Wildlife Species Observed Within the Project Area

Common Name	Latin Name	Special Status
Douglas Squirrel	<i>Tamiasciurus douglasii</i>	None
Western Gray Squirrel	<i>Sciurus griseus</i>	None

5.3.2 Special Status Wildlife Species

Based on database searches, historical records, and a review of the primary literature, there are two state listed wildlife species that have a moderate potential of occurring in the project area. These species are the Bald Eagle (CESA endangered, *Haliaeetus leucocephalus*), and Bank Swallow (CESA threatened, *Riparia riparia*). All species are known to occur in the project vicinity and may be present within the project area. Impacts to potential habitat for these species is anticipated to be nil with implementation of proposed mitigation measures (See **Section 7.1.1**).

Several federally listed fish species including the Green Sturgeon (ESA threatened, Southern Distinct Population Segment (DPS), *Acipenser medirostris*), Coho Salmon (ESA threatened, Southern Oregon/Northern California Coast Evolutionarily Significant Unit (ESU), *Oncorhynchus kisutch*), Steelhead (ESA threatened, Northern California DPS, *Oncorhynchus mykiss irideus*), and Chinook Salmon (ESA threatened, California Coast ESU, *Oncorhynchus tshawytscha*) are known to occur in the Eel River, which is directly adjacent to the potential mid-point directional drilling inlet/outlet. Additionally, a project component includes tunneling under the river. These species could potentially be impacted by direct (frack-out during drilling, vibration during nearby construction) or indirect (sediment, water quality) project impacts.

The CDFW maintains a list of species and habitats of special concern. These are broadly defined as species that are of concern to the CDFW because of population declines and restricted distributions, and/or they are associated with habitats that are declining in California. State Species of Special Concern (SSC) include those wildlife species that have not been formally listed, yet are proposed or may qualify as endangered or threatened, or are candidates for such listing under the California Endangered Species Act. This affords protection to both listed species and species proposed for listing. In addition, USFWS Birds of Conservation Concern (BCC) and CDFW special-status invertebrates are considered special status species by CDFW.

Based on database searches, historical records, and an overview of the primary literature, twenty-five special status wildlife species have a moderate to high potential of occurring in the PSB.

Mammals

Pallid Bat (Antrozous pallidus), CDFW SSC, Western Bat Working Group High Priority, Moderate Potential

The Pallid Bat is found throughout most of the western U.S., from sea level up to elevations of 6,700 feet. In California, the species is found throughout the state with the exception of the high Sierras. Pallid Bats are commonly associated with habitats such as grassland, scrub, woodland, mixed conifer, and redwood forest (Erickson 2002). They utilize day and night roosts in a variety of habitat types including bridges, mines, barns, rocks pile, rocky outcroppings, dead tree snags, live old-growth tree basal hollows, and buildings (Baker et al. 2008). In general, this species roosts in



places that protect them from temperature extremes. During the day, the species uses these sites to go into a shallow state of inactivity, or torpor. Optimal day roost temperatures are around 86 degrees Fahrenheit (in terms of maintaining low metabolic rates) (Trune and Slobodchikof 1976). Day roosts may include up to 200 individuals (in some cases, roosts may include other bat species) (Hermanson and O'Shea 1983).

Foraging habitats include agricultural areas, riparian woodland, open pine forests, oak savannah, and talus slopes (Williams et al. 2006). Pallid Bats forage close to the ground surface and glean prey from the ground or off exposed vegetation. They rely primarily on passive hearing to locate prey moving on the ground (Fuzessery et al. 1993). Preferred prey items include moths, Jerusalem crickets, beetles, grasshoppers, and scorpions (Hermanson and O'Shea 1983, Erickson 2002).

The species breeds in the fall and winter (October through as late as February in coastal locations). Females store the sperm over the winter and ovulation occurs the following spring. Maternity colonies are typically formed in April and may consist of up to 100 individuals (Erickson 2002). Females typically give birth to twin pups in May or June (Hermanson and O'Shea 1983). The species hibernates during the winter, but may arouse to forage and drink water (Erickson 2002). As a colonial roosting species, Pallid Bats are very sensitive to roost site disturbance. This is particularly true in the case of maternity colonies.

Ground foraging bats, as opposed to the aerial "hawking" species, are typically light averse. While hawking species are drawn to lights due to the increased insects, slower, less agile, ground foragers are found to avoid these areas; perhaps because they are more vulnerable to terrestrial predators that could see them in the light (Rowse et al. 2016).

There are no records of the species from the PSB. The closest known record is from 1924 in Ferndale (Bat Acoustic Monitoring Visualization Tool 2019, CDFW 2019a). It is unknown whether the species may roost on the structures in the PSB and would require surveys to confirm. Requisite roosting and foraging habitat could be present in the PSB. Based on available habitat, the species has a moderate potential to be present, roost, and forage within the PSB.

Townsend's Big-eared Bat (Corynorhinus townsendii), California State Species of Special Concern, Moderate Potential

Townsend's Big-eared Bats are medium-sized bats, distinguished from other co-occurring bat species by their large ears and a two-pronged horseshoe-shaped lump on the muzzle. The species occurs throughout the western U.S. and Canada. In California, the species is found throughout the state with the exception of the high elevations in the Sierra Nevada Mountain Range (CDFW 2016). Townsends' Big-eared Bats are typically associated with coastal Redwood forests, foothill oak woodlands, inland deserts, pinyon-juniper and pine forests, and mixed coniferous-deciduous forests (Erickson et al. 2002, CDFW 2016). The species roosts colonially in a variety of structures including hollow trees, buildings (barns), mines, and lava tubes. Roost site fidelity is high. Maternity colonies (of females) occur between March and June (CDFW 2016). Males roost singly (Erickson et al. 2002). Females give birth to a single pup per year between May and July. The species winters in mixed sex groups in caves and lava tubes. Townsend's Big-eared Bats feed primarily on moths (Erickson et al. 2002, CDFW 2016).



There are no records of the species from the PSB. The closest known record is from 2015 in Humboldt Redwoods State Park (CBI 2019). It is unknown whether the species may roost on the structures in the PSB and would require surveys to confirm. Foraging habitat for the species could be present in the PSB. The species may forage in the project area if outside residential or industrial lights attract suitable prey (moths). Based on available habitat, the species has a moderate potential to be present, roost, and forage within the PSB.

North American Porcupine (Erethizon dorsatum), California State Special Status Species, Moderate Potential

North American Porcupines are primarily nocturnal, but can sometimes be seen during the day. They are approximately 27 inches in length with yellowish quills on the head, rump, and upper surfaces of the tail (Reid 2006). Their range extends across mainland Canada, Alaska, and the western and northeastern United States (Reid 2006). They use a wide variety of habitats, but are most common in montane conifer, Douglas fir, alpine dwarf-shrub (Sweitzer 2013). The nearest population, centered in Tolowa Dunes State Park, is especially known to concentrate in riparian areas. Porcupines are herbivores and feed on a variety of plant materials depending on the season (Appel et al. 2017, SNZ and CBI 2019). They feed on berries, seeds, grasses, leaves, roots and stems during the spring and summer (SNZ and CBI 2019). In contrast, they primarily feed on evergreen needles and tree bark. They often feed heavily on single trees which can result in the death of the tree. This attribute has resulted in historic persecution of the species by proponents of the timber industry. Their populations have been in decline across California. In northwestern California, this may be caused by the regeneration of forests to an age that no longer provides food resources (Appel et al. 2017). They have also been heavily extirpated through the targeted control efforts such as poisoning and shooting (Appel et al. 2017). Based on historical records and available habitat adjacent to the project area in the surrounding forest and along the Eel River, the species has a moderate potential to be present and forage within the PSB.

Western Red Bat (Lasiurus blossevillei), California State Species of Special Concern, Western Bat Working Group High Priority, Moderate Potential

Western Red Bats are primarily found at low elevations in the Central Valley or along the coast of California, with most occurrences west of the Sierras. The species engages in seasonal movements from breeding areas (primarily in the valley) to wintering areas (along the coast) (Pierson et al. 2004). Western Red Bats are closely associated with extensive stands of mature cottonwood and sycamore riparian forest (roosting and foraging habitat). The species roosts singly (except in the case of family groups) in the tree canopy in leaves (Erickson 2002, Harris et al. 2008a). However, in areas where riparian forest has been lost to human development, this species will also roost in orchards (Pierson et al. 2004). Roosts are commonly located along a habitat edge (e.g. adjacent to a creek or field). The breeding season for this species spans the fall through summer. Breeding occurs in the fall, with delayed fertilization until the following spring. Pups are born in the summer and litters may include up to five young (Harris et al. 2008a). Western Red Bats feed on a variety of insect prey including cicadas, crickets, and beetles. They catch prey in flight by capturing insects in their wing or tail membranes (Harris et al. 2008a).

There are no records of the species from the PSB. The closest known record is from 2018 in Humboldt Redwoods State Park (CBI 2019). It is unknown whether the species may roost on the



structures in the PSB and would require surveys to confirm. Requisite roosting and foraging habitat could be present in the PSB. Based on available habitat, the species has a moderate potential to be present, roost, and forage within the PSB.

Hoary Bat (Lasiurus cinereus), Western Bat Working Group Medium Priority, Moderate Potential

The Hoary Bat is a relatively large bat, brown to rufous with a white “frosting” on the tips (SBDWG 2004). They are found throughout North, Central and South America but not usually in great densities (SBDWG 2004, NatureServe 2019). The species is found throughout California with the exception of xeric desert habitats in the southeast. The species breeds in inland forest habitat and winters along the coast and in the southern portion of the state. The species engages in seasonal movements which results in sexual segregation during the warmer months (males are found in greater numbers in western portions of the state while the females are more common in the northeast) Hoary Bats migrate between the summer and winter ranges from September through November. Mating occurs during migration or on the wintering grounds. Females give birth to one to four pups in May through July of the following year (Harris et al. 2008b).

Preferred habitat includes a mosaic of forested habitat for roosting and open/edge habitat for foraging. Hoary Bats are insectivorous and feed primarily on moths (usually over water or over the forest canopy). The species roosts solitarily in dense tree foliage typically near water (species requires water for drinking) (SBDWG 2004, Harris et al. 2008b). Threats to the species include deforestation, wind energy developments (common source of mortality for the species), and reduced prey from over application of pesticides (NatureServe 2019).

There are no records of the species from the PSB. The closest known record is from 2018 in Humboldt Redwoods State Park (CBI 2019). It is unknown whether the species may roost on the structures in the PSB and would require surveys to confirm. Requisite roosting and foraging habitat could be present in the PSB. Based on available habitat, the species has a moderate potential to be present, roost, and forage within the PSB.

Long-eared Myotis (Myotis evotis), Western Bat Working Group Medium Priority, Moderate Potential

The Long-eared Myotis is a medium-sized bat with pale brown colored fur that is lighter on the belly (SBDWG 2004). They are found throughout California and commonly associated with high desert, mixed coniferous/hardwood forests, pinyon-juniper, mesquite scrub, pine/oak woodland, sequoia forests, and residential areas. The species roosts in low densities in trees, rocks, mines, buildings, bridges, and caves. Caves in Northern California serve as winter hibernacula (Erickson et al. 2002).

Females from small maternity colonies during the summer and give birth from one pup from June through July each year (NatureServe 2019). The Long-eared Myotis is a hovering gleaner and feeds on a variety of insects including moths, flies, and beetles by plucking prey from foliage or off the ground (Western Bat Working Group 2017).

There are no records of the species from the PSB. The closest known record is from 2016 in Humboldt Redwoods State Park (CBI 2019). It is unknown whether the species may roost on the structures in the PSB and would require surveys to confirm. Requisite roosting and foraging habitat



could be present in the PSB. Based on available habitat, the species has a moderate potential to be present, roost, and forage within the PSB.

Long-legged Myotis (Myotis volans), Western Bat Working Group High Priority, Moderate Potential

The Long-legged Myotis is a medium-sized bat with dark brown fur. The species is widespread throughout western North America from southern Alaska to Central America. Habitat associations include mountainous coniferous forest, grassland, and riparian woodland. In California, the species is present in the coastal, Cascade, and Sierra ranges and is absent for low elevation deserts and the Central Valley in California (Erickson et al. 2002, Harris et al. 2008c). The species feeds on moths, beetles, flies and termites in open habitat areas or water (Erickson et al. 2002, Harris et al. 2008c).

Daytime roosts include tree roosts (cavities and loose bark), rock crevices, cliffs, and buildings. Night roosts and winter hibernacula includes caves and mines (Erickson et al. 2002, NatureServe 2019). Mating during the fall. Females give birth to 1 pup during the June through July (Erickson et al. 2002, NatureServe 2019). Maternity colonies may include up to 500 individuals (Erickson et al. 2002). Threats to the species include habitat loss and conversion, roost disturbance, and reduced prey from over application of pesticides (Erickson et al. 2002, NatureServe 2019).

There are no records of the species from the PSB. The closest known record is from 2018 in Humboldt Redwoods State Park (CBI 2019). It is unknown whether the species may roost on the structures in the project area and would require surveys to confirm. Requisite roosting and foraging habitat could be present in the PSB. Based on available habitat, the species has a moderate potential to be present, roost, and forage within the PSB.

Yuma myotis (Myotis yumanensis), Western Bat Working Group Low/Medium Priority, Moderate Potential

The Yuma Myotis is a medium-sized bat with light to dark brown fur and a paler underbelly (NorCalBats 2017). The species is widespread and common throughout western North America from southern British Columbia to southern Mexico (NatureServe 2019). In California, the species is widespread throughout the state except for the desert regions. The species is thought to engage in seasonal and possibly elevational migratory movements (Harris et al. 2008d). The species feeds on moth and insects over water and other open habitat types (NatureServe 2019).

Roosts include bridges, swallow nests, rock crevices, tunnels, tree cavities, and buildings (NatureServe 2019). The species mates during the fall. Females form maternity roosts in April and give birth to one pup between May through July (NatureServe 2019). Maternity roots may include several thousand individuals and are most common in mines and caves (Harris et al. 2008d). Threats to the species includes roost disturbance, roosting habitat loss, and reduced prey from over application of pesticides (NatureServe 2019).

There are no records of the species from the PSB. The closest known record is from 2018 in Humboldt Redwoods State Park (CBI 2019). It is unknown whether the species may roost on the structures in the PSB and would require surveys to confirm. Requisite roosting and foraging habitat could be present in the PSB. Based on available habitat, the species has a moderate potential to be present, roost, and forage within the PSB.



Birds

Cooper's Hawk (Accipiter cooperi), California State Special Status Species, Moderate Potential

Cooper's Hawks are year-round residents across most temperate areas in North America. In California, migrants from more northern climes (southern Canada) pass through the state during the fall months (August-November). Some of these northern populations of Cooper's Hawks likely winter in the state. Cooper's Hawks may be found in a variety of forested habitats including deciduous, mixed, or evergreen forests in urban, suburban, or rural areas. Cooper's Hawk populations have increased over the past few decades in urban and suburban areas, likely as a result of readily available prey populations in these habitats (e.g., European Starling and Rock Pigeon flocks). Cooper's Hawks build their nests in any number of tree species including pines, oaks, firs, eucalyptus, etc. Nest site selection is most likely related to dense prey availability in the surrounding area as well as canopy cover and the adjacent habitat structure. Their nests are constructed out of sticks and bark and may be built on top of existing squirrel or other raptor nests. Cooper's Hawks prey on a variety of small bird and mammal species including European Starlings, Mourning Doves (*Zenaida macroura*), Rock Pigeons, Deer Mice (*Peromyscus maniculatus*), squirrels, and hares. (Curtis et al. 2006). Based on available data, the presence of any established breeders would require onsite surveys to confirm. However, considering historical records and available habitat, the species has a moderate potential to be present, breed, and forage in the PSB.

Sharp-shinned Hawk (Accipiter striatus), California State Watch List, Moderate Potential

Sharp-shinned Hawks are year-round residents across most densely forested areas of western and eastern North America. In California, migrants from more northern climes (southern Canada) pass through the state during the fall months (August-November). Some of these northern populations of Sharp-shinned Hawks winter in the state. Sharp-shinned Hawks may be found in a variety of forested habitats including coniferous forests, deciduous forests, woodlots, and transitional/forested edges. They prefer to nest in dense stands of a diversity of tree species. Nests are constructed out of dead twigs and placed against a tree trunk on a horizontal limb. Sharp-shinned Hawks primarily prey on small forest birds and mammals. In more urban/developed areas, Sharp-shinned Hawks hunt at bird feeders. (Bildstein and Meyer 2000). Based on available data, the presence of any established breeders would require onsite surveys to confirm. However, considering historical records and available habitat, the species has a moderate potential to be present, breed, and forage in the PSB.

Great Blue Heron (Ardea herodias), California State Special Status Species, Moderate Potential

Great Blue Herons are year-round residents in the majority of coastal and central California. Notable exceptions include the Sierras and the very southeastern desert regions of the state. Great Blue Herons are extremely adaptable to a variety of habitats including most saltwater and freshwater bodies, agricultural land, swamps, wetlands, as well as commercial and residential areas such as golf courses. Nesting habitat includes trees, bushes, or artificial structures. Nests are typically constructed out of locally available sticks and lined with material such as grass, moss, and reeds. Great Blue Herons are colonial nesters. They are opportunistic foragers, wading in shallow water to feed on fish, amphibians, and invertebrates. They also hunt on shore for reptiles, birds, and small mammals. Additionally, they are known to scavenge carrion. (Vennesland and Butler 2011).



Based on available data, the presence of any established colonies in the PSB is unlikely. However, based on historical records and available habitat along the Eel River, the species has a moderate potential to be present and forage in the PSB.

American Peregrine Falcon (Falco peregrinus anatum), California Fully Protected Species, USFWS Birds of Conservation Concern, High Potential

The Peregrine Falcon is one of the world's most widely distributed raptor species, occurring in urban areas, wetlands, deserts, maritime islands, mountains, tundra, and the tropics. Peregrine Falcons received significant attention during the middle of the 20th century due to precipitous population declines. These population crashes have been attributed to the lethal and sub-lethal effects of the organochlorine pesticide DDT (Dichlorodiphenyltrichloroethane). After DDT was banned in 1972, the Peregrine Falcon started to rebound nationwide.

In western North America, resident populations of Peregrines are found along the coast of California and the majority of the interior of the state, excluding the Central Valley and arid regions in the southeast (White et al. 2002). In California, Peregrines generally prefer open landscapes for foraging and cliffs or buildings for breeding. Nests consist of a scrape in sand, gravel, or dirt on a cliff ledge, artificial nest boxes, or abandoned raptor or corvid nests. Occasionally they will also use coniferous forest tree tops (Wrege and Cade 1977, White et al. 2002). Peregrine Falcons feed on a variety of avian species including passerines, waterfowl, and shorebirds. They have also been known to take bats, amphibians, fish, and mammals. Prey are taken in flight, off the surface of water, or on land (Sherrod 1978). The Peregrine Falcon is the fastest member of the animal kingdom with diving ("stooping") speeds recorded at speeds of 238 miles per hour (Franklin 1999). There is a known breeding pair along the Scotia Bluffs in the immediate project vicinity (Morata 2018). The species has a high potential to be present, breed, and forage within the PSB.

Black-crowned Night Heron (Nycticorax nycticorax), California State Special Status Species, Moderate Potential

Black-crowned Night Herons are year-round residents in much of California, with notable exceptions in the Sierras, Central Valley, and the arid southeast portion of the state. These herons can be found in a wide variety of habitats adjacent to water bodies including urban, wetland, partially forested, and agricultural landscapes. Black-crowned Night Herons are colonial nesters, building platform stick nests in trees, reeds, cattails, bushes, or on the ground. As opportunistic feeders, Black-crowned Night Herons eat fish, insects, mammals, birds, carrion, trash, clams, crayfish, turtles, and many other food items. (Hothem et al. 2010). Based on available data, the presence of any established colonies in the PSB is unlikely. However, based on historical records and available habitat along the Eel River, the species has a moderate potential to be present and forage within the PSB.

Osprey (Pandion haliaetus), California State Watch List, Moderate Potential

Ospreys have a cosmopolitan distribution and their breeding range throughout North America is widespread. The majority of individuals within the breeding range are migratory (except for individuals in temperate southern areas of their range, e.g. in southern Florida, the Caribbean, southern California, and the Baja Peninsula). In California, Ospreys breed throughout the state near various bodies of water including and inland near rivers and lakes as well as on the coast near



bays, estuaries, and marshes. Specific nest location preferences include: proximity to shallow fish-bearing waters, and a nest site free of predators (usually highly elevated but Ospreys nest on the ground on predator-free islands). Ospreys build large stick nests on a wide variety of natural and artificial nest substrates, especially trees, but also large rocks or bluffs, as well as nest platforms, towers supporting electrical lines or cellphone relays, and channel markers). Ospreys feed almost exclusively on fish, but anecdotal observations of non-fish prey have been documented. (Bierregaard et al. 2016).

The coniferous forest habitat adjacent to the Eel River, which is near the project area (construction footprint within a few hundred feet of river bank), could serve as nesting habitat for the species. Based on available data, the presence of any established breeders near PSB is currently unknown and would require surveys to confirm. However, based on historical records and available habitat, the species has a moderate potential to be present and forage in the PSB.

Bank Swallow (Riparia riparia), State Threatened, Moderate Potential

Bank Swallows breed in most of North America at low elevations in suitable habitat. Breeding ranges extend from Alaska to Texas. Wintering grounds occur along the western coast of Central America. In California, Bank Swallows are found in Siskiyou, Shasta, Yolo, and Lassen Counties. Bank Swallows favor open habitat associated with water features such as coastlines, streams, rivers, lake banks, wetlands, agricultural areas, prairies, and riparian woodlands. Bank Swallows generally nest colonially along stream/river banks in burrows excavated perpendicular to the bank. These burrows are lined with grasses, straw, leaves, feathers, and other organic material. Bank Swallows capture insects on the wing but will also consume aquatic insects and larvae. (Garrison 1999). Based on available data, the presence of any established colonies in the PSB is unlikely. However, based on historical records and available habitat along the Eel River, the species has a moderate potential to be present and forage in the PSB.

Reptiles

Western Pond Turtle (Emys marmorata), California State Species of Special Concern, Moderate Potential

Western Pond turtles occur in a variety of permanent and semi-permanent freshwater aquatic habitats including lakes, rivers, ponds, creeks, and marshes. The species also has the ability regulate their physiology (increase urea concentration, excrete salt, etc.), which allows them to occupy brackish environments, including and tidal estuarine marsh (Agha et al. 2019). Nesting occurs on land in areas of loose to hard-packed soils on south or west facing slopes (Rathburn et al. 1992, Reese and Welsh 1997). The species is frequently observed basking on exposed banks, logs, and rocks. Winter activity is possible but limited to unusually warm, sunny days. Normally pond turtles are dormant during winter months on the north coast, which typically involves the turtle burrowing into loose substrate above the high water mark (Thompson et al. 2016). Pond turtles have been documented nesting up to 0.5 kilometers from water (CDFW 2020). Thus, Western Pond Turtles have a moderate potential of occurring in the PSB although presence would likely be occasional, seasonal, and temporary.



