

### Referral Agency Comments

Referral Agency	Response	Recommendation	On file
Environmental Health Division	✓	Approved	✓
Department of Public Works	✓	Approved	✓
Building Division		No Comment	
Loleta Fire Protection District		No Comment	
Regional Water Quality Control Board (RWQCB)		No Comment	
NWIC	✓	Consult with Tribes	✓
California Coastal Commission		No Comment	
CDFW		No Comment	
Bear River Band	✓	Conditional Approval	✓
Wiyot Tribe		No Comment	



DEPARTMENT OF PUBLIC WORKS  
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**Memorandum:**

**Public Trust Analysis and Groundwater Sustainability Plan Consistency Determination for  
Proposed Water Well**

Project: New Domestic Water Well for Assessor Parcel No. 309-071-020

Prepared by: Humboldt County Department of Public Works, serving as the Humboldt County  
Groundwater Sustainability Agency (GSA) Administrator

Date: July 11, 2023



**I. Introduction**

The purpose of this memorandum is to analyze potential impacts to public trust resources associated with a proposed groundwater well within the Eel River Valley groundwater basin and to evaluate whether the proposed project is consistent with the Eel River Valley Groundwater Sustainability Plan and common law public trust doctrine.

**II. Project Description**

Hansen Fernbridge Properties, LLC installed a water supply well<sup>1</sup> for domestic use on a residential parcel in November 2022 and submitted an application to the Humboldt County Building and Planning Department for a coastal development permit to authorize the new on-site well.

**Subject Property**

Address:	4337 Eel River Drive, Fortuna, CA, 95540
Assessor Parcel No.:	309-071-020
Approximate Elevation:	45-50 feet (NAVD88)
Geomorphic setting:	The site is situated along the margin of the Eel River alluvial valley on a terrace or hillslope outside the Eel River floodplain
Distance from nearest navigable water:	The proposed well is located approximately 1,000 feet from the Eel River.
Nearest County monitoring wells:	The site is located approximately 4,200 feet from MW-1 (on the opposite side of the Eel River)

<sup>1</sup> Well Completion Report Form DWR 188 (WCR2022-013460), submitted 11/15/2022.

### Proposed Well

Use of Water:	Domestic use for individual dwelling unit
Estimated Boring Depth:	120 feet below ground surface
Sanitary surface seal:	From surface grade to 20 feet below ground surface
Casing Diameter:	6 inches
Screened depth:	Not determined
Minimum Capacity:	720 gallons per day

### Estimated Water Use

Annual Consumption:	0.5 acre-feet per year
Average Daily Consumption:	450 gallons per day
Equivalent average flowrate:	0.3 gallons per minute

### III. Proposed Conditions of Approval

The Humboldt County GSA does not propose any Conditions of Approval.

### IV. Background

#### Water Rights

Landowners hold an overlying right to pump groundwater from underneath that land for reasonable and beneficial use. An overlying right is inherently attached to the land overlying a groundwater basin. A landowner's overlying right to utilize groundwater is of equal priority and correlative with the overlying rights of other landowners within the basin. Humboldt County does not allocate or administer water rights; however, a County permit is required to construct or replace a water well (described below). Water rights are subject to the overriding constitutional limitation of Article X, section 2 of the California Constitution which requires that "the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such water is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare."

#### Well Permitting

Humboldt County Code (Title VI, Division 3, Chapter 1, Section 631)<sup>2</sup> establishes requirements for construction, reconstruction, repair, and destruction of water wells, cathodic protection wells, and monitoring wells to protect the health, safety, and general welfare of the people of the State of California. These requirements are consistent with State of California well standards (Bulletin 74-81 and Bulletin 74-90) and apply county-wide. Applications for water well permits are administered through the Humboldt County Department of Health and Human Services, Division of Environmental Health (DEH).<sup>3</sup>

<sup>2</sup> <https://humboldt.county.codes/Code/631>

<sup>3</sup> <https://humboldt.gov/685/Land-Use-Program>

### Eel River Valley Groundwater Basin

The Eel River Valley Groundwater Basin ("Basin") encompasses the communities of Ferndale, Loleta, Fortuna, Carlotta, Hydesville, Alton, Metropolitan, Rio Dell, and Scotia. The Basin includes the alluvial valleys of the lower Eel River and Van Duzen River, upland terraces (primarily near Fortuna, Carlotta, and Hydesville), and lower portions of adjacent mountainous areas. The primary water-bearing units within the Basin are the alluvial aquifer and the underlying Carlotta Formation. The alluvial aquifer is most prominent within the central portions of the lower Eel River Valley, where the thickness is in excess of 260 feet, and extends up the Van Duzen River Valley, thinning from approximately 125 feet thick at the confluence with the Eel River to less than 40 feet in the vicinity of Carlotta.<sup>4</sup> The alluvial aquifer is generally in direct contact and hydraulic connection with the Eel and Van Duzen Rivers. The Carlotta Formation underlies the alluvial aquifer and most, if not all, of the Eel River Valley.

