3.3 Utilities and Service Systems

This section provides background information regarding utilities and service systems within the County, including water, wastewater, and solid waste management services, as well as related regulations and programs, and an assessment of the potential impacts of implementing the proposed General Plan Update. Other utilities and services are addressed in other chapters of this EIR. Specifically, drainage systems are considered in Section 3.7, Hydrology and Water Quality; power (electricity and gas) supply and distribution and telecommunications in Section 3.9, Mineral and Energy Resources; hazardous waste disposal in Section 7, Hazards and Hazardous Materials; and schools, police, fire protection, and other public services in Section 3.4, Public Services.

The General Plan Update addresses development in the unincorporated areas of the County and this EIR focuses on impacts related to that development. However, water supply and wastewater treatment systems are interrelated in many instances and some unincorporated areas of the County may be served by providers that also serve cities. Therefore, this EIR discusses utilities and service systems in both the unincorporated County and in cities where it is useful for understanding the existing setting, available capacity, or other potential limitations to development.

Existing utilities and service systems conditions are described in the *Community Infrastructure and Services Technical Report, 2008* (Appendix Q), the *Water Resources Technical Report, 2007* (Appendix P), which include discussions of water and wastewater system condition and capacity. These reports, which are available for review at the Planning Division public counter at 3015 H Street in Eureka during normal business hours or for download at http://www.humboldtgov.org/571/Background-Reports, are incorporated herein by reference, and summarized below. Where any discrepancies may exist between the referenced material and the material presented here, the material presented here should be considered as the most up to date and is to be relied upon for the environmental setting and analyses.

3.3.1 Utilities and Service Systems - Environmental and Regulatory Setting

Municipal Water and Wastewater Service

This section summarizes existing conditions for municipal water supply and wastewater systems in the County. The water supply discussion addresses the availability of water, capacity for treatment and storage of raw water, and the infrastructure for delivery. A comprehensive study of the condition of water and wastewater service in the County was made as part of the *Community Infrastructure and Services Technical Report* (Winzler & Kelly, 2008), and the *Water Resources Technical Report* (Winzler & Kelly, 2007), which are incorporated by reference into this EIR. These reports provide a snapshot of the condition and capacity of the public water and wastewater systems in the County. The reports indicate that there are constraints on new development due to water and wastewater capacity limitations in some portions of the unincorporated area. This EIR also contains new information that has become available since these technical reports were prepared.

Most water and wastewater systems in the County were constructed using grants funds in the 1950s and 1960s. In general, the systems are quite old, and are deteriorating and in need of improvement. Without exception, all service providers face the need to invest in maintenance and upgrades necessary to keep their systems in compliance with state standards. Almost all service providers lack the funding to make needed improvements. In addition, many of the service providers in small communities have limited managerial, financial, or technical resources to draw from.

Table 3.3.1 displays information regarding each of the water service providers that serve the unincorporated area. Information includes the number of existing connections or "services," water system capacity based on the amount of water that the system can produce (the water "supply"), treat, and store, and the amount of water used expressed as peak day demand and the average amount each connection uses per day. Water supply estimates, also referred to as source capacity, were made using the criteria contained in the California Waterworks Standards, Permits Requirements, which can be found in Sections 64552 through 64558 of the California Code of Regulations. The table also estimates the number of available connections based on system capacity and usage and includes comments regarding system capacity and condition. This information is derived from Section 6, Water Service, of the *Community Infrastructure and Services* and *Water Resources Technical Report*, with supplemental information provided by system operators or state regulators, to reflect changes that have occurred since completion of the Technical Report.

Table 3.3-1. Summary of Municipal Water Service Providers.

Provider	Connections		Capacity			Usage	
			(MGD)		(MG)	(MGD)	Gal/Day/
	Existing	Estimated Available	Supply	Treatment	Storage	Peak Day	Connection
1-South Fork Eel River Planning Watershed							
Benbow Water Company	134	50	0.327	0.2	0.22	0.382	3,381
Briceland CSD	26	0	0.01	Unknown but not limiting[1]	0.042	0.04	1,538
Garberville SD	420	25	0.461	0.33	0.27	0.31	787
Miranda CSD	143	77	0.338	Not required[3]	0.2	0.22	1,538
Phillipsville CSD	65	0	Unknown but sufficient[3]	0	0.075	0.085	1,308
Redway CSD	735	0	0.494	0.494	0.835	0.494	672
Weott CSD	144	Unknown	0.202	0.113	0.169	0.1	694
2-Lower Eel River Planning Watershed							
Loleta CSD	258	56	0.276	0.158	0.225	0.21	879
Palmer Creek CSD	128	59			0.2	0.084	656
Riverside CSD	98	60	0.074	Not required[3]	0.066	0.046	469
Scotia CSD (Town of Scotia LLC)	315	1,117	1.728	1.8	1.488	0.384	1,219