Amphibians

Northern Red-legged Frog (Rana aurora), California State Species of Special Concern, Moderate Potential

Northern Red-legged Frogs occur along the west coast of N. America from British Columbia to California. The geographic range split between the Northern and California Red-legged Frog species occurs just south of Elk Creek in Mendocino County where both species overlap (Nafis 2016, AmphibiaWeb 2019). Northern Red-legged Frogs are typically found near freshwater sources (e.g., wetlands, ponds, streams, etc.). However, they can range widely and inhabit damp places far from water. Northern Red-legged Frogs reproduce in water from December to February in Humboldt County, with some breeding occurring as late as March. Preferred egg laying locations are in “vegetated shallows with little water flow in permanent wetlands and temporary pools” (Nafis 2016). Northern Red-legged Frogs are relatively common in and near coastal portions of Humboldt County and they are often seen in residential yards and gardens or crossing roads on rainy nights. Historical records have documented the species near the project area (AmphibiaWeb 2019, CDFW 2020). This being the case, Northern Red-legged Frogs have a moderate potential of occurring in the PSB.

Northwest/North Coast Clade Foothill Yellow-legged Frog (Rana boylei), California State Species of Special Concern, Moderate Potential

Foothill Yellow-legged Frogs are small (snout-vent length 3.7-7.2 centimeters (cm)) brown, gray, reddish, or olive covered frogs. Their skin is grainy rather than smooth and can be spotted or mottled (Nafis 2016). The underside of the hind legs and abdomen of adults is yellow. The species lacks defined dorsolateral folds and a dark facial mask (NatureServe 2019).

Foothill Yellow-legged Frogs occur from sea level to elevations of 2,130 meters. They range from the Willamette River in Oregon south to the Upper San Gabriel River in California, including the Coast Ranges and Sierra Nevada Foothills (Stebbins 2003, NatureServe 2019). The species prefers partially shaded, perennial streams with rocky substrate, often near riffles. These rivers and streams are typically bordered by chaparral, riparian habitat, mixed conifer forest, or wet meadows. Streams are usually small to mid-size with shallow pools and slow-moving water (CBD 2012). They are also found at river edges, in calm pools and vegetated backwaters (CBD 2012, NatureServe 2019). Rocky, cobble substrate (7.5 cm or larger) are preferred, particularly for egg laying sites (CBD 2012).

Breeding activity typically occurs from March through May with some regional variation (breeding in Northern California is reported to occur from April through June) (USFS 1997). Breeding coincides with a decrease in stream and river flows during the spring, following periods of winter storms and runoff (NatureServe 2019). Adult frogs congregate on river and stream gravel bars during this time, with oviposition occurring in stream and river margins (USFS 1997). Eggs are laid in masses (may include up to 3,000 eggs per mass) and attached to gravel or rocks (NatureServe 2019, USFS 2016, Nafis 2016). Eggs may be covered with a layer of silt, potentially to hide them from predators. Hatching time occurs in 5 to 27 days and is dependent on water temperature (Nafis 2016). Tadpoles are not known to overwinter, and larvae undergo metamorphosis during the summer to early fall (NatureServe 2019, USFS 2016). Fidelity to breeding sites has been reported in this



species (USFS 2016). Tadpoles are herbivores and graze on algae and detritus stuck on the surface of rocks and vegetation (Nafis 2016). Tadpoles prefer a diet rich in diatoms to lower quality algae (USFS 2016). Adult frogs feed on terrestrial and aquatic invertebrates including ants, snails, water striders, flies, and beetles (USFS 1997).

Foothill Yellow-legged Frog populations were historically abundant in Oregon and California, but they have declined or disappeared in more southern and inland portions of their range, with notable population extirpations in southern California (CBD 2012, USFS 2016). Major threats to the species include habitat loss or degradation, introduced predators, aerial pesticide applications, disease, and altered river and stream flow regimes (CBD 2012, NatureServe 2019). Altered stream and flow regimes, related to dam construction and management, can cause high flow releases during the spring and summer. This results in scouring, which washes away eggs and tadpoles from streams and rivers and forces adult frogs on to land, making them more vulnerable to predators (USFS 1997, NatureServe 2019, Nafis 2016). Smaller releases may result in egg stranding and desiccation (CBD 2012). In addition, controlled flows allow for the encroachment of riparian vegetation along river and stream banks, reducing gravel bar habitat for frogs (NatureServe 2019). Foothill Yellow-legged Frogs have also lost significant amounts of habitat to dam construction, intense grazing and logging practices (which causes erosion and increased sediment in stream beds), and urbanization. Climate change may also be contributing to habitat loss (USFS 1997, CBD 2012, USFS 2016). On top of this, introduced predatory fish species and bullfrogs have impacted frog populations (USFS 1997, NatureServe 2019). There is also evidence that air-borne pesticides may be negatively impacting Foothill Yellow-legged Frog populations (NatureServe 2019). Chytrid fungus has been detected in this species and is known to reduce growth in metamorphosed frogs (USFS 1997, NatureServe 2019).

Foothill Yellow-legged Frogs are known to be present in the Eel River and tributaries and likely occur along the river bank not far from the project area. This species has a moderate potential to occur in the PSB, particularly where horizontal directional drilling activities will take place close to the Eel River. However, this species seldom wanders more than a few meters from water especially during the dry season, and it is not expected to be present within the PSB where there is no suitable habitat (Bourque 2008).

Fish

Salmonids (Coho, Steelhead, Chinook), Green Sturgeon, and Pacific Lamprey are known to occur nearby in the Eel River and could potentially be impacted by direct (horizontal directional drilling activities, frack-out during drilling, vibration during nearby construction) or indirect (sediment, water quality) activities associated with the project.

Green Sturgeon, Southern DPS (*Acipenser medirostris*), Federally Threatened, Moderate Potential

The Green Sturgeon is an anadromous fish with an olive to dark green back, yellow belly, shovel-shaped snout, cartilaginous skeleton, and ossified bony scutes along its back and sides. They are long-lived fish (70+ years) that can reach lengths of up to two meters (Moyle 2002, NatureServe 2019). The full range of the species extends along the Pacific Coast from the Gulf of Alaska to Ensenada, Mexico (Moyle 2002). The southern DPS was listed as federally threatened effective June 6, 2006. The northern DPS of the species is considered a NMFS species of special concern



(71 FR 17757). NMFS originally divided the species into DPSs based on genetic analysis and spawning site fidelity (74 FR 52300). The southern DPS includes all breeding populations south of the Eel River (i.e., the upper Sacramento River and more recently the Feather River) (74 FR 52300, NMFS 2015). The northern DPS includes all breeding populations north of and including the Eel River. The Southern DPS is known to breed only in the upper Sacramento River and Feather River.

During the non-breeding season, the sturgeons migrate north along the continental shelf and are found in bays and estuaries as far north as Washington and Alaska (Lindley et al. 2011, NMFS 2015). The Green Sturgeon is a benthic feeder that mostly eats small fish and invertebrates including ghost shrimp, mud shrimp, and clams. It is found in estuaries, the lower reaches of large rivers, and salt or brackish waters off river mouths. It is a demersal species that primarily occurs in the marine environment and only enters freshwater to spawn (70 FR 17386, Moyle 2002). Spawning occurs from March to July with a peak from April to June (Moyle 2002). Eggs are broadcast-spawned and externally fertilized in relatively fast flowing water. Spawning occurs in waters with depths greater than 3 m and usually in deep pools (Emmett et al. 1991). Preferred spawning substrate includes large cobble, clean sand, or bedrock (Moyle 2002). Female Green Sturgeon produce 60,000-140,000 eggs (Emmett et al. 1991). Larvae grow quickly, reaching a length of 74 millimeters (mm) within 45 days after hatching, 300 mm by one year, and 600 mm by two years (Nakamoto et al. 1995, Deng 2000). Juveniles under 300 mm are not tolerant of salinity, and are thought to spend one to three years in freshwater before entering the ocean where they disperse widely. At maturity (13-20 years), Green Sturgeon return to freshwater spawning grounds. Spawning is thought to occur every three to five years (Nakamoto et al. 1995).

A number of threats have been identified for the Green Sturgeon Southern DPS including impassable barriers (dams), adult migration barriers, insufficient water flow, increased water temperatures, juvenile entrainment, exotic species, pesticides, land use practices resulting in increased sedimentation, and local harvesting. The southern DPS does not spawn in North Coast rivers. However, Green Sturgeon are thought to occasionally enter the lower Eel River (Stillwater Sciences and Wiyot Tribe 2017), and thus have a moderate potential to occur in the PSB.

Pacific Lamprey (Entosphenus tridentatus), State Species of Special Concern, Moderate Potential

The Pacific Lamprey, *Entosphenus tridentatus* formerly *Lampetra tridentate*, is a primitive fish lacking true fins and jaws of true fishes (Streif 2007, Stillwater Sciences 2010). They appear eel-like and have a sucker-like mouth, no scales, and breathing holes instead of gills (Streif 2007). Pacific Lamprey range from the Japan to the Bering Sea in Alaska and along the west coast of North America to central Baja, California (Stillwater Sciences 2010).

Pacific Lamprey are anadromous with typical spawning from March through July (Stillwater Sciences et al. 2016). Both sexes build redds (nests) where eggs are deposited by moving stones with their mouths, typically in riffles of gravel-bottomed streams and upstream of quality ammocoete (larval lamprey) habitat. Females may lay 30 to 240 thousand eggs (Stillwater Sciences et al. 2016). Adults then die within a few days to a month of spawning (Streif 2007). Ammocoetes hatch within approximately 19 days depending on water temperature (Streif 2007). Upon hatching, ammocoetes move downstream where they settle into silty sandy substrates (Streif 2007). They remain in these areas, often in colonies, for two to seven years filter feeding primarily on algae until they metamorphose into macrophthalmia (juveniles; Streif 2007). During this metamorphosis, they



develop eyes, a suckoral disc, sharp teeth, and more-defined fins allowing them to be free swimming (Streif 2007, Stillwater Sciences et al. 2016). As macrophthmia, they emigrate downstream to the ocean (Streif 2007). They mature into adults where they are parasitic on a variety of fishes. Adults return to their natal streams following one to three years in the marine environment (Streif 2007). There may be two major life strategies in which some adults spawn immediately upon returning to freshwater and other adults may overwinter in freshwater before spawning (Streif 2007, Stillwater Sciences et al. 2016).

This species is of particular cultural value to many native indigenous tribes, including the Weott Tribe in the larger Fortuna area, and was historically a major fisheries in the Eel River basin. Threats to their populations are similar to those experienced by salmonid species (Stillwater Sciences and Wiyot Tribe 2017). These threats include limits to passage (e.g. dams), diversions, urban development, mining, pollution, estuary modification, stream and floodplain degradation, declines in prey abundance predation by non-native species, and overharvest (Streif 2007, Stillwater Sciences and Wiyot Tribe 2017). Pacific Lamprey are common in the Eel River year-round with ammocoetes recently collected near Fernbridge (GHD pers obs 2018), and thus have a moderate potential to occur in the PSB.

Coast Cutthroat Trout (Oncorhynchus clarkia clarkia), Species of Special Concern. Moderate Potential

The Coastal Cutthroat Trout ranges from the southernmost extent of its range in the Eel River to Prince Williams Sound in Alaska. Life history strategies are more variable than for most salmonids. Moyle (2002) and Trotter (1989, 1997) recognized four main life history groupings including sea run, lacustrine, riverine, and stream resident. Ecological requirements are similar to those of Steelhead, and where the two species co-occur, Coastal Cutthroat Trout usually occupy smaller tributary streams (Moyle et al. 2008). Unlike most salmon, and similar to Steelhead, this species may spawn more than once. Adults commonly enter streams during the fall and feed on eggs from other salmon's redds. Spawning can occur from December through May. Young Cutthroat Trout may spend up to two weeks in the gravel before emerging and from one to nine years in freshwater before migrating to estuaries and ocean in the spring. Coastal Cutthroat Trout usually spend less than one year in salt water before returning to spawn. Juveniles and adults are carnivorous, feeding mostly on insects, crustaceans, and other fish throughout their lives. In freshwater, adult Cutthroat Trout typically reside in large pools while the young reside in riffles, most commonly in upper tributaries of small rivers. Coastal Cutthroat Trout utilize a wide variety of habitat types during their complex life cycle. They spawn in small tributary streams, and utilize slow flowing backwater areas, low velocity pools, and side channels for rearing of young. Good forest canopy cover, in-stream woody debris, and abundant supplies of insects are crucial for the young Cutthroat Trout's survival. During the estuarine or ocean phase of life, Cutthroat Trout utilize tidal sloughs, marshes, and swamps as holding areas and feeding grounds. Despite widespread decline throughout its range, Coastal Cutthroat Trout are present in the Eel River estuary, the Salt River, and in McNulty Slough (Downie and Lucey 2005, Scheiff et al. 2013). This species has been documented in the Eel River



estuary as well as lower Eel River tributaries (CDFW 2015a, CDFW 2019d), and thus has a moderate potential to occur in the PSB.

*Coho Salmon, Southern Oregon/Northern California Coasts ESU (*Oncorhynchus kisutch*), Federally Threatened, Moderate Potential*

The southern Oregon/northern California coast Coho Salmon Evolutionary Significant Unit (ESU) was federally listed as a threatened species by NOAA (National Oceanic and Atmospheric Administration) Fisheries in 1997 (62 FR 33038). This ESU is defined as all Coho Salmon naturally produced in streams between Punta Gorda in northern California, Humboldt County and Cape Blanco in southern Oregon. This listing was reaffirmed on June 28, 2005 (70 FR 37160).

Adult Coho Salmon enter rivers from late summer to mid-winter with most spawning occurring in early-to mid-winter. Eggs incubate for one to one and a half months during winter. Fry emerge and occupy shallow areas with vegetative cover. Juvenile Coho Salmon rear in freshwater for over a year (some for two years) before migrating to the ocean in spring (Weitkamp et al. 1995). Juveniles and yearlings spend various amounts of time in freshwater/estuary transition zones. Length of stay by an individual averages about one to two months, with spring being the heaviest time of use. Adults typically spend the next two years in the ocean before returning to their home streams to spawn (Wallace 2010).

Marine invertebrates, such as copepods, euphausiids, amphipods, and crab larvae, are the primary food sources for Coho Salmon when they first enter saltwater. Fish represent an increasing proportion of the diet as Coho Salmon grow and mature (Moyle 2002). Freshwater habitat requirements for juvenile Coho Salmon include cool water temperatures (12-14 °C is optimal), clear water, riparian vegetation that provides shade, clean silt-free gravel for spawning, in-stream large woody debris, availability of food (invertebrates), and overwintering habitat consisting of large off-channel pools with complex cover or small spring-fed tributary streams (Moyle 2002). Coho Salmon from Humboldt Bay tributaries that rear in the estuary grow larger than their cohorts that reared farther upstream, which suggests that a stream/estuary ecotone is an important overwintering and rearing habitat for juvenile Coho Salmon (Wallace and Allen 2009).

Population declines and extirpations in individual streams and tributaries have occurred due to widespread degradation of freshwater habitats from activities such as timber harvest, road building, grazing and mining activities, urbanization, stream channelization, dam construction, wetland filling or draining, beaver trapping, and water withdrawals and diversions for irrigation (NOAA Fisheries 2011). These activities have resulted in changes to channel morphology and substrate, loss and degradation of estuaries, wetlands, and riparian areas, declines in water quality (e.g., elevated pH and water temperatures, reduced dissolved oxygen, altered stream fertility and biological communities, and toxics), altered stream flows, and fish passage impediments such as dams and road crossings (NOAA Fisheries 2011). With BMPs, no adverse impacts are expected. Coho Salmon are known to spawn in the Eel River (Native Fish Society 2019), and they have a moderate potential to occur in the PSB.



Steelhead, Northern California DPS (Oncorhynchus mykiss irideus), Federally Threatened, Moderate Potential

The Northern California Steelhead (northern California DPS) is listed as a threatened species (65 FR 36074; August 7, 2000). This coastal Steelhead DPS occupies river basins from Redwood Creek in Humboldt County to the Gualala River (near the Mendocino/Sonoma County line).

Steelhead spend their adult lives in marine environments, returning to freshwater at the age of four or five to spawn, usually in their stream of origin. Steelhead is the anadromous form of rainbow trout, although steelhead are more similar to Pacific salmon than trout in their ecological requirements. Unlike salmon, Steelhead do not necessarily die after spawning. Eggs are deposited in redds constructed in gravel, and (for winter run fish) hatch after three to 14 weeks in later winter through spring. The hatchlings, or alevins, emerge from the gravel after an additional two to five weeks. During the egg and alevin stages, survival depends in part on the presence of clean, well-oxygenated gravel (excessive siltation contributes to mortality at these stages; Barnhart 1991, Stillwater Sciences 2006). Juveniles remain in fresh water for one or two years before returning to saltwater, with emigration typically occurring from March through June. A second year of growth is thought to contribute to a much higher probability of survival in the open ocean (Stillwater Sciences 2006). Less is known about the life history of summer run Steelhead, although adult fish are believed to enter rivers in May (Yoshiyama and Moyle 2010).

Juvenile steelhead use a variety of in-stream habitats depending on age and size. Smaller fish inhabit shallow, slow moving margins of streams or other open water. Larger juveniles move to deeper water with more cover and vegetation. For upstream migration, steelhead require a minimum depth of at least seven inches and a maximum stream velocity of 8 feet/second (ft/s). Spawning requires a minimum of 1-3 ft/s velocity, clean substrate, and temperatures of 39 - 49° F (Smith 1973).

In the northern California DPS, the decline of Steelhead has been attributed to factors such as watershed disturbances, including logging on steep slopes, grazing, road building, water diversions, and severe habitat degradation caused by timber harvest and intensive agricultural practices. These factors have resulted in decreased flows, loss of riparian habitat, channel widening, and increased siltation and water temperatures. Despite this decline, North Coast rivers and streams have the greatest amount of Steelhead habitat in California. The most abundant populations of Steelhead are in the Klamath/Trinity River system (Barnhart 1991, Stillwater Sciences 2006). Steelhead are known to spawn in the Eel River (Native Fish Society 2019), and they have a moderate potential to occur in the PSB.

Chinook Salmon – California Coastal ESU (Oncorhynchus tshawytscha), Federally Threatened, Moderate Potential

The Chinook Salmon (California Coastal ESU) was listed by the Federal Government as a threatened species on September 16, 1999 (64 FR 50394) and reaffirmed on June 28, 2005 (70 FR 37160). California Coast Chinook Salmon are a distinct population of Chinook Salmon that range from Redwood Creek in Humboldt County, south to the Russian River in Sonoma County.

California Coast Chinook Salmon spawn and rear in coastal and interior rivers in northern California. Ocean-type Chinook (fall run) rear for less than one year in freshwater, while stream-type



Chinook (spring run) remain in freshwater for one year or more before emigrating to forage in coastal and marine zones of California for two to five years (Healey 1991). The ideal temperature range for rearing, smolting, and migrating (seaward) Chinook Salmon appears to be 50° to 55° F (Rich 1997). Currently, only fall-run Chinook appear to be extant in the DPS. These Chinook Salmon typically migrate to the ocean within their first year from April through July, but have also been observed in Humboldt Bay in the fall (NOAA Fisheries 2007).

The destruction and modification of historic spawning habitat, fish passage barriers, over-harvesting, decreased floodplain connectivity and function, as well as reduced stream flow and predation are considered moderate to very high threats to this ESU. Land use activities (logging, road construction, streambank alterations, etc.), water diversions and overutilization of rivers and streams for recreational purposes are also have contributed to the decline of the ESU. The main factors limiting this Chinook Salmon ESU are low abundance, low distribution, and negative population trends. Predation by pikeminnow (*Ptychocheilus* spp.) in the Eel River and genetic integrity are considered significant threats to the population (NOAA Fisheries 2007). Coho Salmon are known to spawn in the Eel River (Native Fish Society 2019), and they have a moderate potential to occur in the PSB.

Insects

Obscure Bumble Bee (Bombus caliginosus), California State Special Status Species, Moderate Potential

The Obscure Bumble Bee is primarily black with yellow on the head, forward half of the thorax, and on the fourth tergite (dorsal abdominal segment; Project Noah 2019). Individuals can live approximately one year (Hatfield et al. 2014). They occur in coastal habitat within the fog-belt from British Columbia to southern California (Koch et al. 2012, Hatfield et al. 2014). Preferred plants for foraging include the following genera: *Baccharis*, *Cirsium*, *Lupinus*, *Lotus*, *Grindelia*, *Phacelia* (Koch et al. 2012). Their populations have experienced severe declines rangewide (Xerces Society 2019). These declines are poorly understood, largely because they overlap with *Bombus vosnesenskii*, a common bee that is difficult to distinguish from *B. caliginosus* in the field (Xerces Society 2019).

The PSB falls within the current documented range of the Obscure Bumble Bee and includes fog-belt coastal habitat preferred by the species (Hatfield et al. 2014). The species was recorded during *Bombus* surveys on the North Spit of Humboldt Bay and Lanphere Dunes in 2010 (Julian 2012). Preferred plants for foraging (such as *Grindelia* sp., *Baccharis* sp., and *Lupinus* sp.) may be present adjacent to the PSB but are unlikely to be present in the project area (primarily paved roads and shoulders). CDFW records have documented the species in Humboldt County (CDFW 2020). Based on the location of the project area, the possible presence of host plants in the area, and recent documented presence of the species in Humboldt County, the Obscure Bumble Bees has a moderate potential of occurring within the PSB. No impacts to Obscure Bumble Bees are expected as a result of project construction (e.g., no high quality nectar resources, nesting, or foraging habitat) will be impacted. Therefore the species is excluded from further consideration.

5.4 Critical Habitat

The Eel River is designated critical habitat for Coho, Steelhead, and Chinook Salmon.



5.5 Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the 1996 Sustainable Fisheries Act (Public Law 104-297), mandates inter-agency cooperation in achieving protection, conservation, and enhancement of Essential Fish Habitat (EFH). The Act defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." EFH designations serve to highlight the importance of habitat conservation for sustainable fisheries and sustaining valuable fish populations. EFH relates directly to the physical fish habitat and indirectly to factors that contribute to degradation of this habitat. Important features of EFH that deserve attention are adequate water quality, temperature, food source, water depth, and cover/vegetation.

Essential fish habitat is designated for species managed in Fisheries Management Plans under the Magnuson-Stevens Fishery Conservation and Management Act. EFH applies to species within the Action Area for the proposed Project. Under the Magnuson-Stevens Fishery Conservation and Management Act, the Eel River at the project site is designated as Essential Fish Habitat within the Pacific Groundfish Fishery Management Plan (PG FMP).

Due to the nature of the Project, there is potential for adverse effects to species managed under the PG FMP and their habitats from construction activities occurring adjacent to the river (e.g. possibility for sediment discharge), and beneath the river (e.g. possibility for directional drilling to erroneously puncture the river bottom). However, the project is located approximately 300 feet at its closest point from the banks of the Eel River (from the southern Alternative 1 staging areas) where the horizontal directional drilling would take place. The horizontal directional drilling will be completed by trained professionals at approximately 80 feet below the Eel River, which will not disturb in-stream habitat because no physical activity would take place within the stream channel itself. Additionally mitigation and conservation measures (BMPs) will be implemented to ensure that the project avoids and/or minimizes any adverse effects. The proposed project will have no effect on EFH.