The Basin is a coastal basin with drainage to the ocean along approximately ten miles of coastline. The Basin encompasses the Eel River estuary. The tidally influenced reach of the Eel River extends approximately 12 miles upstream from the river mouth, a few miles upstream of Fernbridge. In addition to the lower reaches of the Eel River and its tributary the Van Duzen River, the Basin contains the lower reaches of several tributary streams including Salt River, Palmer Creek, Rohner Creek, and Yager Creek.

### Eel River

The Eel River is a navigable waterway. The U.S. Geological Survey maintains a stream gage at Fernbridge (stage only) in the lower portion of the Basin and at Scotia (stage and discharge) near the upstream end of the Basin. Flows are highest during the wet season (November through April) and drop significantly during the dry season, with the lowest flows typically in August and September.

### Groundwater-Surface Water Interactions

Groundwater (flowing in the alluvial aquifer) and surface water (flowing through the river channels of the Eel River, Van Duzen River, and certain tributaries) are interconnected through the hydrologic cycle. Groundwater and surface water interactions are complex and highly variable over space and time.<sup>5</sup> Efforts to understand the dynamics of groundwater-surface water interactions within the Basin are ongoing. In addition to the work performed to prepare the Groundwater Sustainability Plan (described below), the County continues to collect monitoring data and has applied for funding to perform more detailed data collection and analysis.

The subject property is located along the right bank of the Eel River on the opposite side of the river from the alluvial valley. In the vicinity of the subject property, the prevailing direction of groundwater flow is likely down-slope (flowing from north to south) toward the river. Therefore, the well is unlikely to draw water from the river or induce infiltration. The well may result in a small reduction in discharge from the inflowing groundwater into the river. However, this effect is most likely negligible because the adjacent segment of the Eel River is tidally influenced and tidal effects will be the dominating factor for influencing baseflows during the dry season. This interpretation is supported by groundwater measurements collected in County monitoring well MW-1 where tidal effects are detected during the dry season.

### Groundwater Sustainability Plan

The Sustainable Groundwater Management Act (SGMA), passed and signed in 2014, required preparation of Groundwater Sustainability Plans (GSPs) in basins designated as medium- and high-priority by DWR within specified deadlines. The Eel River Valley Groundwater Basin is designated as medium-priority by DWR. In 2020, Humboldt County received a grant from DWR to conduct technical studies, perform stakeholder outreach, and prepare a GSP for the Basin. On January 25, 2022, the Humboldt County Board

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<sup>4</sup> Hydrogeologic Conceptual Model for the Eel River Valley Basin (GHD, August 18, 2021)

<sup>5</sup> Preliminary Analysis of 2020/2021 Surface Water and Groundwater Interaction Studies – Eel River Valley Groundwater Basin (SHN, January 24, 2022)

of Supervisors adopted a GSP for the Basin<sup>6</sup> and authorized its submittal to DWR for review, which is expected to be completed in Summer 2023.

The fundamental goal of SGMA is to support beneficial uses of groundwater while avoiding undesirable results for six sustainability indicators: groundwater levels, groundwater storage, seawater intrusion, water quality, land subsidence, and beneficial uses of interconnected surface water. While SGMA is focused on groundwater conditions, surface waters are inherently involved because they are often hydrologically connected with groundwater. SGMA requires the establishment of sustainable management criteria for six sustainability indicators. Undesirable results occur when significant and unreasonable effects for any of the sustainability indicators are caused by groundwater conditions occurring throughout the basin. Sustainability indicators include adverse impacts to beneficial uses of interconnected surface waters (for example, the Eel River). Undesirable results are based on a quantitative description of the combination of minimum threshold exceedances that cause significant and unreasonable effects in the basin. Minimum thresholds quantify the conditions at representative monitoring sites that are used to define undesirable results. Measurable objectives are quantitative goals that reflect the basin's desired groundwater conditions.