Provider	Connections		Capacity			Usage	
			(MGD)		(MG)	(MGD)	Gal/Day/
	Existing	Estimated Available	Supply	Treatment	Storage	Peak Day	Connection
3-Middle Main Eel River Planning Watershed							
Alderpoint CWD	79	66	0.432	0.130	0.160	0.063	800
4-Lower Klamath River Planning Watershed							
Orleans CSD	150	0	Unknown but sufficient[5]	0.495	0.1	0.513	3,443
5-South Fork Trinity River Planning Watershed (no Municipal Water Service Providers in this area)							
6-Lower Trinity River Planning Watershed							
Willow Creek CSD	976	609	3.76	2.953	1.08	1.8	1,861
7-Van Duzen River Planning Watershed							
Hydesville CWD	457	319	0.518	Not required[3]	0.6	0.28	622
8-Redwood Creek River Planning Watershed							
Orick CSD	140	37	0.274	Not required[3]	0.2	0.216	1,543
9-Cape Mendocino Planning Watershed							
RID (Shelter Cove)	470	520	0.36	0.462	2.1	0.331	727
10-Trinidad Planning Watershed							
Big Lagoon CSD	36	0	0.07	Not required[3]	0.023	0.012	343
Westhaven CSD	233	0	0.058	0.115	0.1	0.066	283
11-Mad River Planning Watershed							
Fieldbrook Glendale CSD	584	Not limiting (HBMWD)[5]	Not limiting (HBMWD)[5]	Not required[3]	0.415	0.389	737
McKinleyville CSD	5,517	Not limiting (HBMWD)[5]	Not limiting (HBMWD)[5]	Not required[3]	5.25	3.41	618

Provider	Connections		Capacity			Usage	
	Existing	Estimated Available	(MGD) Supply	(MGD) Treatment	(MG) Storage	(MGD) Peak Day	Gal/Day/ Connection
12-Eureka Plain Planning Watershed							
Humboldt CSD	7,698	Not limiting (HBMWD)[5]	Not limiting (HBMWD)[5]	Not required[3]	4.785	3.6	468
Jacoby Creek CWD	569	---	Not limiting (HBMWD)[5]	Not required[3]	0.174	0.628	1,117
Manila CSD	347	Not limiting (HBMWD)[5]	Not limiting (HBMWD)[5]	Not required[3]	0.1	0.157	459
Samoa Pacific Group LLC	104	Not limiting (HBMWD)[5]	Not limiting (HBMWD)[5]	Not required[3]	---		

[1]The 2006 State Water Resources Control Board Division of Drinking Water Annual Inspection Report for the Briceland System determined that the filtration rate for the slow sand filters is unknown, but based on the dimensions of the filters, it is unlikely that Surface Water Treatment Rule design rates are ever exceeded.

[2]The 2004 State Water Resources Control Board Division of Drinking Water Annual Inspection Report states that the Phillipsville "spring is heavily influenced by the weather and, therefore, cannot supply the whole system during the dry season. During the times when the spring cannot supply the whole system, it supplies water to the upper most portion of the system (seven to nine dwellings), and the well supplies water to the rest of the system. The well is primarily used in the drier months. Reportedly, the well could meet the full demand of the system."

[3]For systems whose source is groundwater, only disinfection is required. Sources that include surface water are required to install treatment consistent with the Surface Water Treatment Rule. The Surface Water Treatment Rule is a federal regulation established by US EPA under the Safe Drinking Water Act that imposes specific monitoring and treatment requirements on all public drinking water systems that draw water from a surface water source. The rule requires surface water sources to be filtered and disinfected.

[4]The 2007 State Water Resources Control Board Division of Drinking Water Annual Inspection Report states that source capacity for the Orleans CSD is "adequate" and that there are "no reported problems with source capacity."

[5]According to the HBMWD's 2015 Urban Water Management Plan, serving all of its customers will require less than 20 percent of its 85,000 acre feet per year entitlement in 20 years.

Wastewater service is available in the more densely populated communities, but is not universally available within the County. Wastewater systems are operated by six incorporated cities (development within the City of Trinidad uses onsite septic systems), seven community service districts, one sanitary district, one resort improvement district, and one private company that acquired a company town. In addition, three community services districts operate wastewater collection systems that have contracts with nearby wastewater treatment plant operators. The remainder of the County is served by individual septic systems. Septic systems are discussed in detail in Chapter 6, Geology and Soils.

A number of cities and smaller districts are at or near their capacity for sewer service and will require facility improvements if there is a significant increase in the number of connections. A number of wastewater treatment plants in Humboldt County are currently not meeting North Coast Regional Water Quality Control Board (NCRWQCB) permit requirements for wastewater treatment and disposal. Regarding the existing permit violations, the NCRWQCB has issued orders that contain programs and timelines for permit compliance, and monitors the efforts of operators to meet NCRWQCB requirements. The discussion below notes permit violations that were described in the Technical Reports.