6. Summary of Potential Impacts and Conservation Measures

Potential impacts will be addressed in detail in environmental review documents (CEQA) and associated permit applications. In general, impacts are expected to be minimal, with no measureable effect on sensitive wildlife or plant species or habitats. In addition, project activities are localized and temporary and are not expected to result in any long term or significant impacts to plants or wildlife. To the extent practical, impacts will be avoided or minimized as described below.

6.1 Effects on Federal Species

Based on project elements as presently understood, there would be no effect on federal ESA-listed species and no destruction or adverse modification of designated critical habitat.



6.2 Proposed Conservation Measures

6.2.1 Porcupines

Although there are records of Porcupines from the general project vicinity and they have a moderate potential to occur onsite, no impacts are expected to occur to this species. The species is highly mobile and, if present, is expected to leave the project area once construction activity commences. Although some foraging habitat (riparian forest) may be removed in association with this project, substantial foraging habitat suitable for this species is present in the surrounding area (riparian forest along the Eel River). As no impacts to this species are expected, no conservation measures are proposed at this time.

6.2.2 Special-status Bats

If construction occurs during the bat maternity season (generally May 1st through August 30th), surveys shall be conducted within seven days prior to construction in any areas where potential maternity roosts may be disturbed/removed. Surveys shall be conducted by a qualified biologist. Surveys shall include a visual inspection of the impact area and any large trees/snags with cavities or loose bark. If the presence of a maternity roost is confirmed, roost removal will be prohibited and no activity generating significant noise shall occur within 300 feet of the roost.

Project-related lighting shall be minimized at night, either contained within structures or limited by appropriate reflectors or shrouds and focused on areas needed for safety, security or other essential requirements.

6.2.3 Migratory Birds

Ground disturbance and vegetation clearing shall be conducted, if possible, during the fall and/or winter months and outside of the avian nesting season (March 15 – August 15) to avoid any direct effects to special status and protected birds. If ground disturbance cannot be confined to work outside of the nesting season, a qualified ornithologist shall conduct pre-construction surveys within the vicinity of the project area, to check for nesting activity of native birds and to evaluate the site for presence of raptors and special status bird species. The ornithologist shall conduct at minimum a one day pre-construction survey within the 7- day period prior to vegetation removal and ground-disturbing activities. If ground disturbance and vegetation removal work lapses for seven days or longer during the breeding season, a qualified ornithologist shall conduct a supplemental avian pre-construction survey before Project work is reinitiated.

If active nests are detected within the construction footprint or within 500 feet of construction activities, the ornithologist shall flag a buffer around each nest. Construction activities shall avoid nest sites until the ornithologist determines that the young have fledged or nesting activity has ceased. If nests are documented outside of the construction (disturbance) footprint, but within 500 feet of the construction area, buffers will be implemented as needed. In general, the buffer size for common species would be determined on a case-by-case basis in consultation with the CDFW and, if applicable, with USFWS. Buffer sizes will take into account factors such as (1) noise and human disturbance levels at the construction site at the time of the survey and the noise and disturbance expected during the construction activity; (2) distance and amount of vegetation or other screening



between the construction site and the nest; and (3) sensitivity of individual nesting species and behaviors of the nesting birds.

If active nests are detected during the survey, the qualified ornithologist shall monitor all nests at least once per week to determine whether birds are being disturbed. Activities that might, in the opinion of the qualified ornithologist, disturb nesting activities (e.g., excessive noise), shall be prohibited within the buffer zone until such a determination is made. If signs of disturbance or distress are observed, the qualified ornithologist shall immediately implement adaptive measures to reduce disturbance. These measures may include, but are not limited to, increasing buffer size, halting disruptive construction activities in the vicinity of the nest until fledging is confirmed or nesting activity has ceased, placement of visual screens or sound dampening structures between the nest and construction activity, reducing speed limits, replacing and updating noisy equipment, queuing trucks to distribute idling noise, locating vehicle access points and loading and shipping facilities away from noise-sensitive receptors, reducing the number of noisy construction activities occurring simultaneously, and/or reorienting and/or relocating construction equipment to minimize noise at noise-sensitive receptors.

6.2.4 Special status Reptiles and Amphibians

No more than one week prior to commencement of ground disturbance within 50 feet of suitable Western Pond Turtle, Northern Red-legged Frog, or Foothill Yellow-legged Frog habitat, a qualified biologist shall perform a pre-construction survey and shall relocate any individuals or egg masses that occur within the work-impact zone to nearby suitable habitat.

In the event that a Western Pond Turtle, Northern Red-legged Frog, or Foothill Yellow-legged Frog is observed in an active construction zone, the contractor shall halt construction activities in the area where observed and the frog(s) shall be moved to a safe location in similar habitat outside of the construction zone.

6.2.5 Avoid Impacts to Special Status Fish

Because no in-water work is planned, impacts to special status fish in the Eel River are considered extremely unlikely. To further reduce risk of impacts to fish and other aquatic organisms, standard erosion control BMPs will be implemented. A frac-out contingency plan will be in place for directional drilling under the Eel River and will include an immediate halt to drilling activity in the event of a possible frac-out.

6.2.6 Avoid Special Status Plants

Conservation measures for special status plant species are addressed collectively for all species. Significant impacts to special-status plant species present or likely to be present onsite shall be minimized, avoided, and (if necessary) compensated by complying with the following:

- Pre-construction surveys: Seasonally appropriate pre-construction surveys for special status plant species shall occur prior to construction within the planned area of disturbance for the Project, during the appropriate blooming time (spring or summer) for the target species. Survey methods shall comply with CDFW rare plant survey protocols, and shall be performed by a qualified field botanist. Surveys shall be modified to include detection of juvenile (pre-flowering) colonies of



perennial species when necessary. Any populations of special-status plant species that are detected shall be mapped. Populations shall be flagged if avoidance is feasible and if populations are located adjacent to construction areas.

- The locations of any special status plant populations to be avoided shall be clearly identified in the contract documents (plans and specifications).
- If special-status plant populations are detected where construction would have unavoidable impacts, a compensatory conservation plan shall be prepared and implemented in coordination with CDFW. Such plans may include salvage, propagation, on-site reintroduction in restored habitats, and monitoring.

6.2.7 Avoid Wetlands and Riparian Vegetation

Significant impacts to potential wetlands that are present onsite shall be minimized, avoided, and (if necessary) compensated through mitigation. If wetlands cannot be avoided, a formal wetland delineation will occur. Verification of the delineation would then be required by jurisdictional agencies and a 404 permit from the USACE and a 401 permit from the Regional Water Quality Control Board would then be obtained which would include any necessary mitigation. Impacts to riparian vegetation will be avoided if possible. If impacts to riparian vegetation cannot be avoided and if riparian vegetation must be removed then a Section 1602 Lake and Streambed Alteration Agreement from the CDFW would be obtained. If project activities are determined to impact wetlands, or riparian vegetation requiring mitigation, a Habitat Mitigation and Monitoring Plan (HMMP) will be prepared and implemented.

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Appendix A - CNDDDB, IPaC, CNPS, NMFS, Combined Report Table

Appendix A - Combined Report Table. Rio Dell Water Infrastructure Improvement Project – 9-Quad Database Search of USFWS IPaC, CDFW CNDDb, CNPS Rare Plant Inventory, and NMFS Database Inventory centered on project quad (Scotia) on 10.30.2019 and on 03.10.2020. Quads included Fortuna, Hydesville, Owl Creek, Taylor Peak, Scotia, Redcrest, Buckeye Mtn., Bull Creek, and Weott.

SciName	ComName	Fed List	Cal List	G Rank	S Rank	Rplant Rank	OtherStatus	Habitats	GenHab	MicroHab	Potential to Occur*
Mammals											
<i>Antrozous pallidus</i>	Pallid Bat	N	N	G5	S3		BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	Chaparral Coastal scrub Desert wash Great Basin grassland Great Basin scrub Mojavean desert scrub Riparian woodland Sonoran desert scrub Upper montane coniferous forest Valley & foothill grassland	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting.	Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Moderate Potential. This species will roost in caves, crevices, mines, hollow trees, porches, and buildings (Harris et al. 2008). Requisite roosting and foraging habitat is present in the PSB. Detected in nearby Humboldt Redwoods State Park (Bat Acoustic Monitoring Visualization Tool 2019).
<i>Aplodontia rufa humboldtiana</i>	Humboldt Mountain Beaver	N	N	G5TNR	SNR			Coastal scrub Redwood Riparian forest	Coast Range in southwestern Del Norte County and northwestern Humboldt County.	Variety of coastal habitats, including coastal scrub, riparian forests, typically with open canopy and thickly vegetated understory.	Low Potential. Commonly occurs in the Humboldt County (CDFW 2020). Requisite habitat is present in the project vicinity, but not within the PSB.

<i>Arborimus pomo</i>	Sonoma Tree Vole	N	N	G3	S3		CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	North coast coniferous forest Oldgrowth Redwood	North coast fog belt from Oregon border to Sonoma County. In Douglas-fir, redwood & montane hardwood-conifer forests.	Feeds almost exclusively on Douglas-fir needles. Will occasionally take needles of grand fir, hemlock or spruce.	Low Potential. Numerous occurrence records (both historical and recent) from the larger project vicinity (CDFW 2020). There is ample suitable habitat on nearby private timberlands. However, no suitable habitat is present within the PSB.
<i>Corynorhinus townsendii</i>	Townsend's Big-eared Bat	N	N	G3G4	S2		BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	Broadleaved upland forest Chaparral Chenopod scrub Great Basin grassland Great Basin scrub Joshua tree woodland Lower montane coniferous forest Meadow & seep Mojavean desert scrub Riparian forest Riparian woodland Sonoran desert scrub Sonoran thorn woodland Upper montane coniferous forest Valley & foothill grassland	Throughout California in a wide variety of habitats. Most common in mesic sites.	Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Moderate Potential. The species will roost in man-made structures as well as tree cavities (Erickson et al. 2002). Coniferous/hardwood forest near the project site may serve as hibernacula for this species and requisite roosting and foraging habitat is present in the PSB. Detected in nearby Humboldt Redwoods State Park (Bat Acoustic Monitoring Visualization Tool 2019).
<i>Erithizon dorsatum</i>	North American Porcupine	N	N	G5	S3		IUCN_LC-Least Concern	Broadleaved upland forest Cismontane woodland Closed-cone coniferous forest Lower montane coniferous forest North coast coniferous forest Upper montane coniferous forest	Forested habitats in the Sierra Nevada, Cascade, and Coast ranges, with scattered observations from forested areas in the Transverse Ranges.	Wide variety of coniferous and mixed woodland habitat.	Moderate Potential. Numerous occurrence records (both historical and recent) from the larger project vicinity (CDFW 2020). Requisite habitat is present in the PSB.

<i>Lasiurus blossevillii</i>	Western Red Bat	N	N	G5	S3		CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern WBWG_H-High Priority	Cismontane woodland Lower montane coniferous forest Riparian forest Riparian woodland	Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests.	Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	Moderate Potential. This species roosts in deciduous forest leaves/canopy (Erickson et al. 2002). Requisite roosting and foraging habitat is present in the PSB. Detected in nearby Humboldt Redwoods State Park (Bat Acoustic Monitoring Visualization Tool 2019).
<i>Lasiurus cinereus</i>	Hoary Bat	N	N	G5	S4		IUCN_LC-Least Concern WBWG_M-Medium Priority	Broadleaved upland forest Cismontane woodland Lower montane coniferous forest North coast coniferous forest	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding.	Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	Moderate Potential. This species generally roosts in tree foliage (Erickson et al. 2002). Requisite roosting and foraging habitat is present in the PSB. Closest record is from 1924 in Ferndale (Bat Acoustic Monitoring Visualization Tool 2019, CDFW 2020).

<i>Martes caurina humboldtensis</i>	Humboldt Marten	N	SE	G5T1	S1		CDFW_SSC-Species of Special Concern USFS_S-Sensitive	North coast coniferous forest Oldgrowth Redwood	Occurs only in the coastal redwood zone from the Oregon border south to Sonoma County.	Associated with late-successional coniferous forests, prefer forests with low, overhead cover.	No Potential. No suitable habitat exists within the PSB. There are no recent records of this species south of the Klamath River. Current populations are only known from coastal redwood forests in Del Norte and northern Humboldt County (CDFW 2018). Only historic records from the project vicinity (1913, 1927, and 1973; CDFW 2020a).
<i>Myotis evotis</i>	Long-eared Myotis	N	N	G5	S3		BLM_S-Sensitive IUCN_LC-Least Concern WBWG_M-Medium Priority		Found in all brush, woodland and forest habitats from sea level to about 9000 ft. Prefers coniferous woodlands and forests.	Nursery colonies in buildings, crevices, spaces under bark, and snags. Caves used primarily as night roosts.	Moderate Potential. This species roosts in low densities in trees, rocks, mines, buildings, bridges, and caves (Erickson et al. 2002). Requisite roosting and foraging habitat is present in the project vicinity. Detected in nearby Humboldt Redwoods State Park (Bat Acoustic Monitoring Visualization Tool 2019).

<i>Myotis volans</i>	Long-legged Myotis	N	N	G5	S3		IUCN_LC-Least Concern WBWG_H-High Priority	Upper montane coniferous forest	Most common in woodland and forest habitats above 4000 ft. Trees are important day roosts; caves and mines are night roosts.	Nursery colonies usually under bark or in hollow trees, but occasionally in crevices or buildings.	Moderate Potential. Daytime roosts include tree roosts (cavities and loose bark), rock crevices, cliffs, and buildings. Night roosts and winter hibernacula include caves and mines (Erickson et al. 2002). Requisite roosting and foraging habitat is present in the PSB. Detected in nearby Humboldt Redwoods State Park (Bat Acoustic Monitoring Visualization Tool 2019).
<i>Myotis yumanensis</i>	Yuma Myotis	N	N	G5	S4		BLM_S-Sensitive IUCN_LC-Least Concern WBWG_LM-Low-Medium Priority	Lower montane coniferous forest Riparian forest Riparian woodland Upper montane coniferous forest	Optimal habitats are open forests and woodlands with sources of water over which to feed.	Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings or crevices.	Moderate Potential. Foraging habitat for this species is present in the PSB and the species is locally common in similar habitat types in northwestern California (Pierson and Rainey 2007). Detected in nearby Humboldt Redwoods State Park (Bat Acoustic Monitoring Visualization Tool 2019).

<i>Pekania pennanti</i>	Fisher - West Coast DPS	N	ST	G5T2T3Q	S2S3		BLM_S-Sensitive CDFW_SSC-Species of Special Concern USFS_S-Sensitive	North coast coniferous forest Oldgrowth Riparian forest	Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure.	Uses cavities, snags, logs and rocky areas for cover and denning. Needs large areas of mature, dense forest.	Low Potential. No mature forest is present within project site. Closest recent record was within the Headwaters Forest Reserve (over 10 miles away), which is east of the city of Fortuna and separated from the project area by urban and grazing lands (CDFW 2020).
Birds											
<i>Accipiter cooperii</i>	Cooper's Hawk	N	N	G5	S4		CDFW_WL-Watch List IUCN_LC-Least Concern	Cismontane woodland Riparian forest Riparian woodland Upper montane coniferous forest	Woodland, chiefly of open, interrupted or marginal type.	Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	Moderate Potential. There are recent records from the project vicinity (eBird 2019). Common species known to nest and forage in urban areas.
<i>Accipiter striatus</i>	Sharp-shinned Hawk	N	N	G5	S4		CDFW_WL-Watch List IUCN_LC-Least Concern	Cismontane woodland Lower montane coniferous forest Riparian forest Riparian woodland	Ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers riparian areas.	North-facing slopes with plucking perches are critical requirements. Nests usually within 275 ft of water.	Moderate Potential. There are recent records from the project vicinity (eBird 2019). Common species known to nest and forage in urban areas.

<i>Agelaius tricolor</i>	Tricolored Blackbird	N	ST	G2G3	S1S2		BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	Freshwater marsh Marsh & swamp Swamp Wetland	Highly colonial species, most numerous in Central Valley & vicinity. Largely endemic to California.	Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	Low Potential. There are recent (rare) sightings of Tricolored Blackbirds from the project vicinity as close as the Ferndale Bottoms in 2018 (eBird 2019). There is a historical colony location in the project vicinity (Fortuna) but it has not been occupied since 1997 and is considered extirpated by CDFW (2020). No suitable habitat for this species is present within the project area.
<i>Ammodramus savannarum</i>	Grasshopper Sparrow	N	N	G5	S3		CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	Valley & foothill grassland	Dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes.	Favors native grasslands with a mix of grasses, forbs and scattered shrubs. Loosely colonial when nesting.	Low Potential. There are records of this species from the larger project vicinity, but this species is locally rare (eBird 2019). Requisite habitat is not present in the PSB.
<i>Aquila chrysaetos</i>	Golden Eagle	N	N	G5	S3		BLM_S-Sensitive CDFW_S-Sensitive CDFW_FP-Fully Protected CDFW_WL-Watch List IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	Broadleaved upland forest Cismontane woodland Coastal prairie Great Basin grassland Great Basin scrub Lower montane coniferous forest Pinon & juniper woodlands Upper montane coniferous forest Valley & foothill grassland	Rolling foothills, mountain areas, sage-juniper flats, and desert.	Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Low Potential. There are numerous records of this species from the larger project vicinity, but no suitable habitat for this species is present within the PSB (eBird 2019).

<i>Ardea herodias</i>	Great Blue Heron	N	N	G5	S4		CDF_S-Sensitive IUCN_LC-Least Concern	Brackish marsh Estuary Freshwater marsh Marsh & swamp Riparian forest Wetland	Colonial nester in tall trees, cliffsides, and sequestered spots on marshes.	Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	Moderate Potential. There are numerous records of this species from the larger project vicinity, and foraging and nesting habitat is available along the nearby Eel River (eBird 2019).
<i>Brachyramphus marmoratus</i>	Marbled Murrelet	FT	SE	G3G4	S1		CDF_S-Sensitive IUCN_EN-Endangered NABCI_RWL-Red Watch List	Lower montane coniferous forest Oldgrowth Redwood	Feeds near-shore; nests inland along coast from Eureka to Oregon border and from Half Moon Bay to Santa Cruz.	Nests in old-growth redwood-dominated forests, up to six miles inland, often in Douglas- fir.	Low Potential. There are occurrence records from the project vicinity (CDFW 2020). Although there is no suitable nesting habitat within the PSB, there is ample suitable habitat on private timberlands within 0.5 miles (CDFW 2020).
<i>Charadrius alexandrinus nivosus</i>	Western Snowy Plover	FT	N	G3T3	S2S3		CDFW_SSC-Species of Special Concern NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	Great Basin standing waters Sand shore Wetland	Sandy beaches, salt pond levees & shores of large alkali lakes.	Needs sandy, gravelly or friable soils for nesting.	Low Potential. Requisite habitat exists in close proximity to the PSB (e.g. large gravel bars on the Eel River) (Page et al. 2009). However, no habitat for this species is present within the PSB.

<i>Coccyzus americanus occidentalis</i>	Western Yellow-billed Cuckoo	FT	SE	G5T2T3	S1		BLM_S-Sensitive NABCI_RWL-Red Watch List USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern	Riparian forest	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems.	Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	Low Potential. There are historical records of this species from the project vicinity, but the species is locally rare and no suitable habitat is present at the project site. The closest known record is from 2005 on Sandy Prairie (~0.25 miles from the project area; eBird 2019).
<i>Falco peregrinus anatum</i>	American Peregrine Falcon	FD	SD	G4T4	S3S4		CDF_S-Sensitive CDFW_FP-Fully Protected USFWS_BCC-Birds of Conservation Concern		Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures.	Nest consists of a scrape or a depression or ledge in an open site.	High Potential. There is a known breeding pair on the Scotia Bluffs (Morata 2018).
<i>Nycticorax nycticorax</i>	Black-crowned Night Heron	N	N	G5	S4		IUCN_LC-Least Concern	Marsh & swamp Riparian forest Riparian woodland Wetland	Colonial nester, usually in trees, occasionally in tule patches.	Rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, marshy spots.	Moderate Potential. There are numerous records of this species from the larger project vicinity, foraging and nesting habitat is present along the nearby Eel River (eBird 2019).
<i>Pandion haliaetus</i>	Osprey	N	N	G5	S4		CDF_S-Sensitive CDFW_WL-Watch List IUCN_LC-Least Concern	Riparian forest	Ocean shore, bays, freshwater lakes, and larger streams.	Large nests built in tree-tops within 15 miles of a good fish-producing body of water.	Moderate Potential. There are records of this species from the project vicinity, and foraging and nesting habitat is available along the nearby Eel River (eBird 2019).

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<i>Acipenser medirostris</i>	Green Sturgeon	FT	N	G3	S1S2		AFS_VU-Vulnerable CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened NMFS_SC-Species of Concern	Aquatic Klamath/North coast flowing waters Sacramento/San Joaquin flowing waters	These are the most marine species of sturgeon. Abundance increases northward of Point Conception. Spawns in the Sacramento, Klamath, & Trinity Rivers.	Spawns at temps between 8-14 C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	Moderate Potential. Known to spawn in the Eel River in the spring (Stillwater Sciences and Wiyot Tribe 2017).
<i>Entosphenus tridentatus</i>	Pacific Lamprey	N	N	G4	S4		AFS_VU-Vulnerable BLM_S-Sensitive CDFW_SSC-Species of Special Concern USFS_S-Sensitive	Aquatic Klamath/North coast flowing waters Sacramento/San Joaquin flowing waters South coast flowing waters	Found in Pacific Coast streams north of San Luis Obispo County, however regular runs in Santa Clara River. Size of runs is declining.	Swift-current gravel-bottomed areas for spawning with water temps between 12-18 C. Ammocoetes need soft sand or mud.	Moderate Potential. Known to spawn in the Eel River basin primarily April through mid-July (Streif 2007, Stillwater 2010, Limm and Power 2011).
<i>Eucyclogobius newberryi</i>	Tidewater Goby	FE	N	G3	S3		AFS_EN-Endangered CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable	Aquatic Klamath/North coast flowing waters Sacramento/San Joaquin flowing waters South coast flowing waters	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River.	Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	No Potential. No brackish water is present within the PSB.
<i>Oncorhynchus clarkii clarkii</i>	Coast Cutthroat Trout	N	N	G4T4	S3		AFS_VU-Vulnerable CDFW_SSC-Species of Special Concern USFS_S-Sensitive	Aquatic Klamath/North coast flowing waters	Small coastal streams from the Eel River to the Oregon border.	Small, low gradient coastal streams and estuaries. Needs shaded streams with water temperatures <18C, and small gravel for spawning.	Moderate Potential. Known to spawn in the Eel River and its tributaries with peak spawning in December in large streams (Native Fish Society 2019, CDFW 2020).
<i>Oncorhynchus kisutch</i> pop. 2	Coho Salmon - southern Oregon / northern California ESU	FT	ST	G4T2Q	S2?		AFS_TH-Threatened	Aquatic Klamath/North coast flowing waters Sacramento/San Joaquin flowing waters	Federal listing refers to populations between Cape Blanco, Oregon and Punta Gorda, Humboldt County, California.	State listing refers to populations between the Oregon border and Punta Gorda, California.	Moderate Potential. Known to spawn in the Eel River and its tributaries primarily in November and December (Native Fish Society 2019, CDFW 2020).