The sustainability goal for the Basin is to maintain high-quality and abundant groundwater resources to support existing and long-term community needs without causing undesirable results. The average annual total groundwater use within the Basin from water year 2011 through 2020 was approximately 14,837 acre-feet. This total annual use included approximately 12,559 acre-feet for agricultural irrigation (85%), 1,733 acre-feet for municipal drinking water (12%), 414 acre-feet for domestic drinking water (3%), 98 acre-feet for cannabis (0.7%), and 34 acre-feet for commercial/industrial (0.2%).

An integrated groundwater-surface water computer model (hydrologic model) was created to simulate the movement of groundwater and surface water to support preparation of the GSP. The model was used to gain insight into hydrologic processes within the Basin, simulate potential future scenarios, analyze potential impacts, and support the creation of sustainable management criteria. To analyze potential impacts to interconnected surface water, the GSP focused on criteria for adult fish passage, which is one of the most sensitive indicators of surface water beneficial uses in the lower Eel and Van Duzen Rivers. The GSP incorporated published criteria for the minimum water depth required for passage of adult salmon. The GSP established a benchmark for potential impacts as a lowering in river stage (the height of water in the channel) by 0.1 feet during the time period for potential fish passage (September through November) due to cumulative groundwater pumping.

The GSP synthesized empirical data, stakeholder input, computer simulation results, and geological interpretation to establish a management framework for sustainably managing groundwater resources within the Basin for economic, social, and environmental benefits. A key determination made in the GSP is that the Basin is being managed sustainably and undesirable results caused by groundwater conditions have not occurred and are not imminent, based on the best available data and information. The GSP concluded that groundwater pumping is not creating significant and unreasonable impacts on water levels, water storage, seawater intrusion, water quality, or the beneficial uses of interconnected surface waters.

The sustainable yield for the Basin was estimated to be at least 30,000 acre-feet per year. This amount represents a 100% increase from current groundwater use rates. Therefore, the Basin as a whole is not significantly constrained for groundwater availability. The GSP concluded that future water budgets for the Basin, accounting for climate change, land use changes, and population growth, would generally be equivalent to the current water budget. Minimum thresholds and measurable objectives associated with groundwater levels, annual groundwater pumping, and water quality were developed in specified monitoring wells for ongoing monitoring to assess whether undesirable results remain absent. The GSP includes a minimum threshold to maintain groundwater use below 30,000 acre-feet per year and a measurable objective to maintain groundwater use below 22,500 acre-feet.

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<sup>6</sup> <https://humboldt.gov.org/2820/Eel-River-Valley-Groundwater-Basin-Resou>

### Public Trust Doctrine

Under the common law Public Trust Doctrine, the State holds tidelands, submerged lands, and navigable waterways in trust for the benefit of the public, to be used for public trust purposes. Public trust purposes and uses include, but are not limited to, waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. Where governmental actions or decisions affect the public trust, the State must determine whether the proposed use of land is consistent with trust purposes and make findings to that effect.<sup>7</sup>

In its landmark 1983 decision, the California Supreme Court in *National Audubon Society v. Superior Court* applied the public trust doctrine for the first time to limit the appropriation of water from navigable streams and nonnavigable tributaries.<sup>8</sup> Specifically, the court held that “[t]he state has an affirmative duty to take the public trust into account in the planning and allocation of water resources.” The State Water Resources Control Board, the state agency in charge of administering water rights in California, may allocate water resources within its discretion and “despite foreseeable harm to public trust uses” but only as long as it “considers” public trust resources and “preserves” those resources to the extent “feasible.” What is feasible, in turn, includes what is in the “public interest” as determined by the State (or other trustee agency).<sup>9</sup> Legal subdivisions of the State such as counties and special districts may share responsibility for administering the public trust.

In 2018, the Third Appellate District in California determined that the public trust responsibility extends to consideration of impacts to public trust resources when a trustee agency (there, a county) approves groundwater wells in a basin where there will be harm to public trust uses or values in an interconnected navigable waterway.<sup>10</sup> Although counties do not administer or allocate overlying rights to groundwater use, and groundwater itself is not a public trust resource<sup>11</sup>, the 2018 case determined that counties have a duty under the Public Trust Doctrine to consider whether the issuance of a well permit for groundwater extraction would affect public trust resources associated with interconnected navigable waters. The 2018 case also determined that SGMA and the Public Trust Doctrine co-exist as separate and independent laws (i.e., one law does not supplant the other).

## **V. Public Trust Analysis**

### Overview

The proposed domestic well on the subject property is consistent with Section 106.3 of the Water Code which states that “every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes.” Use of water for drinking water supply and domestic use is considered a beneficial use of water under the North Coast Basin Plan.<sup>12</sup> The use of groundwater is often the preferred means of providing water supply in rural areas due to the costs and impacts associated with extending infrastructure for municipal water supply.