A useful measurement in gauging the adequacy of a wastewater treatment system is its peaking factor. The peaking factor is a comparison between the volume of flow in the wastewater collection system during average dry weather conditions and the volume of

flow during peak wet weather conditions. The peaking factor is affected by inflow and infiltration (also referenced as "I&I)". This is the flow of rainwater into a wastewater system from the surface (Inflow) through manhole covers and rainwater downspouts, or below the surface (infiltration) through cracks in the collection pipe or faulty joints. Well-performing collection systems have a peaking factor of three or less, which indicates that peak wet weather flows are at most three times the average dry weather flows. The McKinleyville CSD collection system has a peaking factor of approximately 2.1 (this peaking factor is based on data provided by the McKinleyville CSD and is not directly correlated with peak event storm recurrence intervals or the duration). Some other systems in the County have peaking factors approaching ten. I&I decreases collection system capacity for additional wastewater and increases the likelihood of sanitary sewer overflows (untreated wastewater reaching surface waters through manholes or overflowing wet wells at pump stations). In addition, wastewater treatment plants are required to treat rainwater that enters the collection system to wastewater standards.

Table 3.3-2 displays information regarding each of the wastewater service providers that serve the unincorporated area. Information includes the number of existing connections or "services," wastewater system capacity based on the permit from the Regional Water Quality Control Board, dry weather and peak wet weather wastewater flows, and an estimate of the I&I peaking factor described in the previous paragraph. The table also estimates the number of available connections based on the permitted capacity and wastewater flows and includes comments regarding system capacity and condition. This information is derived from Section 7, Wastewater Service, of the *Community Infrastructure and Services* and *Water Resources Technical Report* and updated information from other sources.

Table 3.3-2. Summary of Municipal Wastewater Service Providers.

Provider	Connections		(MGD) Permitted Capacity		Flows (MGD)		I&I Peaking Factor
	Existing	Available	Dry Weather	Wet Weather	Existing Dry Weather	Peak Wet Weather	
1-South Fork Eel River Planning Watershed							
Garberville SD	353	180	0.162	0.235	0.059	0.55	4
Miranda CSD	110	59	0.046	not applicable[1]	0.03	0.1	3 – 4
Redway CSD	735	0	0.186	0.58	0.104	0.578	3
Weott CSD	134	151	0.03	not applicable[1]	0.014	0.03	2
2-Lower Eel River Planning Watershed							
Loleta CSD	260	0	0.1	not applicable[1]	0.06	0.6	10
Palmer Creek CSD	154	0			.002	0.03	
Scotia CSD	295	0	---	not applicable[1]	0.178	1.4	7 – 8
3-Middle Main Eel River Planning Watershed							
Wastewater service is available through onsite septic systems only							
4-Lower Klamath River Planning Watershed							
Wastewater service is available through onsite septic systems only							
5-South Fork Trinity River Planning Watershed							
Wastewater service is available through onsite septic systems only							
6-Lower Trinity River Planning Watershed							

Provider	Connections		(MGD) Permitted Capacity		Flows (MGD)		I&I Peaking Factor
	Existing	Available	Dry Weather	Wet Weather	Existing Dry Weather	Peak Wet Weather	
Wastewater service is available through onsite septic systems only							
7-Van Duzen River Planning Watershed							
Wastewater service is available through onsite septic systems only							
8-Redwood Creek Planning Watershed							
Wastewater service is available through onsite septic systems only							
9-Cape Mendocino Planning Watershed							
RID (Shelter Cove)	430	273	0.17	not applicable[1]	0.1	0.5	5
10-Trinidad Planning Watershed							
Wastewater service is available through onsite septic systems only							
11-Mad River Planning Watershed							
Fieldbrook Glendale CSD	166	80-100	---	not applicable[1]	0.037	0.075	2
McKinleyville CSD	5,267	781	1.61	3.3	0.9	2.0	2
12-Eureka Plain Planning Watershed							
Humboldt CSD	6,285	2,689	---	not applicable[1]	0.97	Estimated at 6 – 9	3.3 – 10
Manila CSD	449	495	0.14	not applicable[1]	0.066	0.21	3

[1]Permit only establishes standards for maximum peak dry weather flows.

The following summaries are excerpted from Community Infrastructure and Services Technical Report and include updates, as appropriate, that have been provided by the individual service providers and state regulators. Information presented includes the quantity of water supply and demand (or wastewater flows), volumes of treatment and storage, a condition assessment, and a listing of proposed improvements and projected completion dates, if known. Summaries have been organized by study area; however, where a provider serves more than one study area the summaries are organized by service provider.