<i>Oncorhynchus mykiss irideus</i> pop. 16	Steelhead - northern California DPS	FT	N	G5T2T3Q	S2S3		AFS_TH-Threatened	Aquatic Sacramento/San Joaquin flowing waters	Coastal basins from Redwood Creek south to the Gualala River, inclusive. Does not include summer-run steelhead.		Moderate Potential. Known to spawn in the Eel River and its tributaries from December through April (CalFish 2018, Native Fish Society 2019).
<i>Oncorhynchus tshawytscha</i>	Chinook Salmon - California Coastal ESU	FT	N	G5	S1		AFS_TH-Threatened	Aquatic Sacramento/San Joaquin flowing waters	Federal listing refers to wild spawned, coastal, spring & fall runs between Redwood Cr, Humboldt Co & Russian River, Sonoma Co		Moderate Potential. Known to spawn in the Eel River and its tributaries with peak spawning from October to December (CalTrout 2019, Native Fish Society 2019).
<i>Spirinchus thaleichthys</i>	Longfin Smelt	FC	ST	G5	S1			Aquatic Estuary	Euryhaline, nektonic & anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column.	Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.	Low Potential. Known to occur in the Eel River, but prefer higher salinity waters near river mouths (Native Fish Society 2019).
Insects											
<i>Bombus caliginosus</i>	Obscure Bumble Bee	N	N	G4?	S1S2		IUCN_VU-Vulnerable		Coastal areas from Santa Barbara county to north to Washington state.	Food plant genera include Baccharis, Cirsium, Lupinus, Lotus, Grindelia and Phacelia.	Moderate Potential. Project site falls within the species current range (Hatfield et al. 2014). In addition, the project area is within the coastal fog belt and may include several of the species' food plants.

<i>Bombus occidentalis</i>	Western Bumble Bee	N	SCE	G2G3	S1		USFS_S-Sensitive XERCES_IM-Imperiled		Once common & widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease.		Low Potential. Although the project area falls within the species pre-2002 range (according to ICUN Redlist), the range has contracted significantly in the last decade and now mainly includes the intermountain west and cascade regions of the US (Hatfield et al. 2014).
Bryophytes											
<i>Fissidens pauperculus</i>	minute pocket moss	N	N	G3?	S2	1B.2	USFS_S-Sensitive	North coast coniferous forest Redwood	North coast coniferous forest.	Moss growing on damp soil along the coast. In dry streambeds and on stream banks. 10-1024 m.	Low Potential. A limited amount of roadside riparin habitat occurs within north coast coniferous forest.
Dicots											
<i>Astragalus agnicidus</i>	Humboldt County milk-vetch	N	SE	G2	S2	1B.1		Broadleafed upland forest, North Coast coniferous forest	openings, disturbed areas, sometimes roadsides		No Potential. Elevation of project area is too low for this species.
<i>Clarkia amoena ssp. whitneyi</i>	Whitney's farewell-to-spring	N	N	G5T1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden SB_UCBBG-UC Berkeley Botanical Garden	Coastal bluff scrub Coastal scrub	Coastal bluff scrub, coastal scrub.	5-125 m.	Low Potential. Coastal bluff scrub does not occur nor does true coastal scrub. Known from one CNDDDB occurrence west of Fortuna. However, this occurrence is mapped from a 1955 reference and CNDDDB notes it "needs field work".

<i>Downingia willamettensis</i>	Cascade downingia	N	N	G4	S2	2B.2		Cismontane woodland Valley & foothill grassland Vernal pool	Cismontane woodland, valley and foothill grasslands, vernal pools.	Lake margins. 15-1110 m.	No Potential. Specific habitats for this species are not present in project area.
<i>Erysimum menziesii</i>	Menzies' wallflower	FE	SE	G1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden SB_UCBBG-UC Berkeley Botanical Garden	Coastal dunes	Coastal dunes.	Localized on dunes and coastal strand. 1-25 m.	No Potential. Specific habitats for this species are not present in project area.
<i>Gilia capitata ssp. pacifica</i>	Pacific gilia	N	N	G5T3	S2	1B.2		Chaparral Coastal bluff scrub Coastal prairie Valley & foothill grassland	Coastal bluff scrub, chaparral, coastal prairie, valley and foothill grassland.	5-1345 m.	Low Potential. Known from Scotia bluffs along the Eel River near Rio Dell. Known from railroad right of way and moist forest ravines. Some potential low quality habitat occurs along roadsides.
<i>Hesperevax sparsiflora var. brevifolia</i>	short-leaved evax	N	N	G4T3	S2	1B.2	BLM_S-Sensitive	Coastal bluff scrub Coastal dunes Coastal prairie	Coastal bluff scrub, coastal dunes, coastal prairie.	Sandy bluffs and flats. 0-640 m.	No Potential. Specific habitats for this species are not present in project area.
<i>Hesperolinon adenophyllum</i>	glandular western flax	N	N	G2G3	S2S3	1B.2		Chaparral, Cismontane woodland, Valley and foothill grassland	usually serpentinite		No Potential. Specific habitats for this species are not present in project area.
<i>Layia carnosa</i>	beach layia	FE	SE	G2	S2	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden	Coastal dunes Coastal scrub	Coastal dunes, coastal scrub.	On sparsely vegetated, semi-stabilized dunes, usually behind foredunes. 3-30 m.	No Potential. Specific habitats for this species are not present in project area.
<i>Montia howellii</i>	Howell's montia	N	N	G3G4	S2	2B.2		Meadow & seep North coast coniferous forest Vernal pool Wetland	Meadows and seeps, north coast coniferous forest, vernal pools.	Vernally wet sites; often on compacted soil. 10-1215 m.	Low Potential. Some compacted soil and marginal habitat occurs within north coast coniferous forest along roadsides however, habitat is marginal for this species.

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<i>Carex arcta</i>	northern clustered sedge	N	N	G5	S1	2B.2		Bog & fen North coast coniferous forest Wetland	Bogs and fens, north coast coniferous forest.	Mesic sites. 60-1405 m.	Low Potential. North coast coniferous forest containing wetlands is present. However no bog or fen habitat is present.
<i>Erythronium oregonum</i>	giant fawn lily	N	N	G4G5	S2	2B.2		Cismontane woodland Meadow & seep Ultramafic	Cismontane woodland, meadows and seeps.	Openings. Sometimes on serpentine; rocky sites. 300-1435 m.	No Potential. Specific habitats for this species are not present in project area.
<i>Erythronium revolutum</i>	coast fawn lily	N	N	G4G5	S3	2B.2		Bog & fen Broadleaved upland forest North coast coniferous forest Wetland	Bogs and fens, broadleaved upland forest, north coast coniferous forest.	Mesic sites; streambanks. 60-1405 m.	Low Potential. Some roadside riparian habitat within a redwood forest is present. However habitat within actual project area is limited and very marginal for this species.
<i>Lilium occidentale</i>	western lily	FE	SE	G1	S1	1B.1	SB_BerrySB-Berry Seed Bank	Bog & fen Coastal bluff scrub Coastal prairie Coastal scrub Freshwater marsh Marsh & swamp North coast coniferous forest Wetland	Coastal scrub, freshwater marsh, bogs and fens, coastal bluff scrub, coastal prairie, north coast coniferous forest, marshes and swamps.	Well-drained, old beach washes overlain with wind-blown alluvium and organic topsoil; usually near margins of Sitka spruce. 3-110 m.	No Potential. Specific habitats for this species are not present in project area.
<i>Piperia candida</i>	white-flowered rein orchid	N	N	G3	S3	1B.2	BLM_S-Sensitive	Broadleaved upland forest Lower montane coniferous forest North coast coniferous forest Ultramafic	North Coast coniferous forest, lower montane coniferous forest, broadleaved upland forest.	Sometimes on serpentine. Forest duff, mossy banks, rock outcrops, and muskeg. 20-1615 m.	Low Potential. Potential habitat for this species is extremely limited and marginal within the project area.

***Potential to Occur:**

No Potential:	Habitat on and adjacent to the site is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Low Potential.	Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not
Moderate Potential.	Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of
High Potential.	All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being

Key:

FE = Federal Endangered

FT = Federal Threatened

FC = Federal Candidate
FD = Federal Delisted
PT = Proposed Threatened
BCC = USFWS Birds of Conservation Concern
SE = State Endangered
SD = State Delisted
SNR=State Not Ranked
ST = State Threatened
SR = State Rare
SCT = State Candidate Endangered
SCT = State Candidate Threatened
SSC = CDFG Species of Special Concern
CFP = CDFG Fully Protected Animal
1A = CRPR List 1A: Plants presumed extinct in California
1B = CRPR List 1B: Plants rare, threatened or endangered in California and elsewhere
2 = CRPR List 2: Plants rare, threatened, or endangered in California, but more common elsewhere
3 = CRPR List 3: Plants about which more information is needed (a review list)
4 = CRPR List 4: Plants of limited distribution (a watch list)

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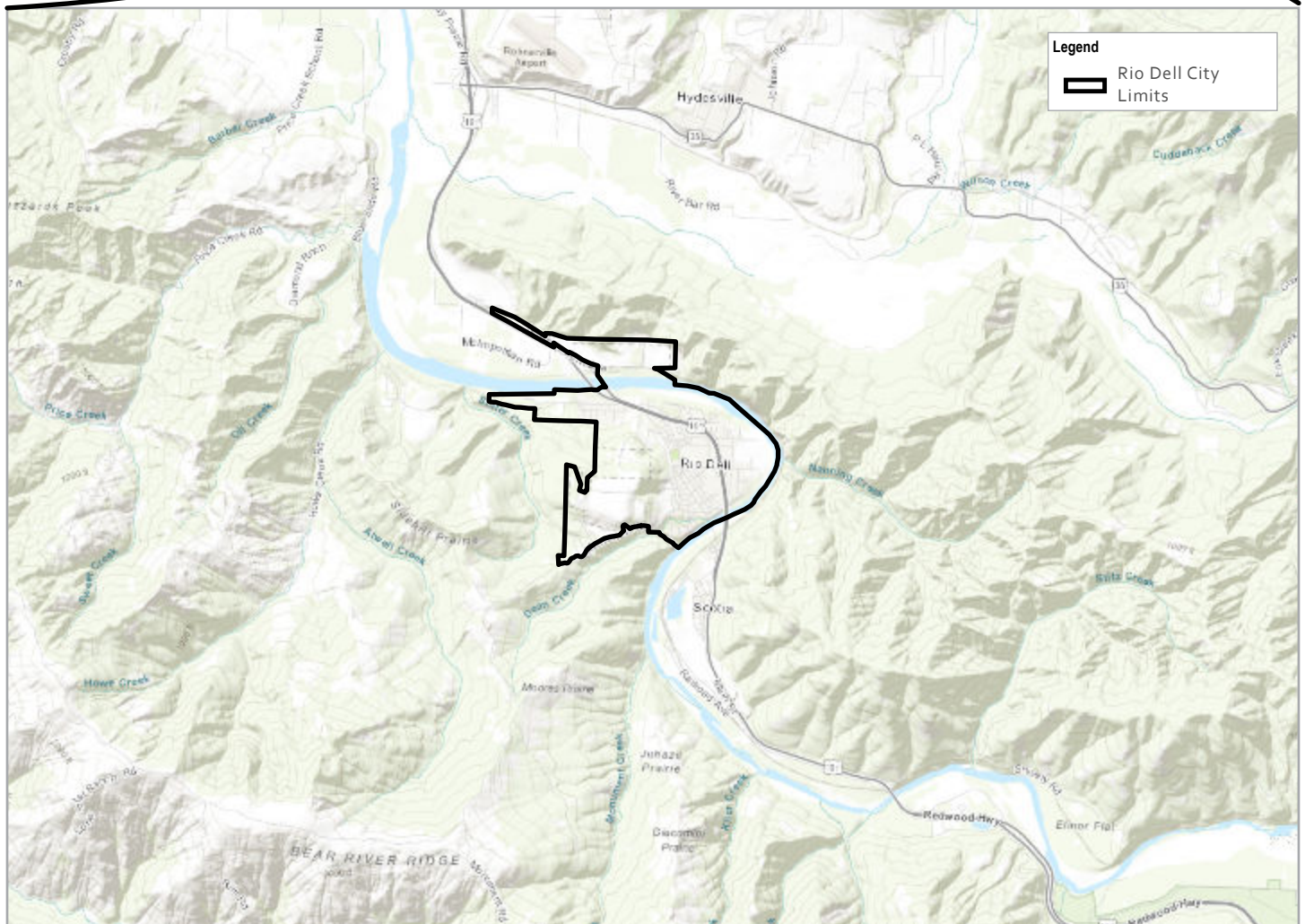
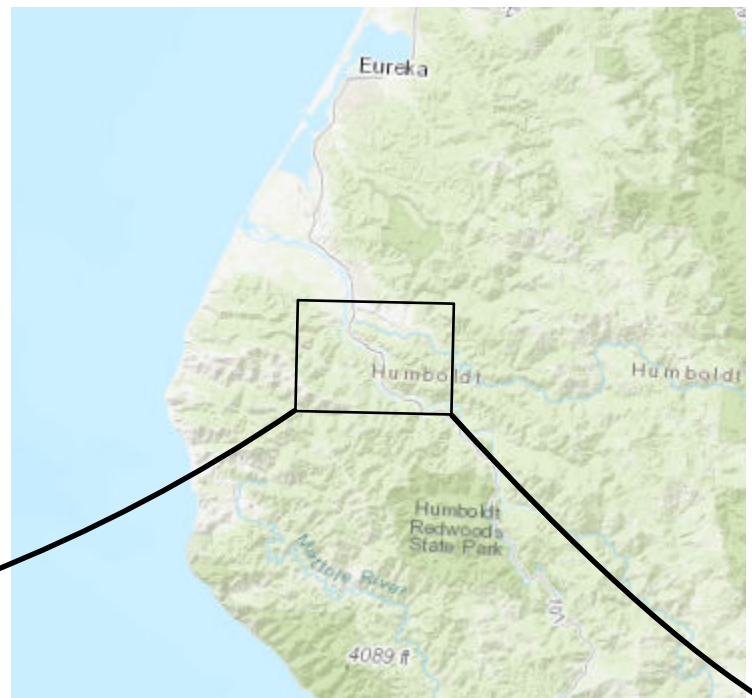
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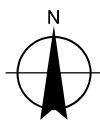
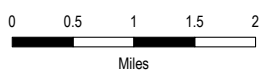
Streif, B. (2007). Pacific Lamprey Fact Sheet. US Department of the Interior, Fish and Wildlife Service, Portland Fish and Wildlife Service Office, OR, USA.



Appendix B – Figures



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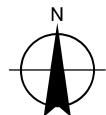
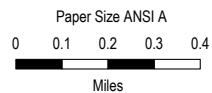
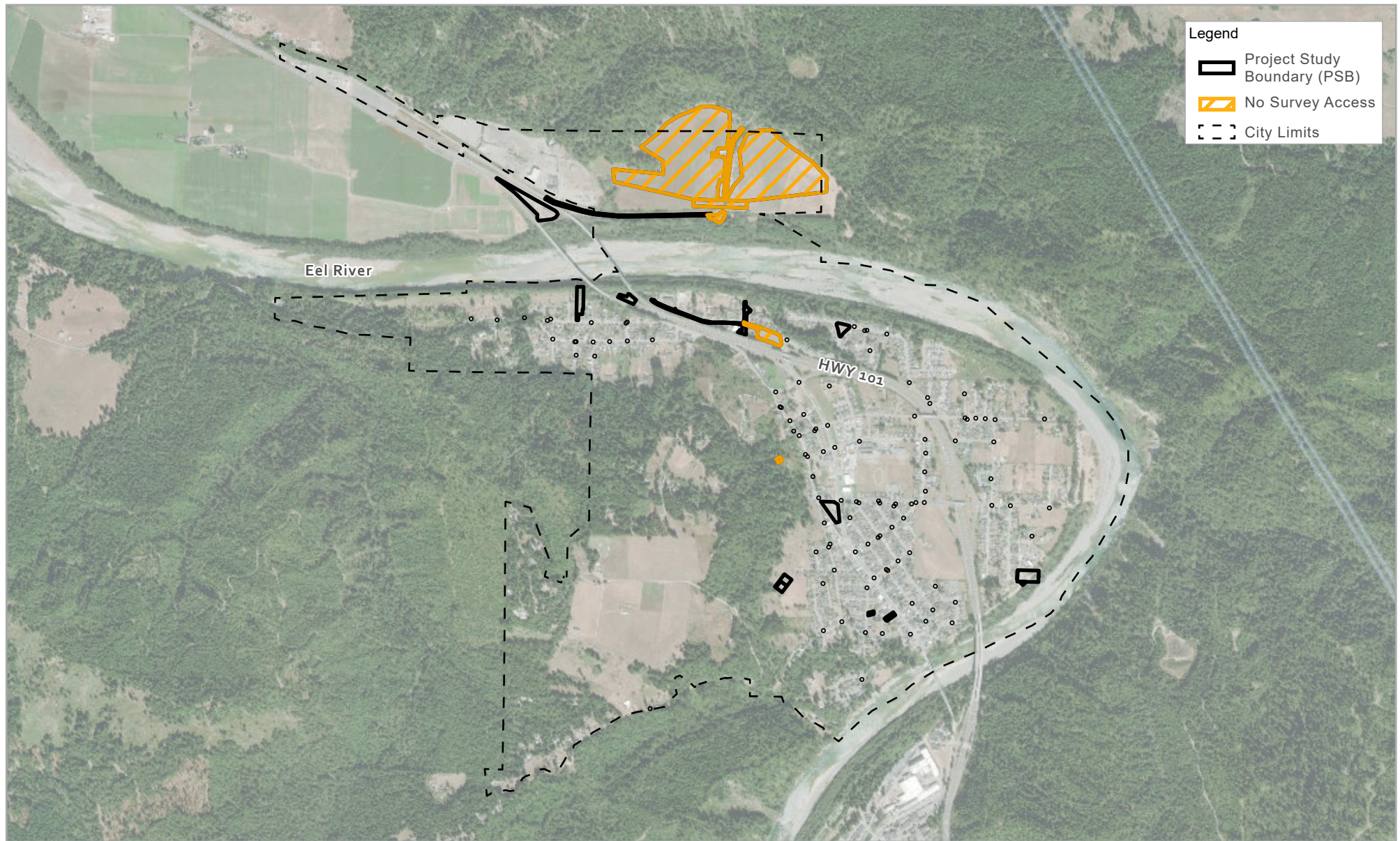


**City of Rio Dell
Water Infrastructure Improvement**

Project No. 11121530
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Date March 2020

Vicinity Map

FIGURE 1



Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



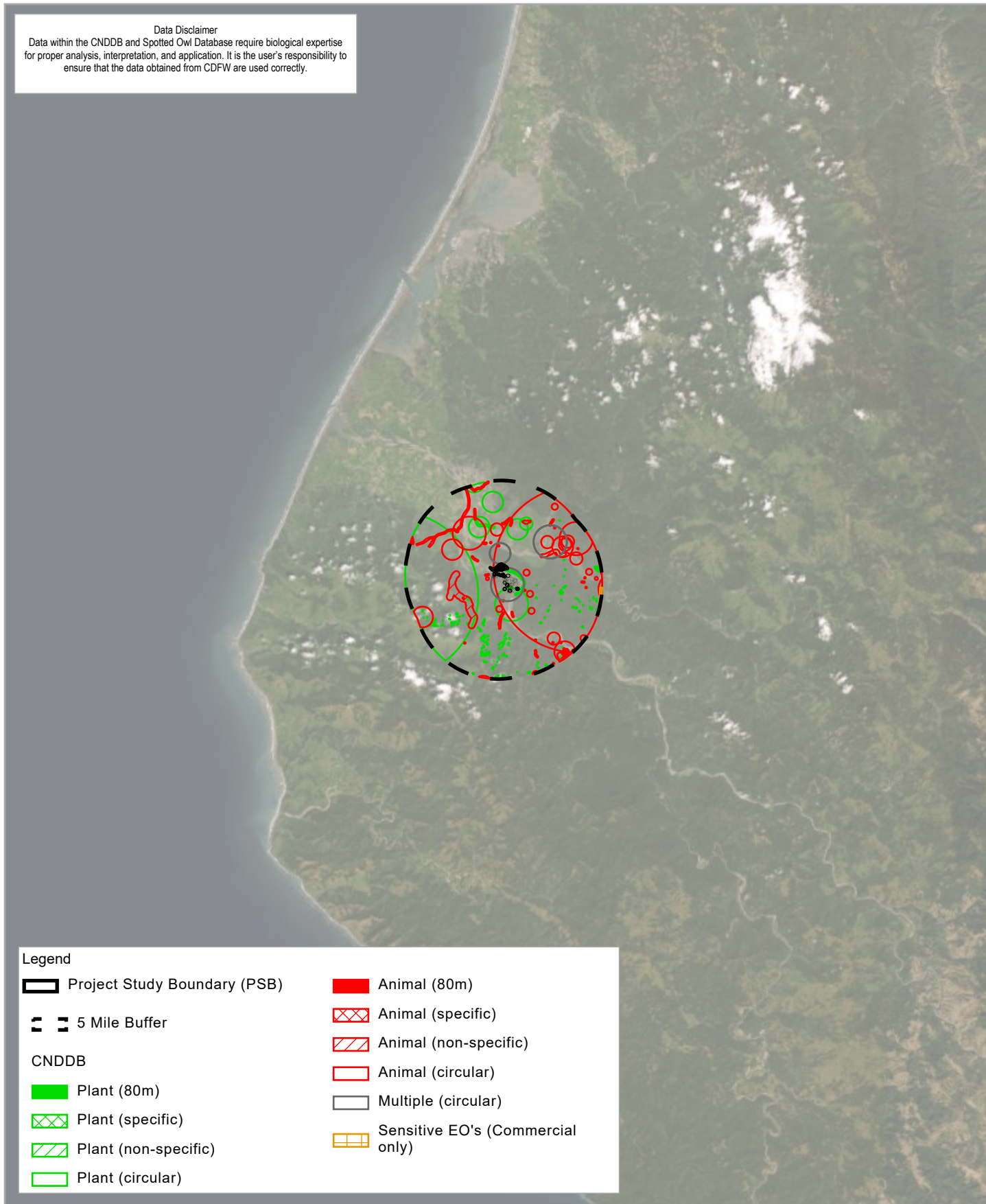
City of Rio Dell
Water Infrastructure Improvement

Project No. 11121530
Revision No. -
Date March 2020

Project Area

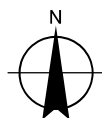
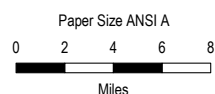
FIGURE 2

Data Disclaimer
Data within the CNDDDB and Spotted Owl Database require biological expertise for proper analysis, interpretation, and application. It is the user's responsibility to ensure that the data obtained from CDFW are used correctly.