### Acute Impacts

The new well is located approximately 1,000 feet from the Eel River. For comparison, a recent study in Sonoma County concluded, based on analytical modeling, that wells situated within alluvial sediments and located more than 750 feet from a watercourse would be protective of acute streamflow depletion impacts.<sup>13</sup> Based on the relatively low volume of a domestic well and considering that the well is more than 750 feet from the Eel River, the risk to streamflow is very low.

<sup>7</sup> *San Francisco Baykeeper, Inc. v. State Lands Commission* (2015) 242 Cal.App.4th 202.

<sup>8</sup> *Nat'l Audubon Soc'y v. Superior Court* (1983) 33 Cal.3d 419, 446-447.

<sup>9</sup> *State Water Resources Control Bd. Cases* (2006) 136 Cal.App.4th 674, 777-778.

<sup>10</sup> *Environmental Law Foundation v. State Water Resources Control Bd.* (2018) 26 Cal.App.5th 844.

<sup>11</sup> *Santa Teresa Citizens Action Group v. City of San Jose* (2003) 114 Cal.App.4th 689.

<sup>12</sup> [https://www.waterboards.ca.gov/northcoast/water\\_issues/programs/basin\\_plan/](https://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/)

<sup>13</sup> O'Connor Environmental, Inc., March 2023 (Sonoma County Well Ordinance Public Trust Review Area Delineation).



### *Cumulative Impacts*

The annual volume of groundwater extraction proposed (approximately 0.5 acre-feet) is significantly less than the Basin's estimated annual average total groundwater use (14,837 acre-feet) and the estimated sustainable yield (30,000 acre-feet).

### *Summary*

The extraction of a relatively small volume of water at a substantial distance from the Eel River would not have any measurable effect on flow rates or water surface elevations within the Eel River during any period of the year. Therefore, it can be concluded with certainty that the well will have no measurable effect on flowrates or water surface elevations within the Eel River and is, therefore, de minimis. Nonetheless, this analysis evaluates the following public trust uses and values in the Eel River.

### Waterborne Commerce

Waterborne commerce traditionally refers to the buying and selling of commodities involving transportation by water. The Eel River is used for mining of aggregate from gravel bars during the dry season, but the extracted gravel is transported by land-based vehicles rather than by boat or barge. There are no known uses of the Eel River for waterborne commerce of commodities.

### Navigation

Navigation traditionally refers to movement over water by boat, ship, or other watercraft for the purpose of transportation. The Eel River has very limited, if any, use for transportation (recreational boating and paddling are evaluated below). While the Eel River does support watercraft use for recreation, the amount of water produced from this domestic well is de minimis, with no measurable effect on navigation in the lower Eel River.

### Fisheries

The portion of the Eel River within the Basin provides habitat for anadromous salmonids and other fish and aquatic species.<sup>14</sup> This portion of the Eel River functions primarily as a migration corridor for juvenile salmonids out-migrating in the spring and adults migrating upstream in the fall and winter. Adult fish will often hold in the intertidal zone downstream of Fernbridge until flows increase as a result of large rain events. The lower river upstream of Fernbridge provides very limited rearing habitat due to high water temperatures and poor habitat quality, and small areas of adult holding and spawning habitat.<sup>15</sup> The Eel River is used for recreational fishing.

Based on the significant distance between the well and the Eel River and the relatively small amount of water use, the well will have no measurable effect on flows and, therefore, no adverse effect on fisheries within the Eel River.

### Water-related Recreation and Public Access

The Eel River is used regularly used for recreational boating and paddling when flow conditions are suitable. Based on the significant distance between the proposed well and the Eel River and the relatively small amount of water use, the well will have no measurable effect on flows or water surface elevations and, therefore, no adverse effect on recreational boating and paddling within the Eel River.

### Open Space

The Eel River contributes to scenic vistas and the aesthetics of the Eel River Valley. Based on the significant distance between the proposed well and the Eel River and the relatively small amount of water use, the well will have no measurable effect on flows or water surface elevations and, therefore, no adverse effect on open space or natural values within the Eel River.

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<sup>14</sup> Eel River Valley Basin Surface Water Beneficial Use Assessment (Stillwater Sciences, September 2021).

<sup>15</sup> Endangered Species Act Section 7(a)(2) Biological Opinion for the Letters of Permission for Gravel Extraction in Humboldt County (LOP 205-1), National Marine Fisheries Service, August 27, 2015.