ALDERPOINT COUNTY WATER DISTRICT

Water Supply. The Alderpoint County Water District (CWD) provides water service to approximately 79 service connections. The Alderpoint CWD has a permit to divert 0.25 cubic feet per second (112 gallons per minute), up to a maximum of 166 acre feet (54.1 million gallons) per year, from an infiltration gallery located in the Middle Fork Eel River and maintains approximately 160,000 gallons of storage. The Alderpoint CWD produced approximately 23 million gallons of drinking water in 2011, according to the Alderpoint County Water District Capacity Study; LACO, 2016. Average daily use is estimated at 0.032 MGD (million gallons per day), and peak daily use was reported as approximately 0.063 MGD in 2016. Water supply capacity ranges from 0.216 MGD to 0.320 MGD, which is well in excess of the current demands and production.

The Alderpoint CWD recently installed a water filtration system to bring the water quality into compliance with State of California regulations. In 2014, Alderpoint CWD replaced a leaking 100,000-gallon redwood tank with a new 160,000-gallon steel tank, which reduced the amount of water withdrawn from the Eel River by at least 50 percent.

BENBOW WATER COMPANY

Water Supply. Water service in Benbow is provided to approximately 134 existing service connections by the Benbow Water Company, a private water system regulated by the California Public Utilities Commission (CPUC). The Benbow Water Company diverts water from the East Branch of South Fork Eel River through an infiltration gallery located within the river bed. The Benbow Water Company produced approximately 31 million gallons of drinking water in 2005 (2006 California Department of Public Health, now the State Water Resources Control Board Division of Drinking Water (DDW), Annual Inspection Report). Average daily use is estimated at 0.085 MGD, and peak daily use was reported as 0.382 MGD. The Benbow State Recreation Area is also connected to the system and accommodates large special events in the summer (3000+ people), and a campground (400+ maximum). There is also a golf course/RV park that sees seasonal variation in its use. On some occasions in the summer there can be up to 3500+ additional people served by the system per day. In July 2016, the Del Oro Water Company, which operates the water system that serves the City of Ferndale and surrounding area, applied to the CPUC for authorization to purchase the Benbow Water Company.

Source capacity was identified as a serious problem for this system and pumping capacity was less than maximum day capacity (Winzler and Kelly, 2008, Page 6-91). The Benbow Water Company completed a project to increase filter capacity by installing an additional filter bank. The original filters had a surface area of 39 sq. ft., and were increased to a total surface area of 78 sq. ft. (Personal communication, Troy Hubner, Del Oro Water Company, February 8, 2017). The Benbow Water Company reports that it is operating at approximately 40 percent of its claimed water right (Personal Communication, Winston Benbow, 2010), and is planning to accommodate an additional 20 to 50 new water connections in the next 20 years.

BIG LAGOON COMMUNITY SERVICES DISTRICT

Water Supply. The Big Lagoon CSD was established in 1998 and acquired the water system one year later from a private owner. The Big Lagoon CSD system has approximately 36 existing service connections and produced approximately 1.7 million gallons of drinking water in 2005, according to the 2007 DDW annual inspection report. Average daily use is estimated at approximately 4,650 gpd, and peak daily use was reported as 11,650 gpd. In 2016, the Chairperson of the CSD Board reported that the system has an "untested theoretical limit of 30,000 gallons per day, if the well runs constantly. This is different from the 70,000 gallons reported (by the Community Infrastructure and Services Technical Report)." (Personal Communication with Valen Castellano, Big Lagoon CSD, April 29, 2016). The system operates with only 10,000 gallons of storage. The Chairperson further stated, "The BLCSD has discussed more water storage, but we are a long way away from realizing the project. Many believe we are at capacity now and could only service one or at most, two new connections. We will review and consider each individual proposal on its particular merits. Further development inland would require serious study and possible expansion of our service area beyond our current 23 acres. An Engineering Study must be done on our current system before we could competently evaluate our current conditions and any room for expanding services." (Personal Communication with Valen Castellano, Big Lagoon CSD, April 29, 2016)

BRICELAND COMMUNITY SERVICES DISTRICT

Water Supply. The Briceland Community Services District (CSD) provides domestic water from a spring located on private property to approximately 26 existing service connections. The District, through agreement with the owner and formal deeding, receives 90% of the spring's flow. The spring's flow is variable and dependent on rainfall. However, in the summertime, the spring output is five to seven gallons per minute, or between 7,200 and 10,080 gallons per day. The

Briceland CSD produced approximately 3.88 million gallons of drinking water in 2005. Average daily use is estimated at 10,630 gallons per day, and peak daily use was reported as 40,000 gallons per day (DDW Annual Inspection Report).

The Briceland CSD water system is in poor condition, source capacity is unable to meet current maximum day demands, the treatment system is unable to meet turbidity performance standards during winter months, and storage capacity is barely able to meet even one day of maximum day demands. Briceland is currently operating under a moratorium for new connections. There are currently at least four homes within the District that have submitted requests for service connections; the oldest request is over 16 years old. The Briceland CSD anticipates installing a new roughing filter and a solar powered hypo chlorination unit in the near future.