Legend

- | | |
|------------------------------|----------------------------------|
| Project Study Boundary (PSB) | Animal (80m) |
| 5 Mile Buffer | Animal (specific) |
| CNDDDB | Animal (non-specific) |
| Plant (80m) | Animal (circular) |
| Plant (specific) | Multiple (circular) |
| Plant (non-specific) | Sensitive EO's (Commercial only) |
| Plant (circular) | |



Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California III FIPS 0403 Feet

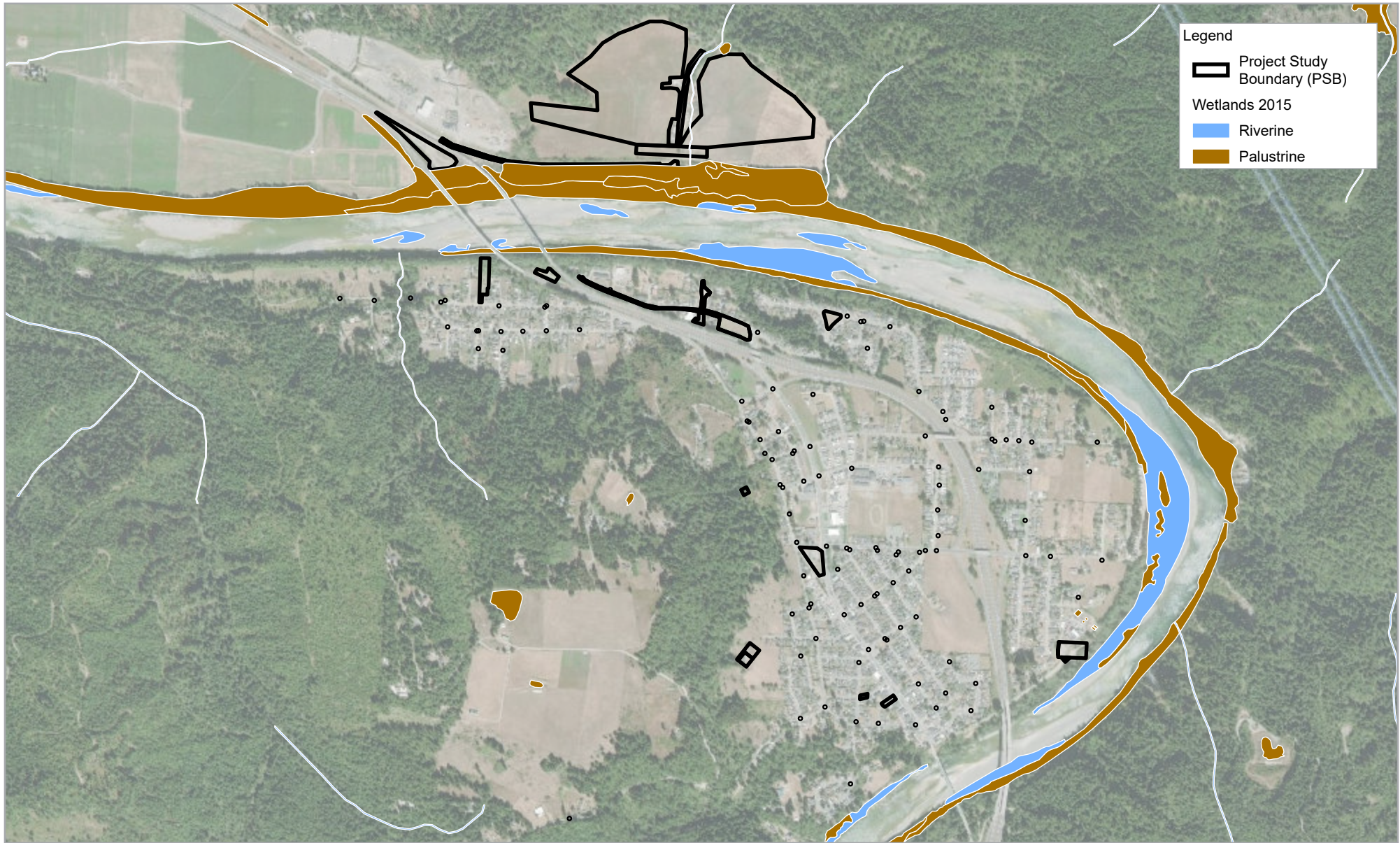


**City of Rio Dell
Water Infrastructure**

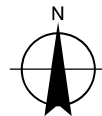
Project No. **11121530**
Revision No. **-**
Date **March 2020**

**CNDDDB Occurrences
5 mile radius**

FIGURE 3



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Feet



Map Projection: Lambert Conformal Conic
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Grid: NAD 1983 StatePlane California III FIPS 0403 Feet

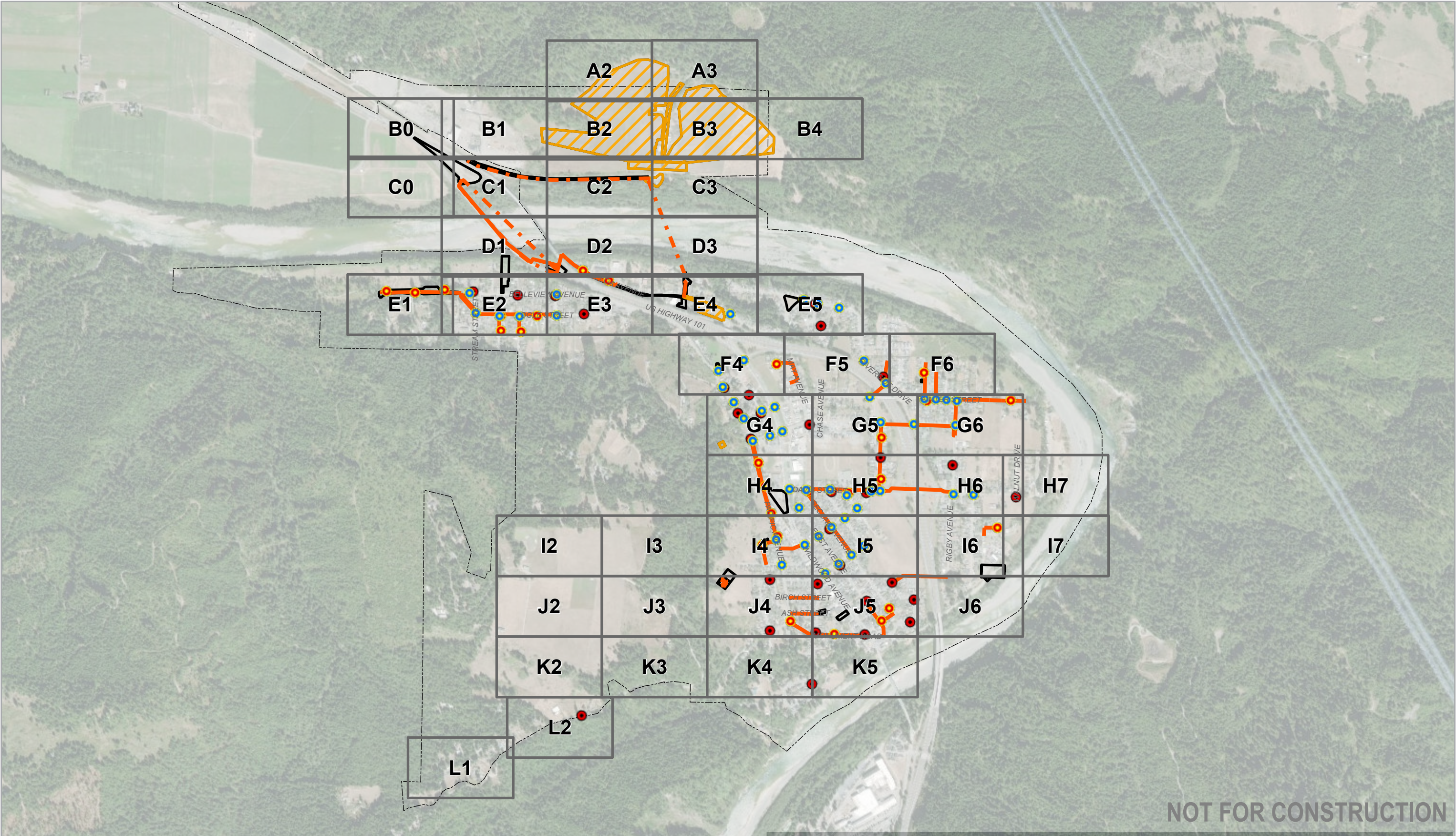


City of Rio Dell
Water Infrastructure Improvement

Project No. 11121530
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Date March 2020

National Wetland Inventory

FIGURE 4



NOT FOR CONSTRUCTION

Legend

Valve Replacement

Hydrant Replacement

Proposed New Hydrant

Proposed New Pipe

Proposed Pipe to be Replaced

No Survey Access

Project Study Boundary (PSB)

City Limits

Map Book Page

Paper Size ANSI B

640

0

640

1,280

1,920

Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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City of Rio Dell
Water Infrastructure Improvement

**Wetland Reconnaissance and
Sensitive Natural Communities Mapping**

Not a Product of a Formal Wetland Delineation

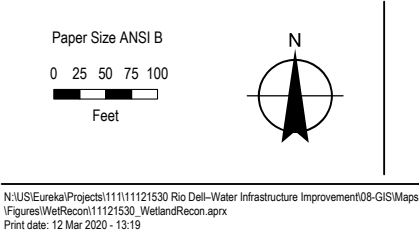
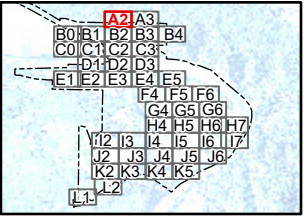
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Revision No. -
Date 3/13/2020

FIGURES A2-L2

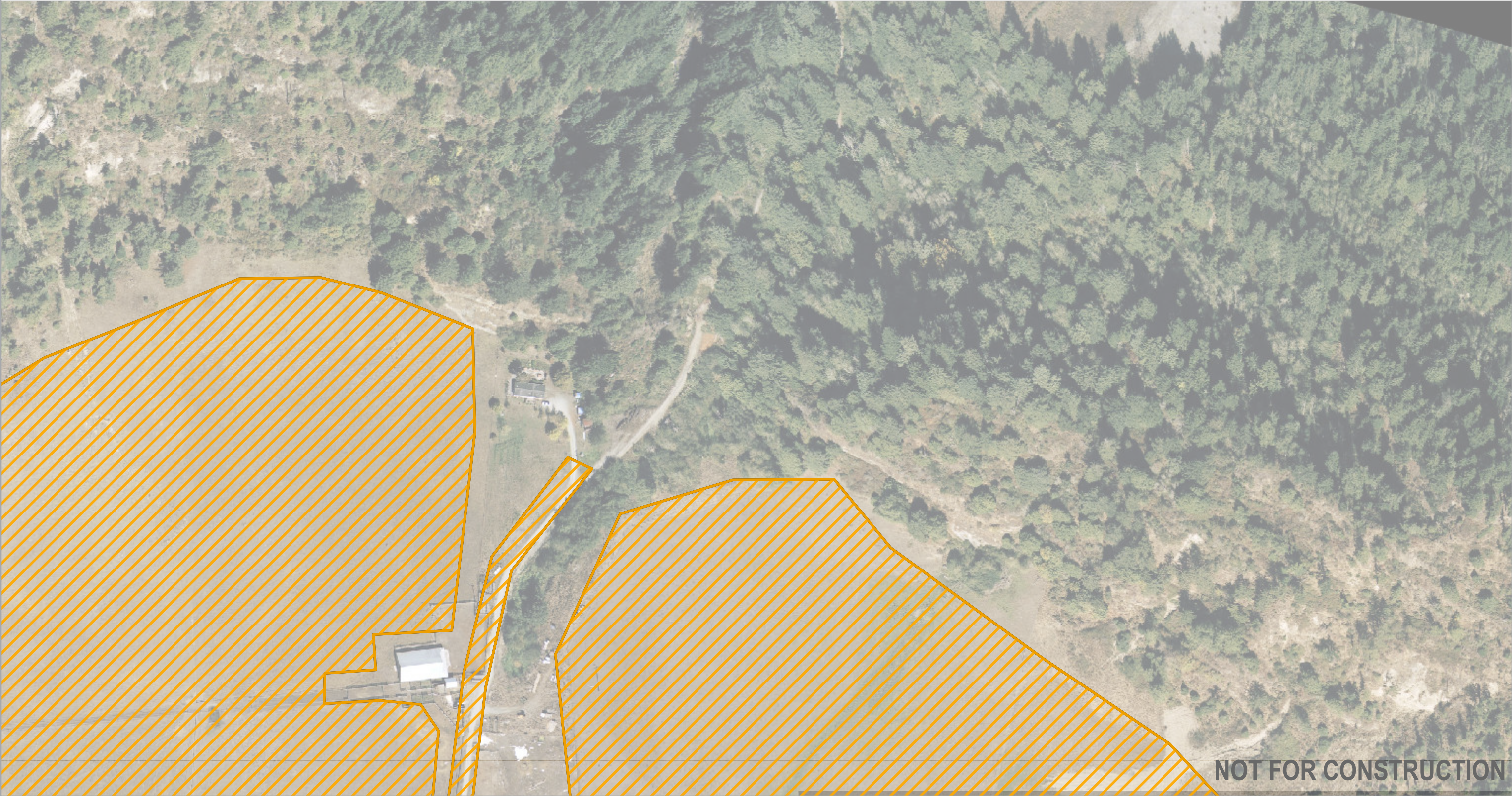
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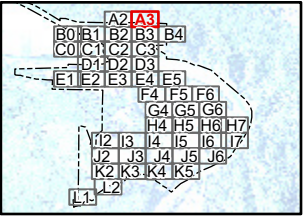
- Legend
- | | | | | | |
|--|---------------------------|--|------------------------------|--|------------------------------|
| | Possible Wetland | | Hydrant Replacement | | Proposed New Pipe |
| | Probable Wetland | | Valve Replacement | | Project Study Boundary (PSB) |
| | Red Alder Forest Alliance | | Proposed Pipe to be Replaced | | No Survey Access |
| | Proposed New Hydrant | | | | City Limits |



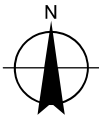
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- Legend
- | | | | | | |
|--|---------------------------|--|------------------------------|--|------------------------------|
| | Possible Wetland | | Hydrant Replacement | | Proposed New Pipe |
| | Probable Wetland | | Valve Replacement | | Project Study Boundary (PSB) |
| | Red Alder Forest Alliance | | Proposed Pipe to be Replaced | | No Survey Access |
| | Proposed New Hydrant | | | | City Limits |



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City of Rio Dell
Water Infrastructure Improvement

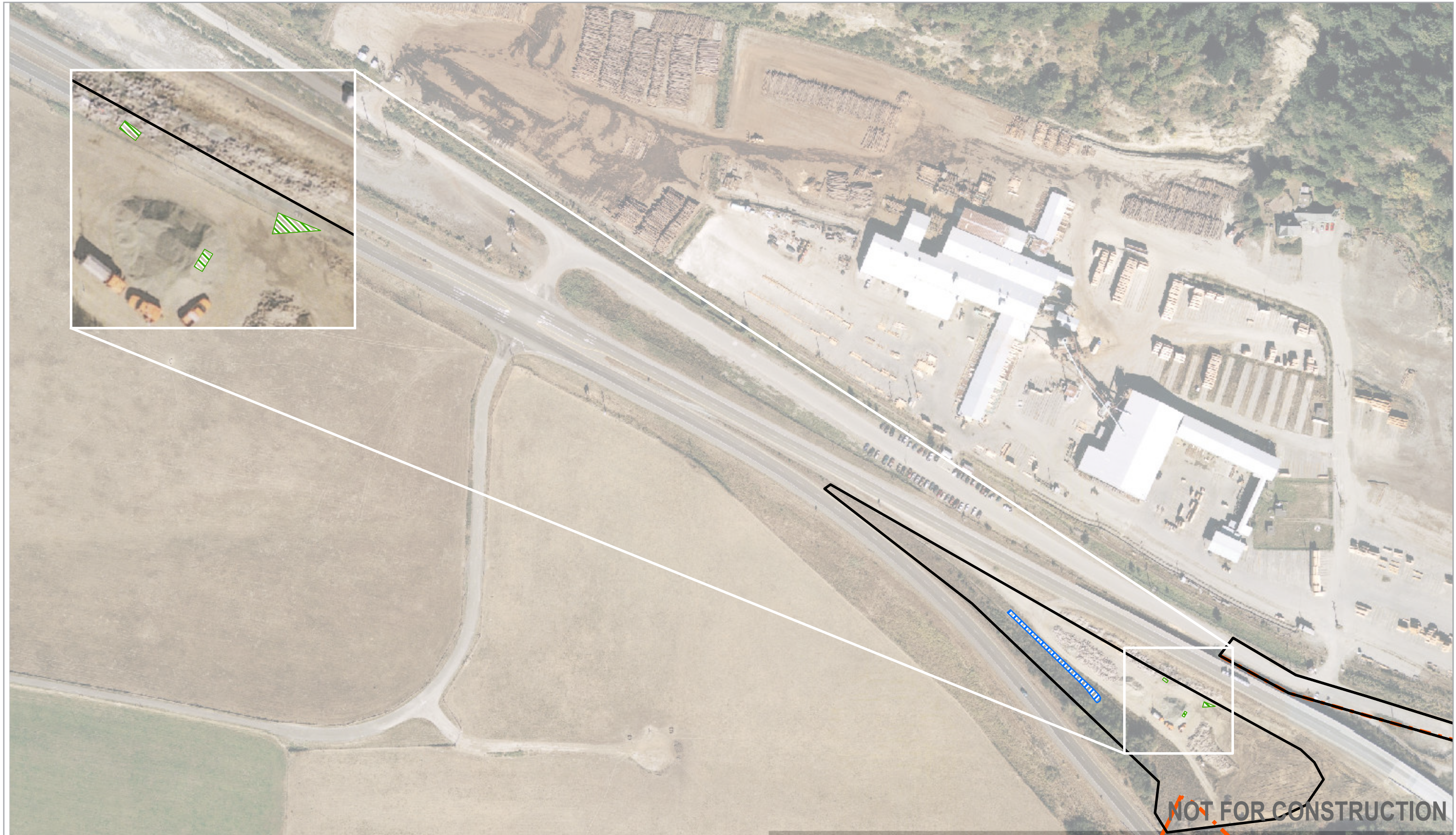
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Sensitive Natural Communities Mapping**
Not a Product of a Formal Wetland Delineation

Project No. 11121530
Revision No. -
Date 3/12/2020

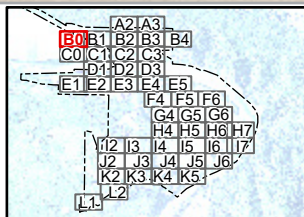
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- Legend
- | | | | | | |
|--|---------------------------|--|------------------------------|--|------------------------------|
| | Possible Wetland | | Hydrant Replacement | | Proposed New Pipe |
| | Probable Wetland | | Valve Replacement | | Project Study Boundary (PSB) |
| | Red Alder Forest Alliance | | Proposed Pipe to be Replaced | | No Survey Access |
| | Proposed New Hydrant | | City Limits | | |



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City of Rio Dell
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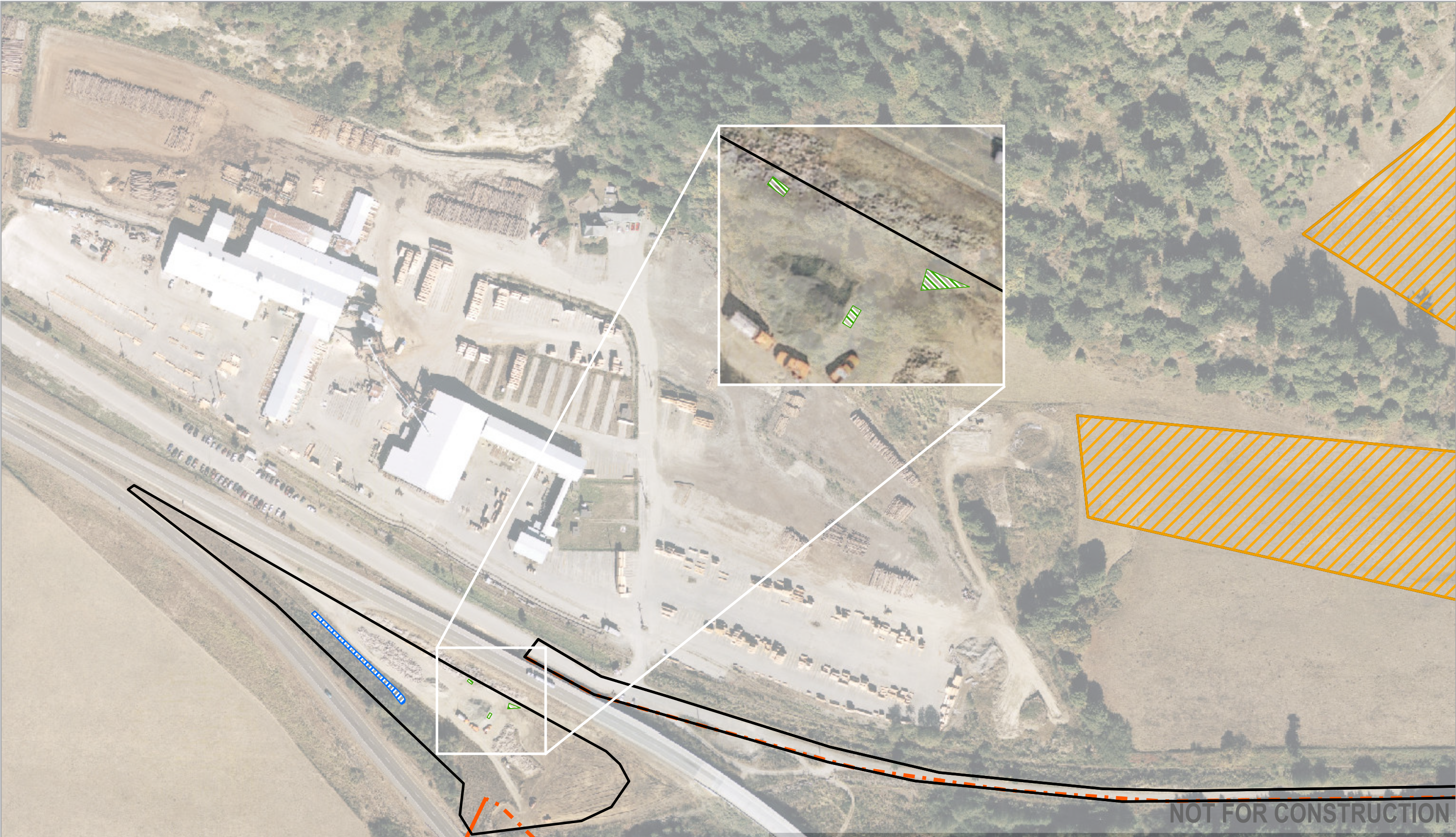
**Wetland Reconnaissance and
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Project No. 11121530
Revision No. -
Date 3/12/2020