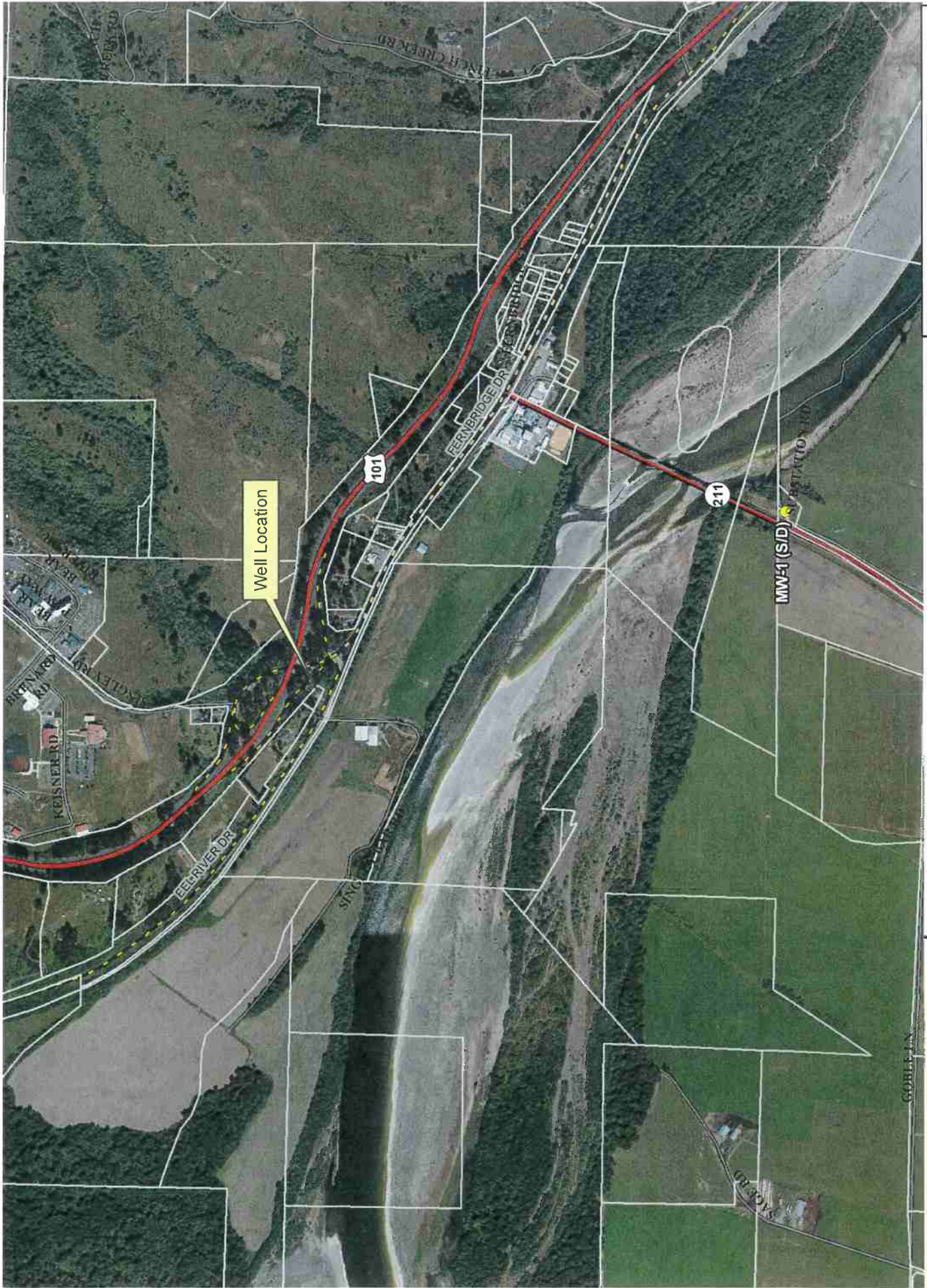
## **VI. Groundwater Sustainability Plan Consistency Determination**

The proposed well would not affect the Sustainability Goal for the Basin and would not affect the GSA's ability to maintain groundwater levels above the minimum thresholds and measurable objectives established in the Eel River Valley Groundwater Sustainability Plan.

## **VII. Conclusion**

Based on the facts and circumstances described above, staff conclude that the proposed groundwater well will not interfere with the Public Trust or substantially impair the public rights to navigation, fisheries, water-related recreation, public access, open space, or other Public Trust needs and values. In addition, staff conclude that the proposed groundwater well is consistent with the Eel River Valley Groundwater Sustainability Plan.





Proposed Water Well  
APN 309-071-020

**Figure 1: Site Location Map**