PALMER CREEK COMMUNITY SERVICES DISTRICT

Water Supply. The Palmer Creek CSD provides water service from its own source and wastewater collection services to the northern portion of the Fortuna CPA. The Palmer Creek CSD water distribution system was constructed in 1997. Palmer Creek CSD produced more than 11 million gallons of drinking water in 2003. Average daily use is estimated at approximately 0.031 MGD, and peak daily use is reported at approximately 0.084 MGD. The District has approximately 128 metered water service connections.

The water system was designed to serve 187 residential connections. Based on present and projected water use levels, Palmer Creek CSD has the ability to meet the water demands of development of the remaining lots in the District without the need to supplement supplies or storage and delivery systems. (Humboldt LAFCo - Palmer Creek CSD Municipal Service Review, 2007)

Wastewater Capacity. The Palmer Creek CSD collects wastewater from service connections within its District and conveys it to a metered interconnection point with the City of Fortuna wastewater system for treatment and disposal, pursuant to a contract for service. There are 154 existing residential wastewater connections within the Palmer Creek CSD generating an average dry weather flow of 20,000 gpd (gallons per day) and wet weather flows of 30,000 gpd (Humboldt LAFCo - Palmer Creek CSD Municipal Service Review, 2007). The Palmer Creek CSD reports that it is currently at its contracted limit for wastewater flows. The contract with the City would need to be amended to allow additional development within the District. Discussions regarding the wastewater agreement between the City and the District are ongoing.

The City of Fortuna's wastewater system is in good condition overall, and was expanded in 2006 to improve capacity and performance. The City's wastewater facilities are permitted to treat up to 1.5 MGD mean daily dry weather flow averaged over a period of one calendar month. Existing dry weather flows are currently 0.95 MGD. Therefore, the treatment facility is operating at approximately 63% of its dry weather flow capacity. However, wet weather flows continue to pose a problem for the City.

FIELDBROOK-GLENDALE COMMUNITY SERVICES DISTRICT

Fieldbrook-Glendale CSD provides water service to Fieldbrook and water and wastewater service within the Glendale area. The Fieldbrook-Glendale CSD purchases treated water from Humboldt Bay Municipal Water District (HBMWD) for delivery to its customers. Fieldbrook-Glendale CSD's water system begins at a water meter just north of the intersection of Fieldbrook Road and Glendale Drive. The system contains approximately 13 miles of water mains, two booster pump stations, and one 400,000 gallon and one 20,000 gallon water tank. Water quality is representative of HBMWD's excellent water source, and meets or exceeds State standards.

According to 2005/2006 HBMWD records, Fieldbrook-Glendale CSD's average daily use was 0.166 MGD and peak daily use was 0.389 MGD. The Fieldbrook-Glendale CSD purchased approximately 57 million gallons of drinking water from HBMWD in 2015 (HBMWD Urban Water Management Plan (UWMP) 2015, Table 4-1). Fieldbrook-Glendale CSD services approximately 531 existing connections according to the State Water Resources Control Board, Division of Drinking Water Programs. Peak daily use of HBMWD water for the District (0.389 MGD in 2005/2006) was at about 90% of their peak rate allocation of 0.43 MGD set in contract with HBMWD on July 1, 2006.

GLENDALE AREA (Fieldbrook-Glendale CSD)
Water Supply. The Fieldbrook-Glendale Community Services District (CSD) provides water and wastewater service to this area. Water service within the Glendale area is generally very good, with the exception of some low pressure areas. The only major deficiency associated with the existing system and the existing development they serve is lower system pressure within some localized areas. The Glendale area does not have any storage in its service area and normally relies on the HBMWD water reservoirs, although the Fieldbrook reservoir can be used to back feed to this area in an emergency. The Blue Lake FPD Fire Chief, who has fire protection responsibility for most of Glendale, states that additional water storage is required within Glendale for fire suppression as well as domestic water needs (Personal Communication, January, 2017). Glendale will need to expand its water system infrastructure to serve additional growth. The Fieldbrook-Glendale CSD receives treated water through the HBMWD and is not limited by either source or treatment capacity with respect to its ability to serve new connections.

Wastewater Capacity. The Glendale area receives wastewater service from the Fieldbrook-Glendale CSD. Glendale's wastewater system is in very good condition overall and has approximately 166 connections. Flows currently range between 37,000 gpd during dry weather and 75,000 gpd during wet weather. The District has a contract to pump raw wastewater to the City of Arcata for treatment and disposal. The existing contract allows for up to 71,200 gpd average dry weather flow, indicating that the system has the capacity for approximately 80 to 100 more connections. Alternative solutions to treatment and disposal must be found to accommodate any development in excess of this. The City of Arcata has indicated it is not interested at this time in increasing the District's contract amount and has recommended the District consider other alternatives. The District has approached the City of Blue Lake and will participate in other related studies to evaluate alternatives and costs for potential interconnection.