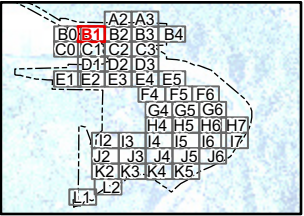
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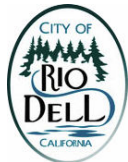
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- Legend
- | | | | | | |
|--|---------------------------|--|------------------------------|--|------------------------------|
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| | Probable Wetland | | Valve Replacement | | Project Study Boundary (PSB) |
| | Red Alder Forest Alliance | | Proposed Pipe to be Replaced | | No Survey Access |
| | Proposed New Hydrant | | City Limits | | |



Paper Size ANSI B
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Feet



City of Rio Dell
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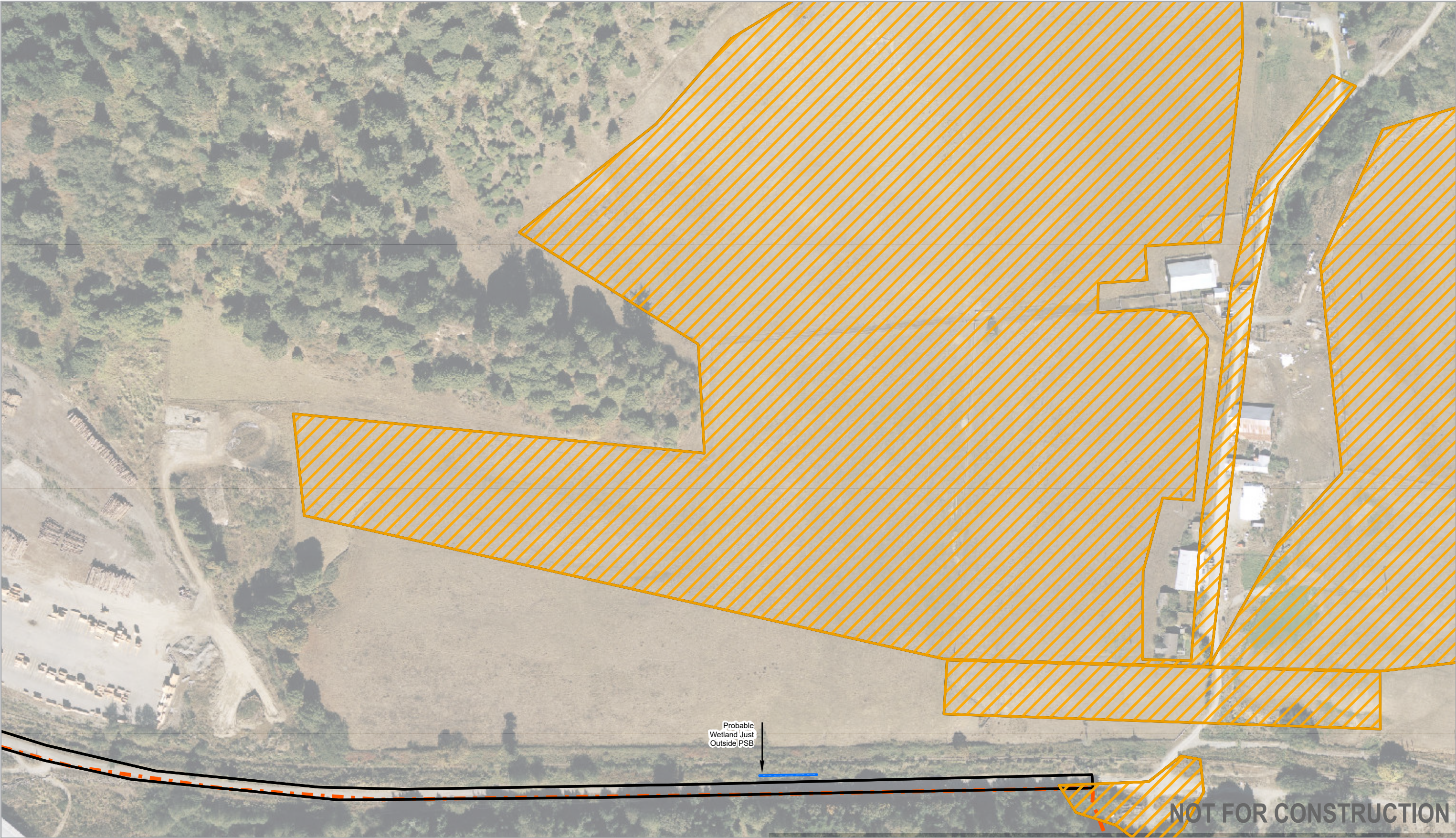
**Wetland Reconnaissance and
Sensitive Natural Communities Mapping**
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Project No. 11121530
Revision No. -
Date 3/12/2020

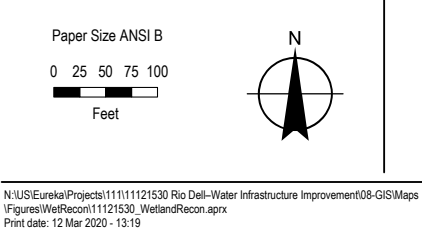
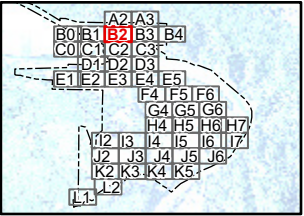
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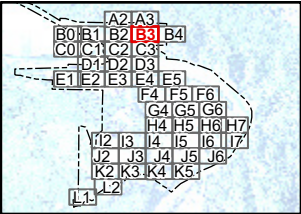
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- Possible Wetland
 - Probable Wetland
 - Red Alder Forest Alliance
 - Proposed New Hydrant
 - Hydrant Replacement
 - Valve Replacement
 - Proposed Pipe to be Replaced
 - Proposed New Pipe
 - Project Study Boundary (PSB)
 - No Survey Access
 - City Limits



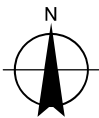


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- Legend
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|--|---------------------------|--|------------------------------|--|------------------------------|
| | Possible Wetland | | Hydrant Replacement | | Proposed New Pipe |
| | Probable Wetland | | Valve Replacement | | Project Study Boundary (PSB) |
| | Red Alder Forest Alliance | | Proposed Pipe to be Replaced | | No Survey Access |
| | Proposed New Hydrant | | | | City Limits |



Paper Size ANSI B
0 25 50 75 100
Feet



City of Rio Dell
Water Infrastructure Improvement

**Wetland Reconnaissance and
Sensitive Natural Communities Mapping**
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Project No. 11121530
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FIGURE B3

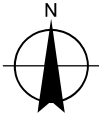
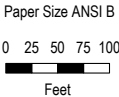
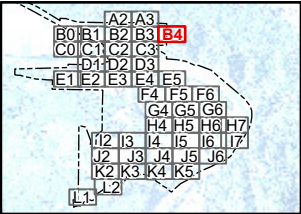
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- Legend

 - Possible Wetland
 - Probable Wetland
 - Red Alder Forest Alliance
 - Proposed New Hydrant
- Hydrant Replacement
 - Valve Replacement
 - Proposed Pipe to be Replaced
- Proposed New Pipe
 - Project Study Boundary (PSB)
 - No Survey Access
 - City Limits



City of Rio Dell
Water Infrastructure Improvement

**Wetland Reconnaissance and
Sensitive Natural Communities Mapping**
Not a Product of a Formal Wetland Delineation

Project No. 11121530
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Date 3/12/2020

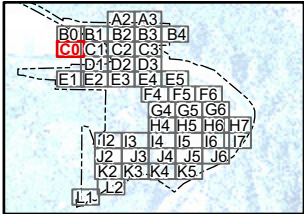
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- Legend
- Possible Wetland
 - Probable Wetland
 - Red Alder Forest Alliance
 - Proposed New Hydrant
 - Hydrant Replacement
 - Valve Replacement
 - Proposed Pipe to be Replaced
 - Proposed New Pipe
 - Project Study Boundary (PSB)
 - No Survey Access
 - City Limits



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Feet



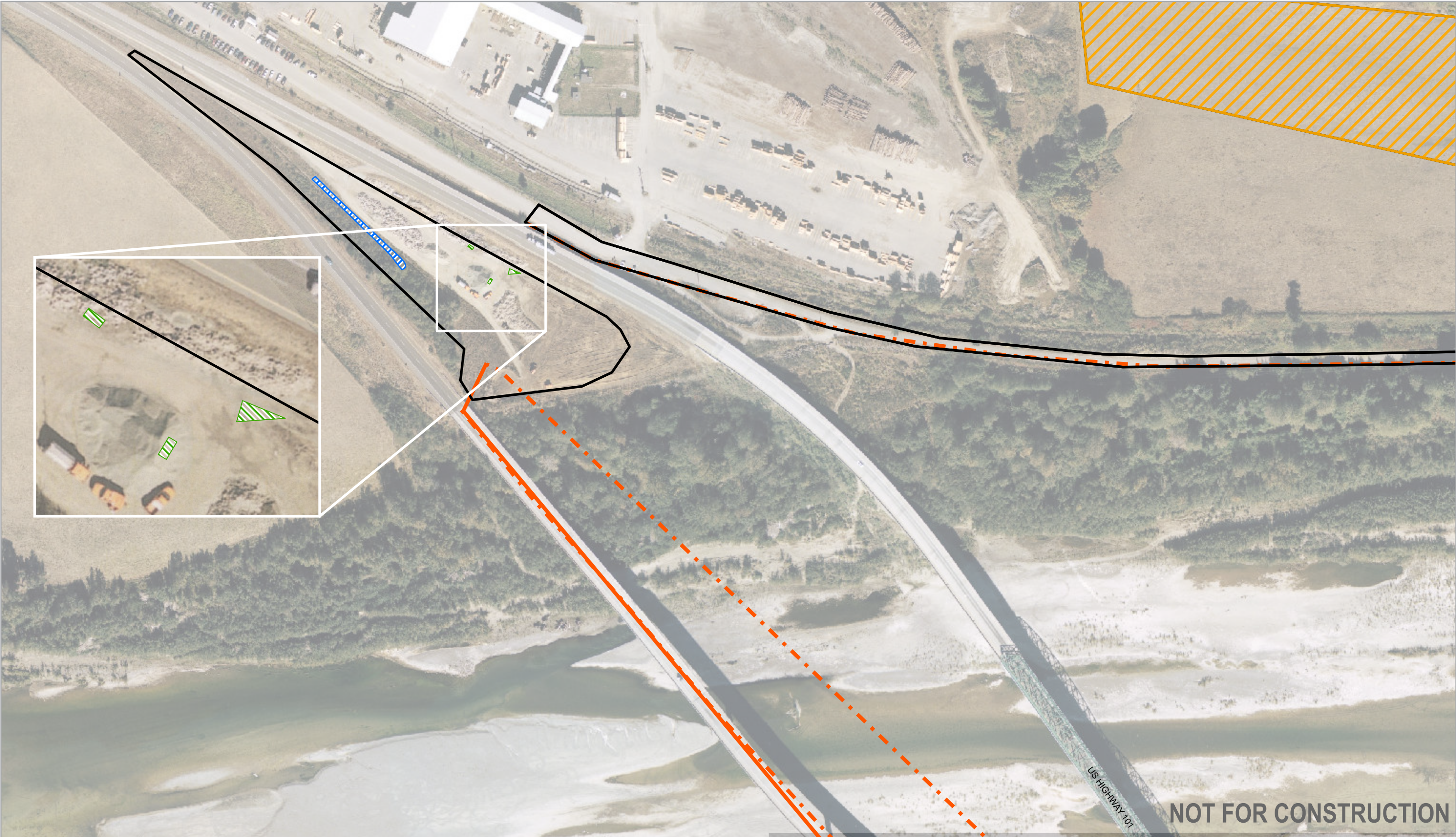
City of Rio Dell
Water Infrastructure Improvement
**Wetland Reconnaissance and
Sensitive Natural Communities Mapping**
Not a Product of a Formal Wetland Delineation

Project No. 11121530
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Date 3/12/2020

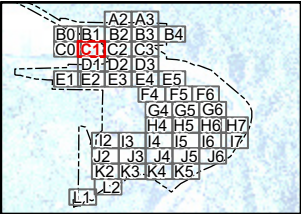
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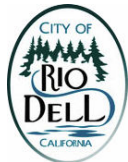
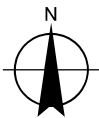
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- Legend
- Possible Wetland
 - Probable Wetland
 - Red Alder Forest Alliance
 - Proposed New Hydrant
 - Hydrant Replacement
 - Valve Replacement
 - Proposed Pipe to be Replaced
 - Proposed New Pipe
 - Project Study Boundary (PSB)
 - No Survey Access
 - City Limits



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Feet



City of Rio Dell
Water Infrastructure Improvement

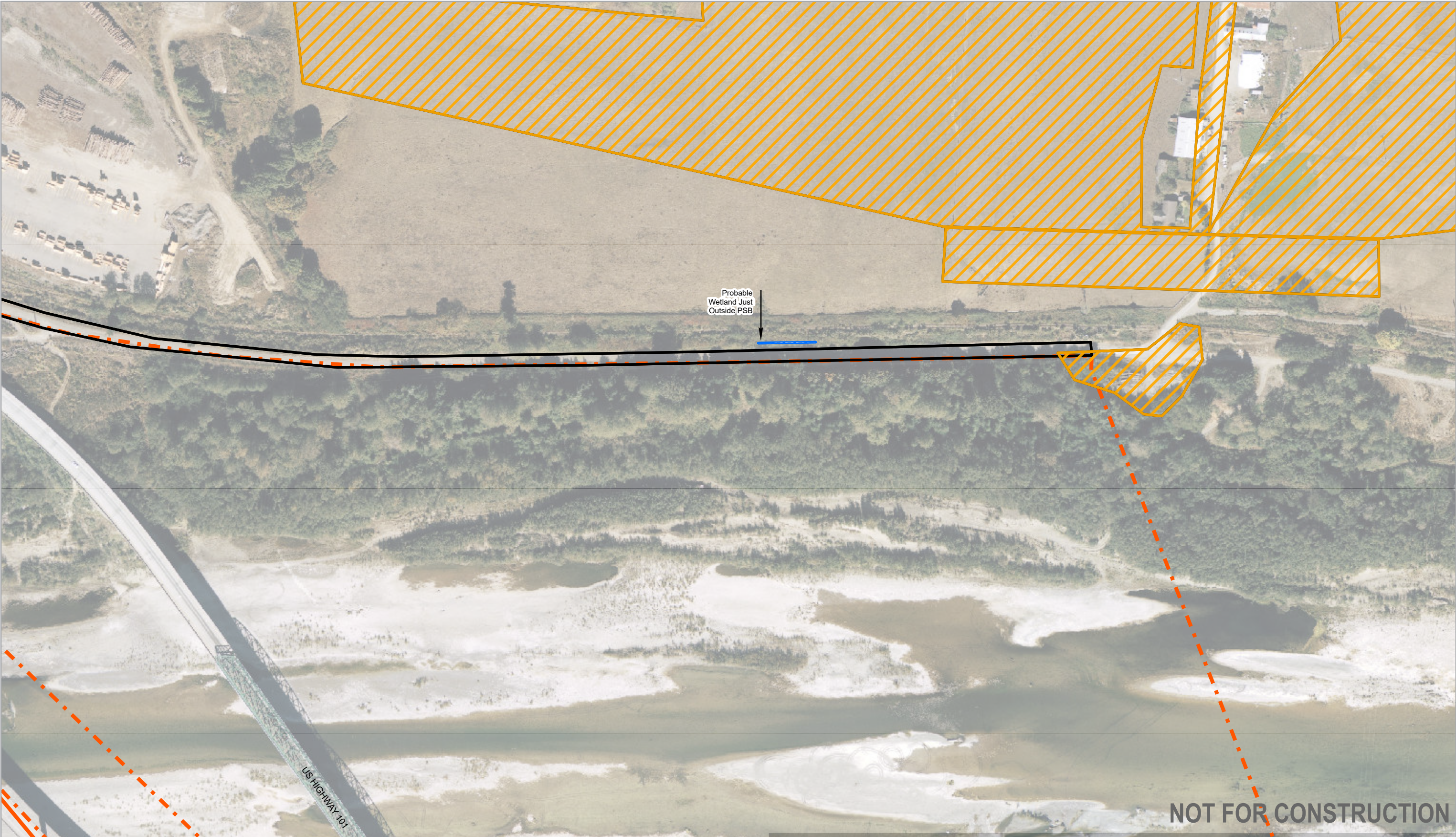
**Wetland Reconnaissance and
Sensitive Natural Communities Mapping**
Not a Product of a Formal Wetland Delineation

Project No. 11121530
Revision No. -
Date 3/12/2020

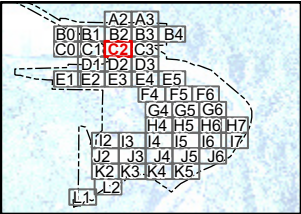
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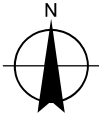
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- Legend
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|--|---------------------------|--|------------------------------|--|------------------------------|
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| | Probable Wetland | | Valve Replacement | | Project Study Boundary (PSB) |
| | Red Alder Forest Alliance | | Proposed Pipe to be Replaced | | No Survey Access |
| | Proposed New Hydrant | | | | City Limits |



Paper Size ANSI B
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Feet



City of Rio Dell
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**Wetland Reconnaissance and
Sensitive Natural Communities Mapping**
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Revision No. -
Date 3/12/2020

FIGURE C2

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Legend

Possible Wetland

Probable Wetland

Red Alder Forest Alliance

Proposed New Hydrant

Hydrant Replacement

Valve Replacement

Proposed Pipe to be Replaced

Proposed New Pipe

Project Study Boundary (PSB)

No Survey Access

City Limits

Paper Size ANSI B

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Feet

City of Rio Dell
Water Infrastructure Improvement

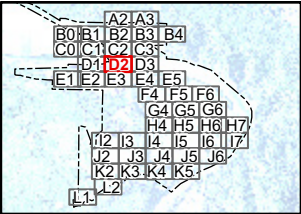
Wetland Reconnaissance and Sensitive Natural Communities Mapping
Not a Product of a Formal Wetland Delineation

Project No. 11121530
Revision No. -
Date 3/12/2020

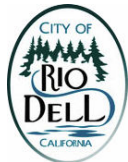
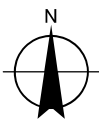
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- Legend
- Possible Wetland
 - Probable Wetland
 - Red Alder Forest Alliance
 - Proposed New Hydrant
 - Hydrant Replacement
 - Valve Replacement
 - Proposed Pipe to be Replaced
 - Proposed New Pipe
 - Project Study Boundary (PSB)
 - No Survey Access
 - City Limits



Paper Size ANSI B
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Feet



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**Wetland Reconnaissance and
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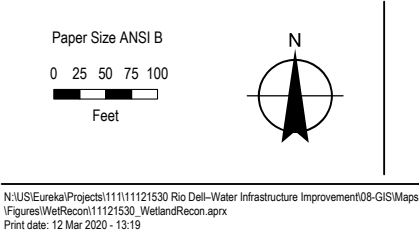
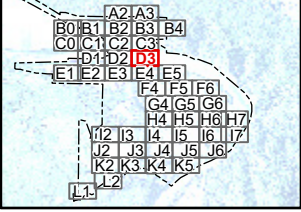
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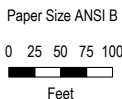
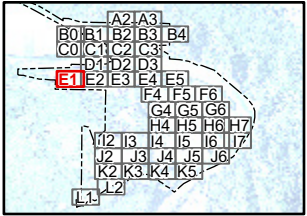


- Legend
- Possible Wetland
 - Probable Wetland
 - Red Alder Forest Alliance
 - Proposed New Hydrant
 - Hydrant Replacement
 - Valve Replacement
 - Proposed Pipe to be Replaced
 - Proposed New Pipe
 - Project Study Boundary (PSB)
 - No Survey Access
 - City Limits





- Legend
- | | | |
|---|--|--|
|  Possible Wetland |  Hydrant Replacement |  Proposed New Pipe |
|  Probable Wetland |  Valve Replacement |  Project Study Boundary (PSB) |
|  Red Alder Forest Alliance |  Proposed Pipe to be Replaced |  No Survey Access |
|  Proposed New Hydrant | |  City Limits |



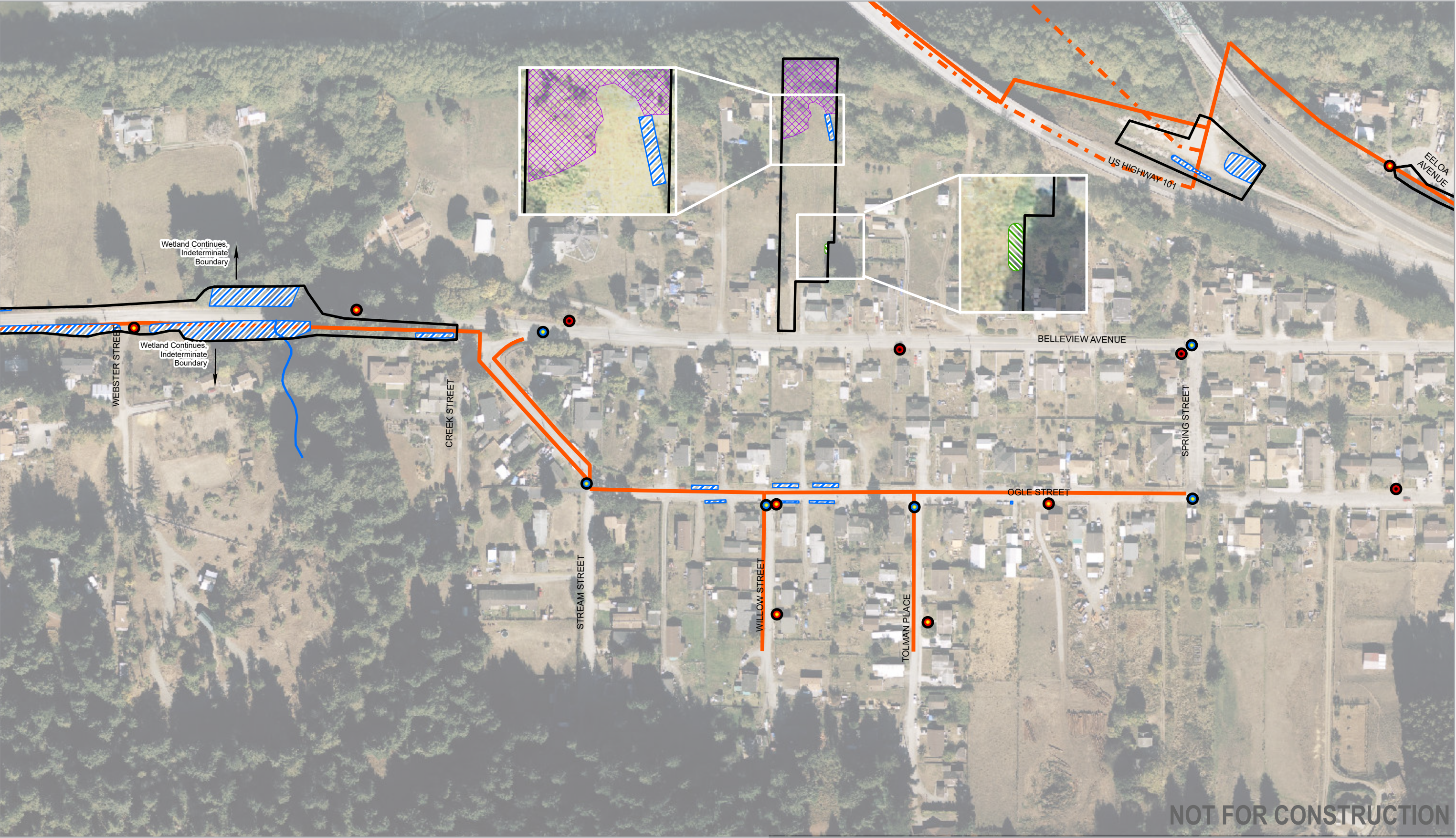
City of Rio Dell
Water Infrastructure Improvement

**Wetland Reconnaissance and
Sensitive Natural Communities Mapping**
Not a Product of a Formal Wetland Delineation

Project No. 11121530
Revision No. -
Date 3/12/2020

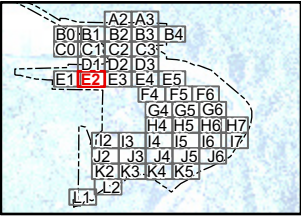
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- Legend

 - Possible Wetland
 - Probable Wetland
 - Red Alder Forest Alliance
 - Proposed New Hydrant
 - Hydrant Replacement
 - Valve Replacement
 - Proposed New Pipe
 - Proposed Pipe to be Replaced
- Project Study Boundary (PSB)
 - No Survey Access
 - City Limits



Paper Size ANSI B

0 25 50 75 100 Feet

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Wetland Reconnaissance and Sensitive Natural Communities Mapping
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Revision No. -
Date 3/12/2020

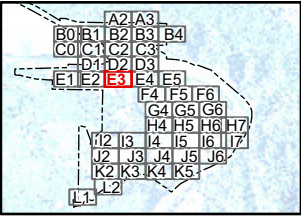
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Print date: 12 Mar 2020 - 15:50



- Legend

 - Possible Wetland
 - Probable Wetland
 - Red Alder Forest Alliance
 - Proposed New Hydrant
 - Hydrant Replacement
 - Valve Replacement
 - Proposed New Pipe
 - Proposed Pipe to be Replaced
 - Project Study Boundary (PSB)
 - No Survey Access
 - City Limits



Paper Size ANSI B

0 25 50 75 100

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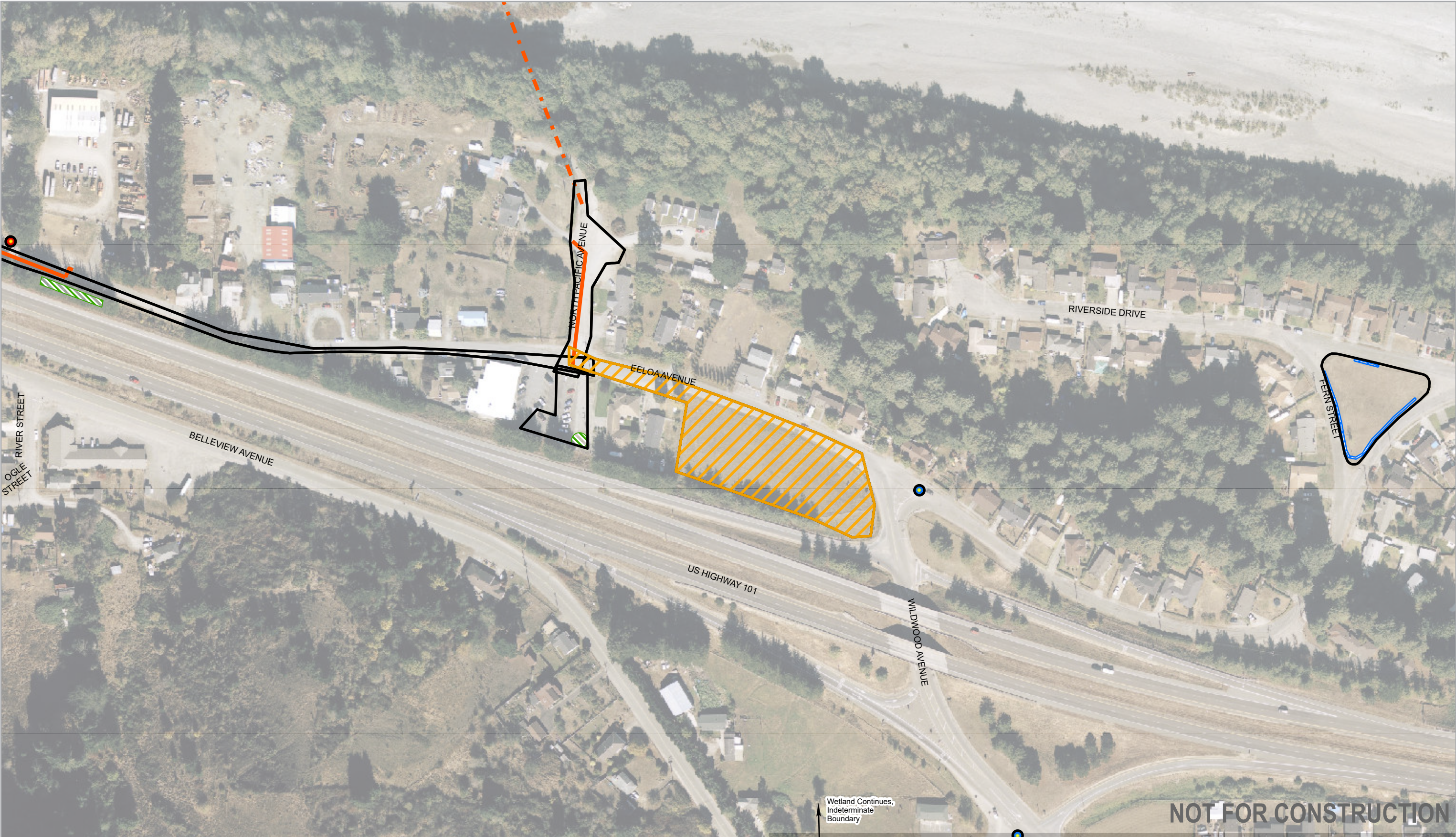


City of Rio Dell
Water Infrastructure Improvement


**Wetland Reconnaissance and
Sensitive Natural Communities Mapping**
Not a Product of a Formal Wetland Delineation


Project No. 11121530
Revision No. -
Date 3/12/2020


FIGURE E3
Data source: . Created by: emorata





Legend


 Possible Wetland


 Probable Wetland


 Red Alder Forest Alliance


 Proposed New Hydrant


 Hydrant Replacement


 Valve Replacement

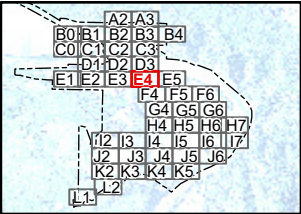
 Proposed Pipe to be Replaced

 Proposed New Pipe

 Project Study Boundary (PSB)

 No Survey Access

 City Limits



Paper Size ANSI B

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Feet





City of Rio Dell
Water Infrastructure Improvement

**Wetland Reconnaissance and
Sensitive Natural Communities Mapping**
Not a Product of a Formal Wetland Delineation

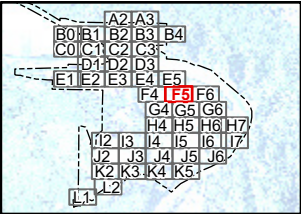
Project No. 11121530
Revision No. -
Date 3/12/2020

FIGURE E4
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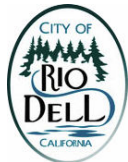
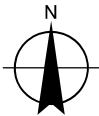
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Print date: 12 Mar 2020 - 13:19



- Legend
- Possible Wetland
 - Probable Wetland
 - Red Alder Forest Alliance
 - Proposed New Hydrant
 - Hydrant Replacement
 - Valve Replacement
 - Proposed Pipe to be Replaced
 - Proposed New Pipe
 - Project Study Boundary (PSB)
 - No Survey Access
 - City Limits



Paper Size ANSI B
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City of Rio Dell
Water Infrastructure Improvement
Wetland Reconnaissance and Sensitive Natural Communities Mapping
Not a Product of a Formal Wetland Delineation

Project No. 11121530
Revision No. -
Date 3/12/2020

FIGURE F5

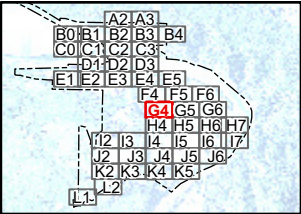
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Print date: 12 Mar 2020 - 13:20



- Legend

 - Possible Wetland
 - Probable Wetland
 - Red Alder Forest Alliance
 - Proposed New Hydrant
- Hydrant Replacement
 - Valve Replacement
 - Proposed Pipe to be Replaced
- Proposed New Pipe
 - Project Study Boundary (PSB)
 - No Survey Access
 - City Limits



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Feet

City of Rio Dell
Water Infrastructure Improvement

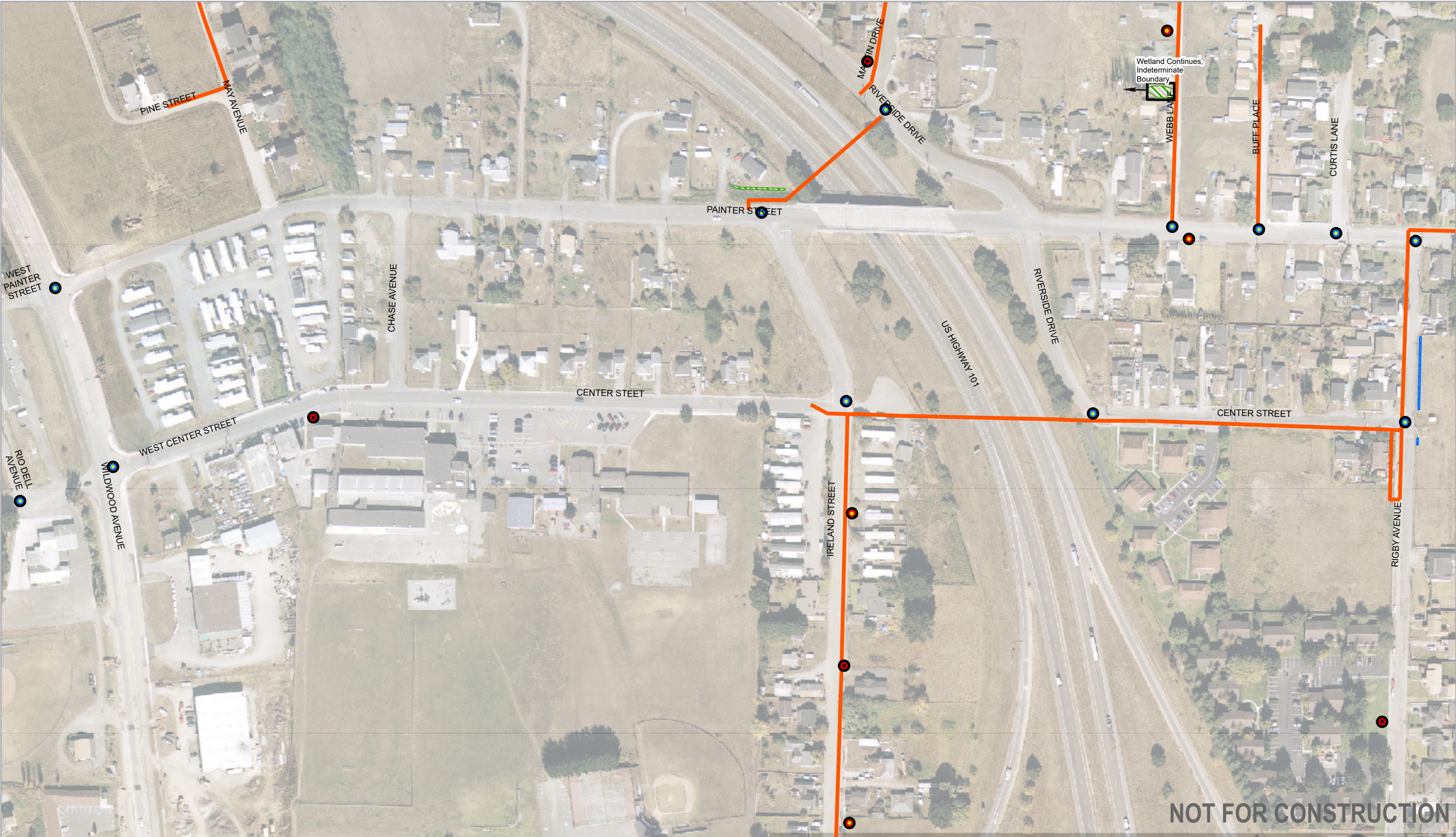
Project No. 11121530
Revision No. -
Date 3/12/2020

Wetland Reconnaissance and Sensitive Natural Communities Mapping
Not a Product of a Formal Wetland Delineation

FIGURE G4

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Legend

Possible Wetland

Probable Wetland

Red Alder Forest Alliance

Proposed New Hydrant

Hydrant Replacement

Valve Replacement

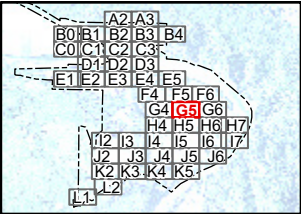
Proposed Pipe to be Replaced

Proposed New Pipe

Project Study Boundary (PSB)

No Survey Access

City Limits



Paper Size ANSI B

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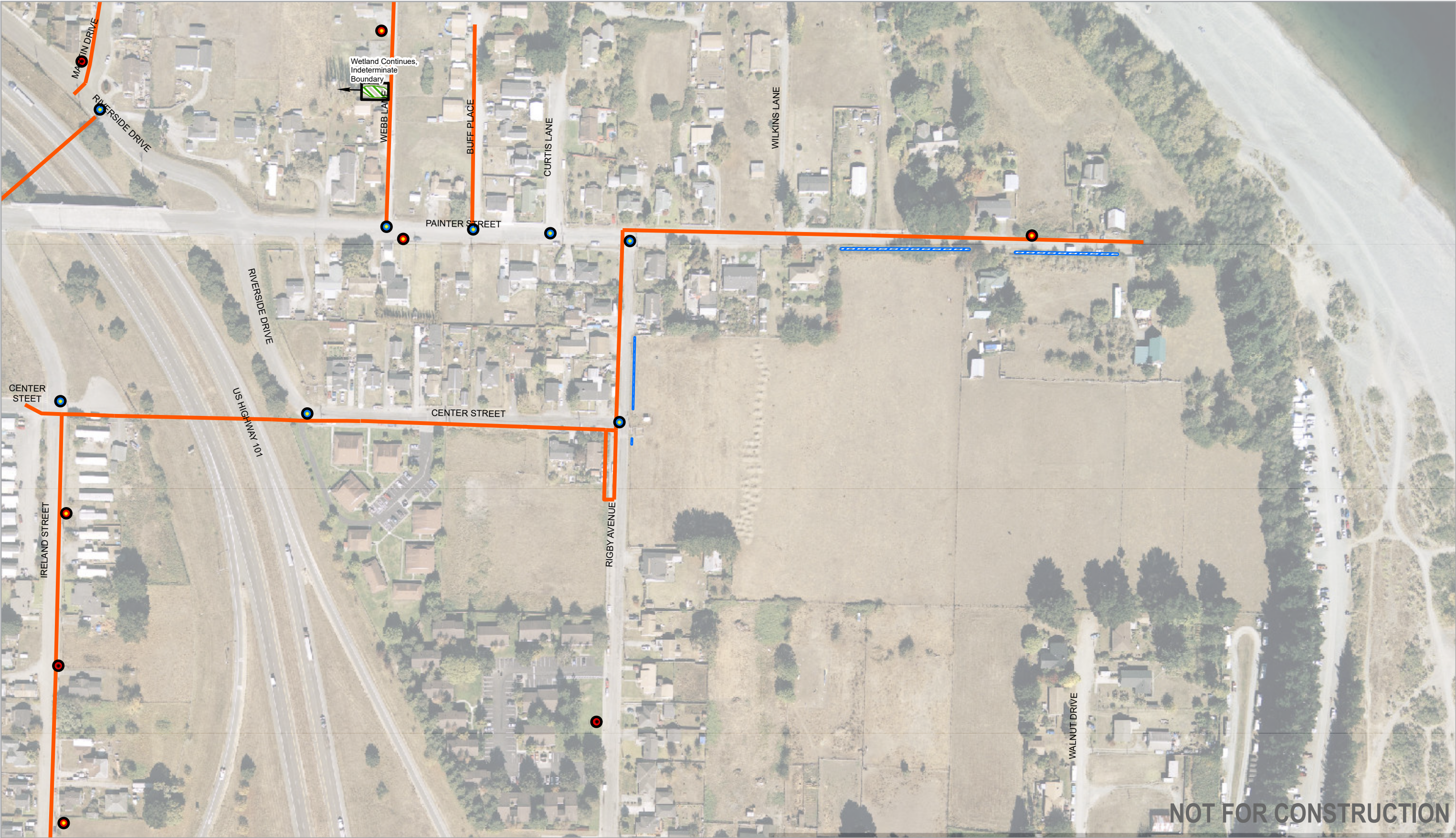


City of Rio Dell
Water Infrastructure Improvement

**Wetland Reconnaissance and
Sensitive Natural Communities Mapping**
Not a Product of a Formal Wetland Delineation

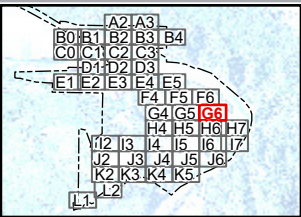
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Revision No. -
Date 3/12/2020

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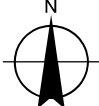


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- Legend
- Possible Wetland
 - Probable Wetland
 - Red Alder Forest Alliance
 - Proposed New Hydrant
 - Hydrant Replacement
 - Valve Replacement
 - Proposed Pipe to be Replaced
 - Proposed New Pipe
 - Project Study Boundary (PSB)
 - No Survey Access
 - City Limits



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City of Rio Dell
Water Infrastructure Improvement
Wetland Reconnaissance and Sensitive Natural Communities Mapping
Not a Product of a Formal Wetland Delineation

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FIGURE G6

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Print date: 12 Mar 2020 - 13:20



Legend

Possible Wetland

Probable Wetland

Red Alder Forest Alliance

Proposed New Hydrant

Hydrant Replacement

Valve Replacement

Proposed Pipe to be Replaced

Proposed New Pipe

Project Study Boundary (PSB)

No Survey Access

City Limits

Paper Size ANSI B

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City of Rio Dell

Water Infrastructure Improvement

Wetland Reconnaissance and Sensitive Natural Communities Mapping

Not a Product of a Formal Wetland Delineation

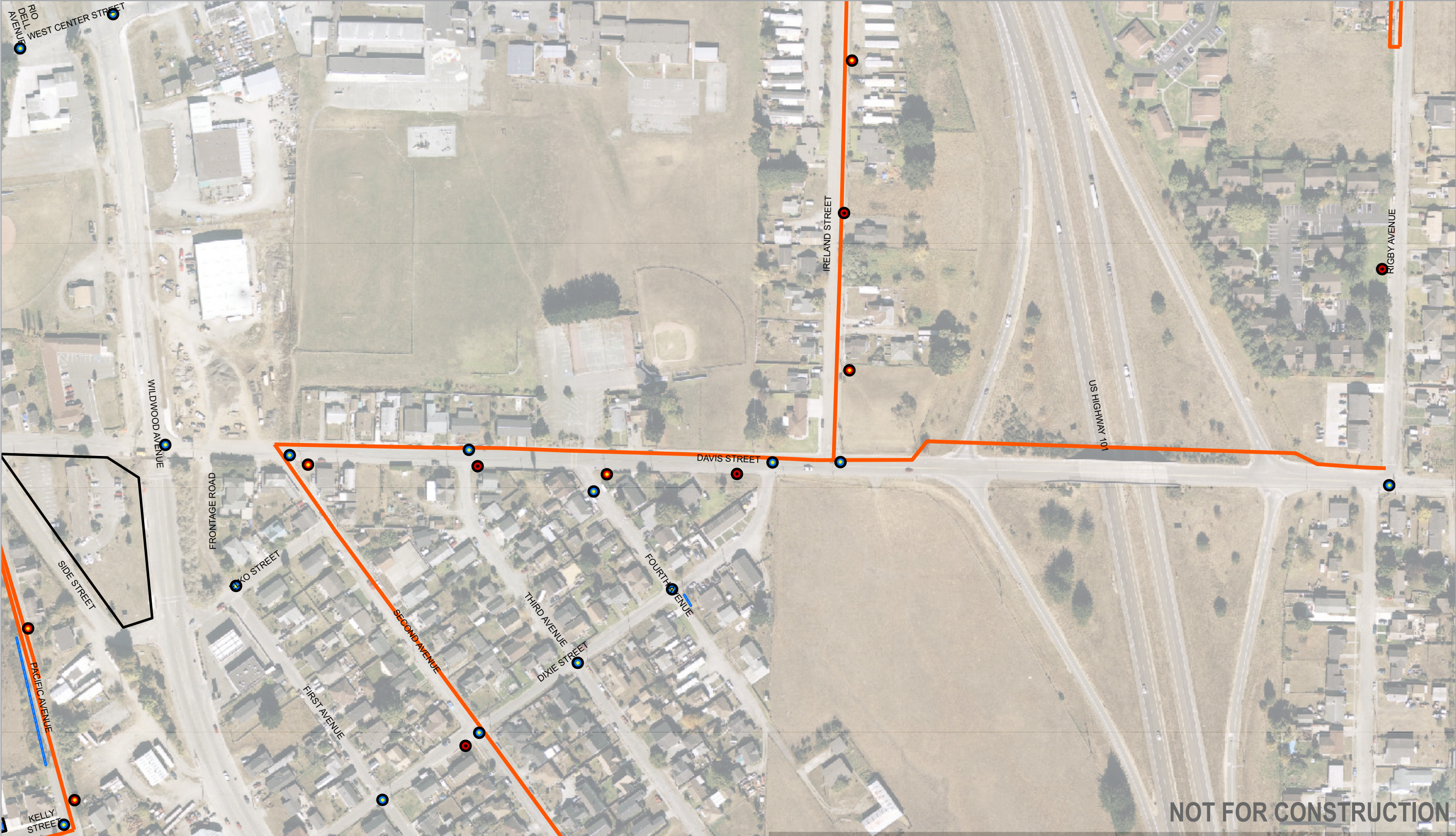
Project No. 11121530

Revision No. -

Date 3/12/2020

FIGURE H4

Data source: . Created by: emorata



Legend

Possible Wetland

Probable Wetland

Red Alder Forest Alliance

Proposed New Hydrant

Hydrant Replacement

Valve Replacement

Proposed Pipe to be Replaced

Proposed New Pipe

Project Study Boundary (PSB)

No Survey Access

City Limits

Paper Size ANSI B

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City of Rio Dell
Water Infrastructure Improvement