FIELDBROOK AREA (Fieldbrook-Glendale CSD)
Water Supply. Fieldbrook area receives water from the Fieldbrook-Glendale CSD. The system is in good condition overall and available connections are not limited by either source or treatment capacity. The Fieldbrook-Glendale CSD's receives treated water through the HBMWD and is not limited by either source or treatment capacity with respect to its ability to serve new connections. The only major deficiency associated with the existing system and the existing development they serve is lower than desirable water pressure within some localized areas. In addition, a stand by generator is needed at the main (Lyman Rd) booster pump station and a new roof is needed on the redwood tank. The Fieldbrook-Glendale CSD may need to expand its water distribution system at some point to serve this additional growth.

GARBERVILLE SANITATION DISTRICT
Water Supply. The Garberville Sanitary District (SD) was originally formed in 1932 to provide sewer service to the town of Garberville, and in 2006 purchased the investor-owned Garberville Water Company (regulated by the CPUC), which provides water service to approximately 420

connections. The Garberville SD produced approximately 64 million gallons of drinking water in 2003 (DDW Annual Inspection Report). Average daily use is estimated at approximately 0.175 MGD, and peak daily use is estimated at approximately 0.310 MGD.

The District's main source of water is an infiltration gallery in the South Fork of the Eel River. A secondary groundwater source (a well) is also available; however, substantial draw down has been known to occur and the well has even been known to stop producing water during dry periods. The District is limited by their appropriative water rights, which allow for maximum diversions of 0.155 and 0.595 cubic feet per second, respectively, for a combined allowable extraction of 336 gallons per minute from the infiltration gallery.

The Garberville SD recently completed a water system improvement project that included: new submersible river intake pumps and emergency power supply; a new surface water treatment plant with new pressure filters, highly efficient chlorine contact chamber, and a backwash water recycling system; the retrofit of an existing booster pump station with new pumps, valving, and controls; over one mile of new water mains and distribution piping; and a new 750,000 gallon finished water storage tank. In addition, the Garberville SD recently annexed 84 Assessor's Parcels already served by the District, into the district boundary. According to the Local Agency Formation Commission (LAFCo) staff report for the annexation, "The District has been actively planning and constructing water and wastewater facility improvements to address system deficiencies and to provide sufficient capacity to meet current and future service demands."

Wastewater Capacity. The Garberville SD wastewater system consists of a collection system with lift stations to convey wastewater to a central treatment facility. In 2011, the District completed a major treatment plant upgrade to address capacity limitation and a RWQCB cease and desist order. The $3.5 million project included: three oxidation ponds, four wetland treatment ponds, chlorination via an onsite chlorine generation system, improved percolation ponds, and an onsite operation and maintenance building. The first primary oxidation pond was constructed at a new location. The other oxidation ponds and the wetland treatment ponds were created by modifying the existing treatment ponds and recharge basin. Improvements to the percolation ponds consisted of cleaning and re-grading each basin.

In November 2011, the Water Quality Control Board rescinded the cease and desist order and issued a new Waste Discharge Permit (ID# 1B831200HUM) for the treatment plant. This waste discharge permit contains guidelines for an average dry weather flow of 162,000 gpd and a peak wet weather flow of 235,000 gpd. The treatment plant is currently operating at 38.88% of the capacity during dry weather flows.

HUMBOLDT COMMUNITY SERVICES DISTRICT

The Humboldt Community Services District (CSD) provides water, wastewater, and street lighting services to the unincorporated areas surrounding the City of Eureka. The District extends southwest from the Freshwater Valley nearly to College of the Redwoods to the south. Humboldt Bay and the City of Eureka form the district's western boundary and the eastern edge of the Freshwater Creek valley forms the eastern boundary. Included within or adjacent to the boundaries of the district are the following general services areas, each of which will be analyzed in detail below:

- Freshwater (includes the Freshwater and Mitchell Heights areas) and only water service is provided by HCSD within this area
- Humboldt Hill (includes Fields Landing, Humboldt Hill, and King Salmon,)
- Myrtletown

- South Eureka (includes the Bayview, Cutten, Pine Hill, Rosewood, and Ridgewood areas)

Humboldt CSD Water Supply. The Humboldt CSD water system is not limited by either water source or treatment capacity with respect to its availability of connections. Water for the Humboldt CSD system is provided by the Humboldt Bay Municipal Water District (HBMWD) and three wells located in the Humboldt Hill area. HBMWD has sufficient water supply to meet the demands of Humboldt CSD and its other municipal customers, and Humboldt CSD has extensive available capacity within District wells.

Humboldt CSD supplies water to 7,698 active connections (HCSD 2015 SWRCB Annual Report), approximately 97% of which are residential. In 2015, a total of 740.2 million gallons of water was distributed to the customers within the District. Average daily use for Humboldt CSD customers is estimated at 2.03 MGD (2015), and peak daily use estimated at 3.6 MGD (HCSD, 2016).