**Wetland Reconnaissance and
Sensitive Natural Communities Mapping**
Not a Product of a Formal Wetland Delineation

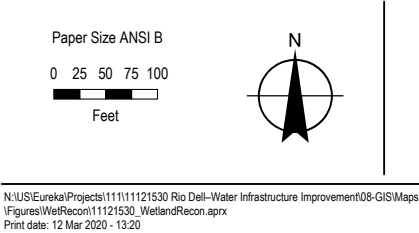
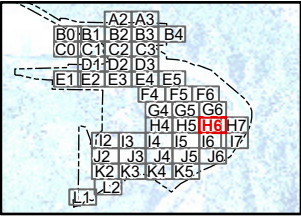
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Revision No. -
Date 3/12/2020

FIGURE H5
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|--|---------------------------|--|------------------------------|--|------------------------------|
| | Possible Wetland | | Hydrant Replacement | | Proposed New Pipe |
| | Probable Wetland | | Valve Replacement | | Project Study Boundary (PSB) |
| | Red Alder Forest Alliance | | Proposed Pipe to be Replaced | | No Survey Access |
| | Proposed New Hydrant | | | | City Limits |





Legend

Possible Wetland

Probable Wetland

Red Alder Forest Alliance

Proposed New Hydrant

Hydrant Replacement

Valve Replacement

Proposed Pipe to be Replaced

Proposed New Pipe

Project Study Boundary (PSB)

No Survey Access

City Limits

Paper Size ANSI B

0 25 50 75 100

Feet

City of Rio Dell
Water Infrastructure Improvement

**Wetland Reconnaissance and
Sensitive Natural Communities Mapping**
Not a Product of a Formal Wetland Delineation

Project No. 11121530
Revision No. -
Date 3/12/2020

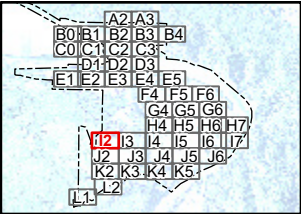
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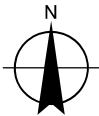
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|--|---------------------------|--|------------------------------|--|------------------------------|
| | Possible Wetland | | Hydrant Replacement | | Proposed New Pipe |
| | Probable Wetland | | Valve Replacement | | Project Study Boundary (PSB) |
| | Red Alder Forest Alliance | | Proposed Pipe to be Replaced | | No Survey Access |
| | Proposed New Hydrant | | | | City Limits |



Paper Size ANSI B
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City of Rio Dell
Water Infrastructure Improvement

**Wetland Reconnaissance and
Sensitive Natural Communities Mapping**
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Project No. 11121530
Revision No. -
Date 3/12/2020

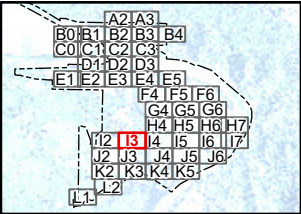
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|---|---------------------------|---|------------------------------|---|------------------------------|
|  | Possible Wetland |  | Hydrant Replacement |  | Proposed New Pipe |
|  | Probable Wetland |  | Valve Replacement |  | Project Study Boundary (PSB) |
|  | Red Alder Forest Alliance |  | Proposed Pipe to be Replaced |  | No Survey Access |
|  | Proposed New Hydrant | | |  | City Limits |



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City of Rio Dell
Water Infrastructure Improvement

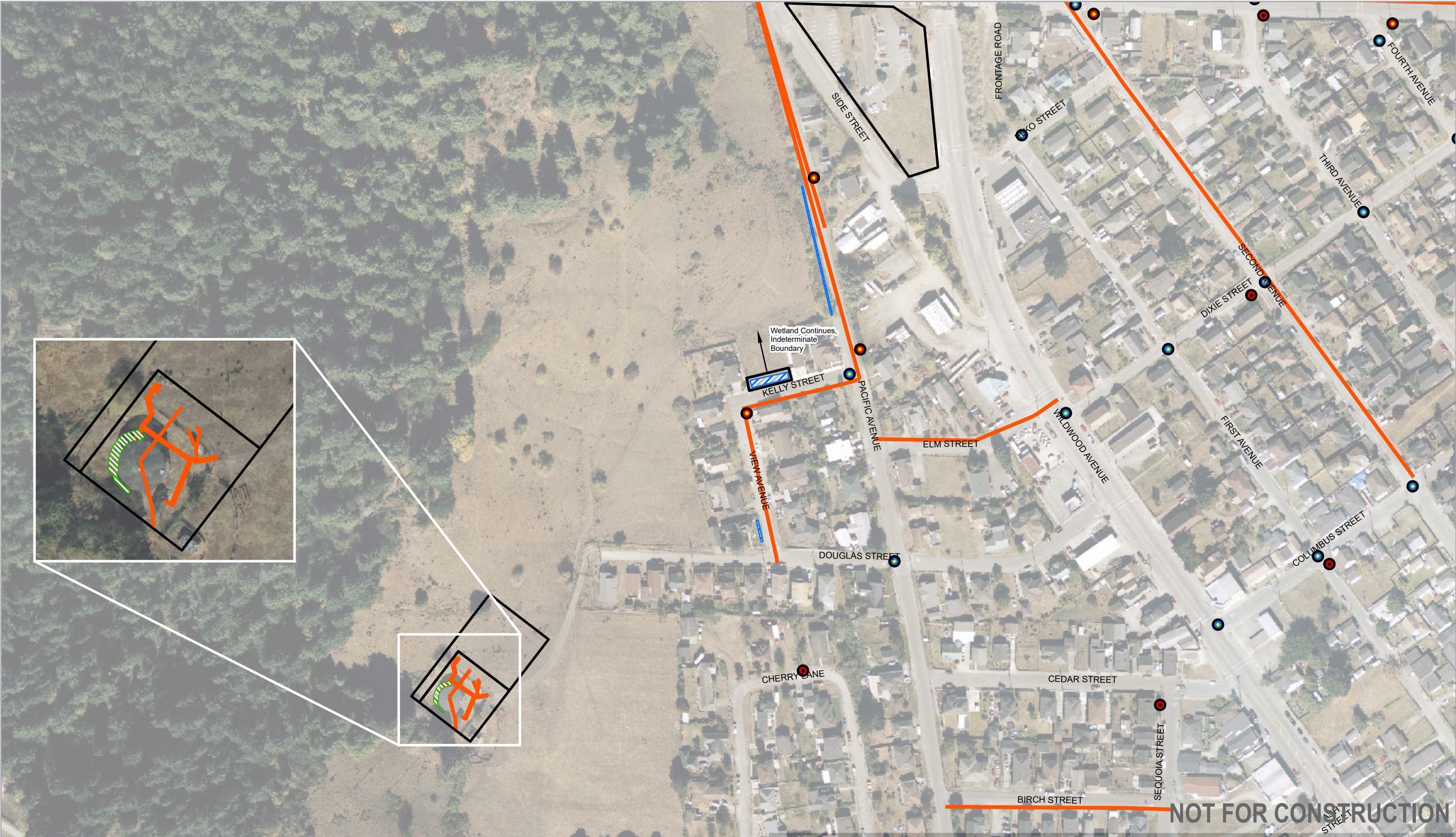
**Wetland Reconnaissance and
Sensitive Natural Communities Mapping**
Not a Product of a Formal Wetland Delineation

Project No. 11121530
Revision No. -
Date 3/12/2020

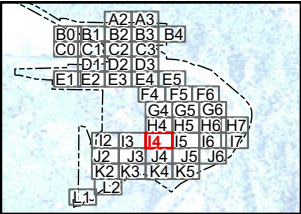
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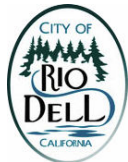
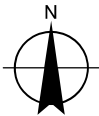
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- Legend
- Possible Wetland
 - Probable Wetland
 - Red Alder Forest Alliance
 - Proposed New Hydrant
 - Hydrant Replacement
 - Valve Replacement
 - Proposed Pipe to be Replaced
 - Proposed New Pipe
 - Project Study Boundary (PSB)
 - No Survey Access
 - City Limits



Paper Size ANSI B
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City of Rio Dell
Water Infrastructure Improvement
Wetland Reconnaissance and Sensitive Natural Communities Mapping
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Project No. 11121530
Revision No. -
Date 3/12/2020

FIGURE I4

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Legend

Possible Wetland

Probable Wetland

Red Alder Forest Alliance

Proposed New Hydrant

Hydrant Replacement

Valve Replacement

Proposed Pipe to be Replaced

Proposed New Pipe

Project Study Boundary (PSB)

No Survey Access

City Limits

Paper Size ANSI B

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City of Rio Dell

Water Infrastructure Improvement

Project No. 11121530

Revision No. -

Date 3/12/2020

Wetland Reconnaissance and Sensitive Natural Communities Mapping

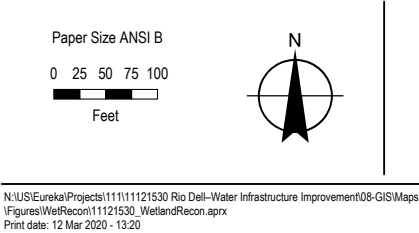
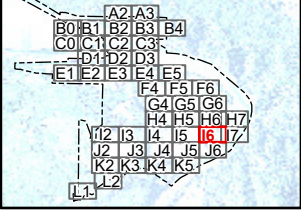
Not a Product of a Formal Wetland Delineation

FIGURE I5

Delta source: . Created by: emorata



- Legend
- Possible Wetland
 - Probable Wetland
 - Red Alder Forest Alliance
 - Proposed New Hydrant
 - Hydrant Replacement
 - Valve Replacement
 - Proposed Pipe to be Replaced
 - Proposed New Pipe
 - Project Study Boundary (PSB)
 - No Survey Access
 - City Limits



City of Rio Dell
Water Infrastructure Improvement

Wetland Reconnaissance and Sensitive Natural Communities Mapping
Not a Product of a Formal Wetland Delineation

Project No. 11121530
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Date 3/12/2020

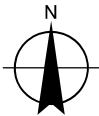
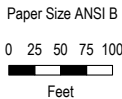
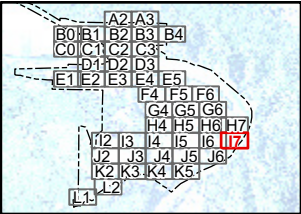
FIGURE I6

Data source: . Created by: emorata



- Legend**

 - Possible Wetland
 - Probable Wetland
 - Red Alder Forest Alliance
 - Proposed New Hydrant
- Hydrant Replacement
 - Valve Replacement
 - Proposed New Pipe
 - Project Study Boundary (PSB)
 - No Survey Access
 - City Limits
- Proposed Pipe to be Replaced



City of Rio Dell
Water Infrastructure Improvement

**Wetland Reconnaissance and
Sensitive Natural Communities Mapping**
Not a Product of a Formal Wetland Delineation

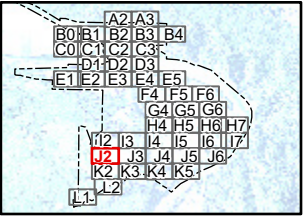
Project No. 11121530
Revision No. -
Date 3/12/2020

FIGURE 17

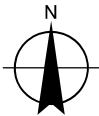
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- Legend
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|--|---------------------------|--|------------------------------|--|------------------------------|
| | Possible Wetland | | Hydrant Replacement | | Proposed New Pipe |
| | Probable Wetland | | Valve Replacement | | Project Study Boundary (PSB) |
| | Red Alder Forest Alliance | | Proposed Pipe to be Replaced | | No Survey Access |
| | Proposed New Hydrant | | | | City Limits |



Paper Size ANSI B
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Feet



City of Rio Dell
Water Infrastructure Improvement

**Wetland Reconnaissance and
Sensitive Natural Communities Mapping**
Not a Product of a Formal Wetland Delineation

Project No. 11121530
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Date 3/12/2020

FIGURE J2

Data source: . Created by: emorata

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Legend

Possible Wetland

Probable Wetland

Red Alder Forest Alliance

Proposed New Hydrant

Hydrant Replacement

Valve Replacement

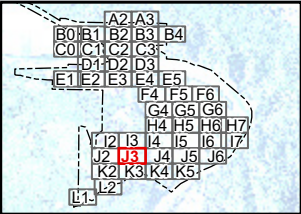
Proposed Pipe to be Replaced

Proposed New Pipe

Project Study Boundary (PSB)

No Survey Access

City Limits



Paper Size ANSI B

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Feet

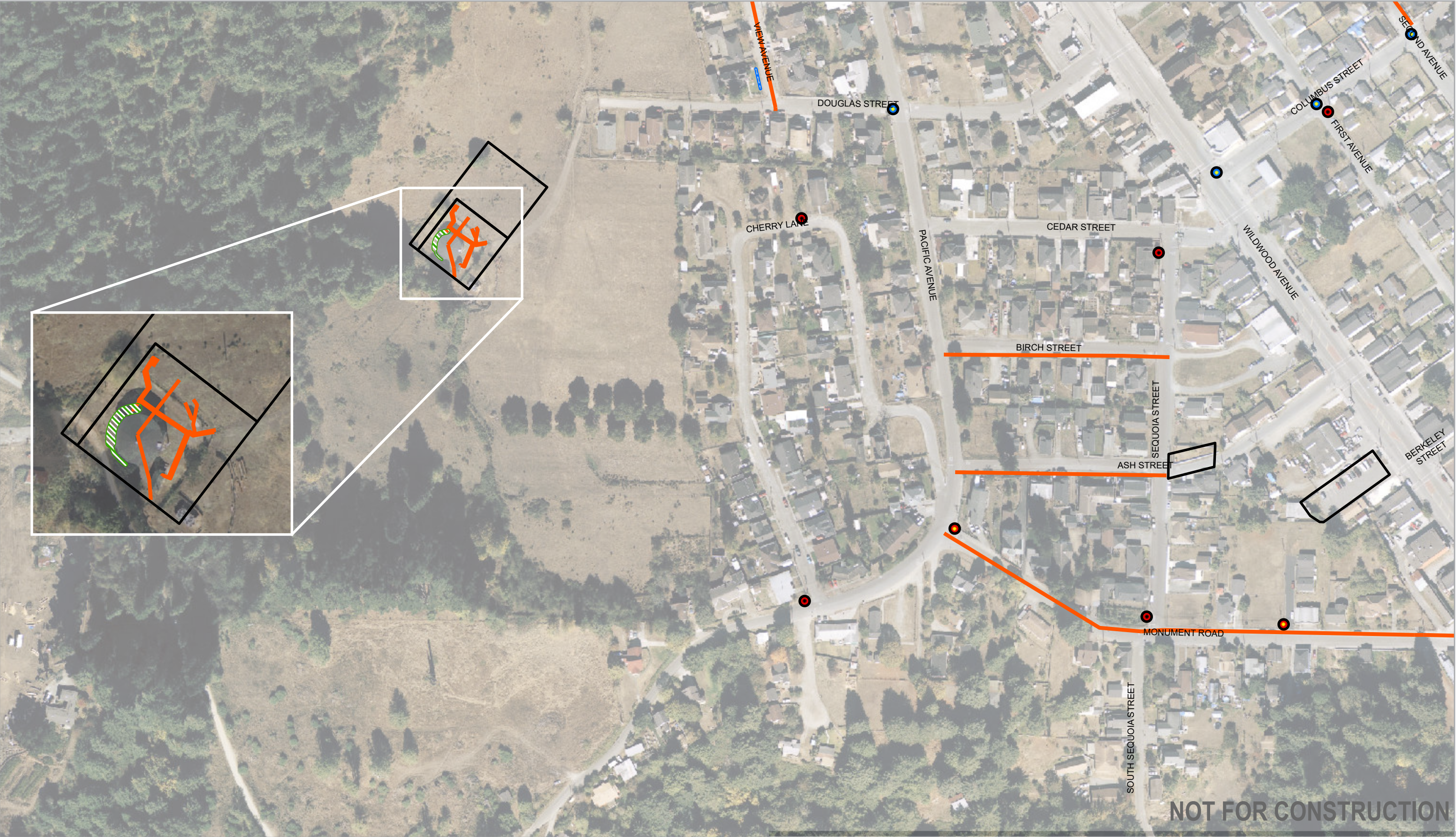
City of Rio Dell
Water Infrastructure Improvement

**Wetland Reconnaissance and
Sensitive Natural Communities Mapping**
Not a Product of a Formal Wetland Delineation

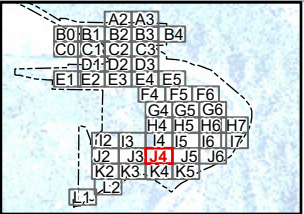
Project No. 11121530
Revision No. -
Date 3/12/2020

FIGURE J3
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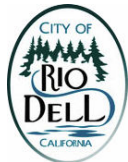
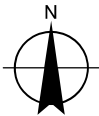
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- Legend
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|--|---------------------------|--|------------------------------|--|------------------------------|
| | Possible Wetland | | Hydrant Replacement | | Proposed New Pipe |
| | Probable Wetland | | Valve Replacement | | Project Study Boundary (PSB) |
| | Red Alder Forest Alliance | | Proposed Pipe to be Replaced | | No Survey Access |
| | Proposed New Hydrant | | | | City Limits |



Paper Size ANSI B
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City of Rio Dell
Water Infrastructure Improvement

Wetland Reconnaissance and Sensitive Natural Communities Mapping
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Project No. 11121530
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FIGURE J4

Data source: . Created by: emorata



Legend

Possible Wetland

Probable Wetland

Red Alder Forest Alliance

Proposed New Hydrant

Hydrant Replacement

Valve Replacement

Proposed Pipe to be Replaced

Proposed New Pipe

Project Study Boundary (PSB)

No Survey Access

City Limits

Paper Size ANSI B

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City of Rio Dell

Water Infrastructure Improvement

Project No. 11121530

Revision No. -

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Wetland Reconnaissance and Sensitive Natural Communities Mapping

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FIGURE J5

Delta source: . Created by: emorata



Legend

Possible Wetland

Probable Wetland

Red Alder Forest Alliance

Proposed New Hydrant

Hydrant Replacement

Valve Replacement

Proposed Pipe to be Replaced

Proposed New Pipe

Project Study Boundary (PSB)

No Survey Access

City Limits

Paper Size ANSI B

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Feet

City of Rio Dell
Water Infrastructure Improvement

Wetland Reconnaissance and Sensitive Natural Communities Mapping
Not a Product of a Formal Wetland Delineation

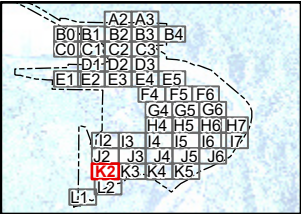
Project No. 11121530
Revision No. -
Date 3/12/2020

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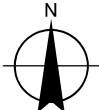
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Print date: 12 Mar 2020 - 13:21



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|--|---------------------------|--|------------------------------|--|------------------------------|
| | Possible Wetland | | Hydrant Replacement | | Proposed New Pipe |
| | Probable Wetland | | Valve Replacement | | Project Study Boundary (PSB) |
| | Red Alder Forest Alliance | | Proposed Pipe to be Replaced | | No Survey Access |
| | Proposed New Hydrant | | | | City Limits |



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City of Rio Dell
Water Infrastructure Improvement

**Wetland Reconnaissance and
Sensitive Natural Communities Mapping**
Not a Product of a Formal Wetland Delineation

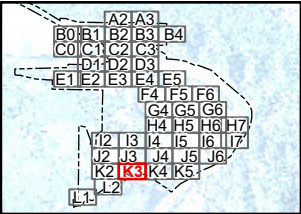
Project No. 11121530
Revision No. -
Date 3/12/2020

FIGURE K2
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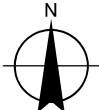
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- Legend
- | | | | | | |
|--|---------------------------|--|------------------------------|--|------------------------------|
| | Possible Wetland | | Hydrant Replacement | | Proposed New Pipe |
| | Probable Wetland | | Valve Replacement | | Project Study Boundary (PSB) |
| | Red Alder Forest Alliance | | Proposed Pipe to be Replaced | | No Survey Access |
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City of Rio Dell
Water Infrastructure Improvement

**Wetland Reconnaissance and
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Date 3/12/2020


FIGURE K3


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Figures\WetRecon\11121530_WetlandRecon.aprx
Print date: 12 Mar 2020 - 13:21





Legend


 Possible Wetland


 Probable Wetland


 Red Alder Forest Alliance


 Proposed New Hydrant


 Hydrant Replacement


 Valve Replacement

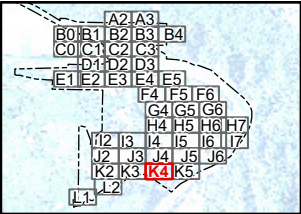
 Proposed Pipe to be Replaced

 Proposed New Pipe

 Project Study Boundary (PSB)

 No Survey Access

 City Limits



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Feet





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Figures\WetRecon\11121530_WetlandRecon.aprx
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City of Rio Dell
Water Infrastructure Improvement

**Wetland Reconnaissance and
Sensitive Natural Communities Mapping**
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Date 3/12/2020

FIGURE K4
Data source: . Created by: emorata



Legend

Possible Wetland

Probable Wetland

Red Alder Forest Alliance

Proposed New Hydrant

Hydrant Replacement

Valve Replacement

Proposed Pipe to be Replaced

Proposed New Pipe

Project Study Boundary (PSB)

No Survey Access

City Limits

Paper Size ANSI B

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Water Infrastructure Improvement

Wetland Reconnaissance and Sensitive Natural Communities Mapping

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Project No. 11121530

Revision No. -

Date 3/12/2020

FIGURE K5

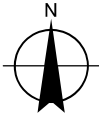
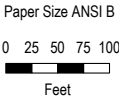
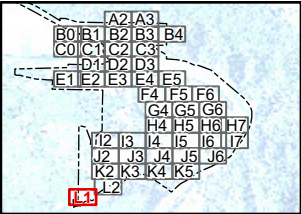
Data source: . Created by: emorata



NOT FOR CONSTRUCTION

- Legend

 - Possible Wetland
 - Probable Wetland
 - Red Alder Forest Alliance
 - Proposed New Hydrant
 - Hydrant Replacement
 - Valve Replacement
 - Proposed Pipe to be Replaced
 - Proposed New Pipe
 - Project Study Boundary (PSB)
 - No Survey Access
 - City Limits



City of Rio Dell
Water Infrastructure Improvement

Wetland Reconnaissance and Sensitive Natural Communities Mapping
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Project No. 11121530
Revision No. -
Date 3/12/2020

FIGURE L1

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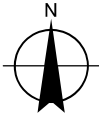
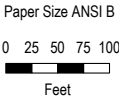
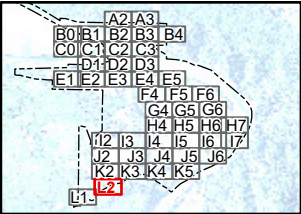
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Print date: 12 Mar 2020 - 13:21



NOT FOR CONSTRUCTION

- Legend

 - Possible Wetland
 - Probable Wetland
 - Red Alder Forest Alliance
 - Proposed New Hydrant
- Hydrant Replacement
 - Valve Replacement
 - Proposed Pipe to be Replaced
- Proposed New Pipe
 - Project Study Boundary (PSB)
 - No Survey Access
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FIGURE L2

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