Humboldt CSD receives approximately 74% of their water from HBMWD and the City of Eureka. Humboldt CSD also maintains three water supply wells (two active and one active backup) that supplement their water supply, with a rated capacity of 1,580 gpm (2.28 MGD). Humboldt CSD's active connection with the City of Eureka has a capacity of 800 gpm, or 1.15 MGD. Their contract with the HBMWD allows for a peak rate allocation of 2.9 MGD. Therefore, the combined source capacity is estimated at 6.33 MGD.

Unlike the other zones within the Humboldt CSD service area, Humboldt Hill's water system is served almost exclusively by Humboldt CSD well water sources, although HBMWD water can also be supplied to this part of the system. Reservoirs serving Humboldt Hill include the 1.0 MG Blue Spruce tank and the 0.5 MG Donna Drive tank, for a total storage capacity of 1.5 MG.

Humboldt CSD's distribution system extends from Freshwater in the north to College of the Redwoods in the south and contains approximately 87 miles of pipe. The District has approximately 5.0 MG of storage capacity within ten storage tanks ranging in size between 0.12 MG and 1.0 MG. The District serves over 20 pressure zones. Water quality meets or exceeds State standards.

There are no significant deficiencies within Humboldt CSD's water system, although some storage and fire flow improvements are anticipated. Water service within Humboldt CSD is generally very good. Peak daily use of HBMWD water for the District (2.32 MGD in 2005/2006) was below their peak rate allocation of 2.90 MGD set in contract with HBMWD on July 1, 2006 (Winzler and Kelly, 2008). Overall peak daily use is approximately 71% of existing source capacity. The Humboldt Hill area's main water source is the District's wells. Current peak day demands within Humboldt Hill are estimated at 40% of total capacity Humboldt CSD's well's serving that area.

The Humboldt CSD reliability of supply analysis uses information from the HBMWD Urban Water Management Plan (UWMP) 2015, which shows that the Mad River and Ruth Lake can provide sufficient water supply to its seven retail water suppliers including Humboldt CSD, HBMWD retail customers, and system losses during normal, single dry, and multiple dry years between now and 2030. The Humboldt CSD also operates water wells in the Humboldt Hill area. The Humboldt CSD UWMP indicates that water depths in the wells (installed in 1988) are not influenced by climatic variation and not susceptible to drought conditions (Humboldt CSD UWMP 2015, Page 14).

Humboldt CSD Wastewater Capacity. Humboldt CSD operates a wastewater collection system that interconnects with the City of Eureka collection system and the City's Elk River Wastewater

Treatment Plant (WWTP). The City and Humboldt CSD are under a contractual agreement to convey wastewater through several points of interconnection between Humboldt CSD's and Eureka's collection system, and share treatment capacity at the Elk River WWTP.

Wastewater is collected from approximately 6,285 connections within the Humboldt CSD service areas. Average dry weather flows for the District were approximately 0.93 MGD in 2008 based on flow data collected on a daily basis. The permitted average dry weather flow (ADWF) at the Elk River WWTP is 5.24 million gallons per day (MGD). The Humboldt CSD share of this capacity is 30.5 % (1.598 MGD) and the City of Eureka share is 69.5 % (3.642 MGD). Based on a 2008 analysis of ADWF at the treatment plant and corrected for District growth through 2015, the Humboldt CSD has WWTP capacity that can accommodate about 2,689 additional equivalent dwelling unit (EDU) connections, and the City of Eureka has WWTP capacity for about 2,457 additional EDU's.

The City is conducting a study of the Elk River WWTP infrastructure to identify hydraulic and process "bottlenecks" and proposes cost effective improvements to increase capacity, rather than construct a total plant expansion. The City expects that this strategy will allow step-wise increases in WWTP capacity that keep pace with development within the Humboldt CSD and the City of Eureka over the next 20 years.

Portions of the Humboldt CSD and City of Eureka collection systems experience inflow and infiltration (I&I) of rainwater and are near or at capacity in a number of locations during significant rain events. Although extreme wet weather flows approach the design capacity of the WWTP, the plant is designed to treat all flows that the collection system conveys in its current configuration and with the current peaking factor.

The City of Eureka and Humboldt CSD cooperatively worked on the Martin Slough Interceptor Project to address the collection system capacity issues. The Martin Slough project is multi-purpose in function, including reducing wastewater overflows that degrade the environment, eliminating existing City and Humboldt CSD wastewater lift stations (by conversion to gravity service), improve energy conservation, and provide capacity for planned development. The Martin Slough Interceptor was put in service in November of 2014.

The Martin Slough project boundaries include areas within the City of Eureka that will gravity flow into the proposed interceptor, and portions of the unincorporated area surrounding Eureka that can utilize the interceptor based on proximity and topography located within the urban limit line established by the Eureka Community Plan and the Humboldt Bay Area Plan. Portions of the South Eureka area which include Bayview, Pine Hill, Rosewood, Cutten and Ridgewood are not within the Martin Slough project boundaries. Wastewater within these areas drains to portions of the City of Eureka collection system other than the Martin Slough Interceptor.

The following is a general discussion of water and wastewater service within each of the areas served by Humboldt CSD.

FRESHWATER (Humboldt CSD)
Water Supply. Freshwater is located within a valley east of Humboldt Bay. Residents of the Freshwater Valley originally received drinking water through private, individual wells and several private water companies. In 1992, the residents requested that Humboldt CSD annex this area and create the Freshwater Assessment District to provide high quality public water to correct a long-standing water quality problem.

Humboldt CSD's water system in Freshwater is in good condition overall. There are no major infrastructure deficiencies associated with the existing system. To the extent that development occurs where existing facilities are available, no major improvements will be needed. However, where development is not adjacent to an existing water main, an extension of service will be needed.

HUMBOLDT HILL (Humboldt CSD)
Water Supply. Most of Humboldt Hill was added to Humboldt CSD boundaries in the 1980's with the purchase of the Pialorsi Private Water System, and with the consolidation with County Service Area 3 (CSA 3) Sewer System, which was established in 1972 through the merger of three sanitation districts serving Fields Landing, King Salmon, and Humboldt Hill.

Following the purchase of the Pialorsi Water System, the District drilled three municipal water wells to further serve Humboldt Hill. Reservoirs serving Humboldt Hill include the 1.0 MG Blue Spruce tank and the 0.5 MG Donna Drive tank, for a total storage capacity of 1.5 MG.

Water service within Humboldt Hill is generally very good. The District has an ongoing program for upsizing undersized water mains installed to improve fire protection. The Humboldt Hill main water source is the District's wells. Current peak day demands within the study area are estimated at 40% of the wells' total capacity. Humboldt CSD anticipates adding an additional 1.0 million gallons of water storage to support planned development, provide fire protection, and to serve the higher elevation zones in the Humboldt Hill area.

Wastewater Capacity. All proposed development within the Humboldt Hill would receive wastewater service from the Humboldt CSD. Humboldt Hill's wastewater collection system was originally part of the now dissolved CSA No. 3, and was taken over by Humboldt CSD in 1982. Wastewater is collected from residences throughout the area and flows by gravity to the South Broadway pump station, where it is then pumped through a 14-inch force main to the Elk River WWTP.

Development within Humboldt Hill is not constrained by capacity limitations in the City of Eureka's collection system, but new growth in Humboldt Hill may trigger the need for increased pumping capacity at the South Broadway pump station.

MYRTLETOWN AREA (Humboldt CSD)
Water Supply. Myrtletown is located just east of the City of Eureka along Myrtle Avenue. Myrtletown's water system is in good condition overall. There are no major infrastructure deficiencies associated with the existing system. Humboldt CSD is replacing older steel pipe in the distribution system as funding is available.

Wastewater Capacity. The District maintains a collection system in this area that was originally installed in 1965. Myrtletown's wastewater collection system is generally in good condition, although some improvements are needed to reduce I&I. Myrtletown is located within the Hoover Street Sewer Drainage Basin, which pumps wastewater from the Humboldt CSD Hoover St. Pump Station to the City of Eureka Hill St. Pump Station. Wastewater is then pumped from Hill Street to the Elk River Treatment Plant.

SOUTH EUREKA AREA (Humboldt CSD)
Water Supply. South Eureka contains the Bayview, Pine Hill, Rosewood, Cutten, and Ridgewood areas. Humboldt CSD's South Eureka water system is in good condition overall. There are no major infrastructure deficiencies associated with the existing water system. Some older steel pipe

in the distribution system is currently being replaced and additional water storage capacity is planned to support planned growth and improve fire protection

Wastewater Capacity. Wastewater that is generated by existing development within South Eureka is collected within the following sewage drainage basins:

Table 3.3-3. South Eureka Sewage Drainage Basin.

Area	Sewage Drainage Basin
Bayview/Pine Hill/Rosewood	Pound Road McCullens Street Martin Slough
Campton Road (North)	Martin Slough
Campton Road (South)	Martin Slough
Cutten (North)	Hill Street
Cutten (South)/Ridgewood	Martin Slough

The completion of the Martin Slough Interceptor Project in 2014 is intended to provide adequate wastewater collection capacity for this area

HYDESVILLE COUNTY WATER DISTRICT

Water Supply. Water service in the Hydesville area is provided by the Hydesville County Water District (CWD). The Hydesville CWD has approximately 457 existing connections and produces approximately 38 million gallons of drinking water per year. Average daily use for the District is estimated at approximately 0.104 MGD, and peak daily use was reported as 0.28 MGD. The District's water supply is obtained from two wells located on District owned land near Yager Creek that have a rated pumping capacity of 360 gpm, or 0.52 MGD. Hydesville CWD storage tanks have a total storage capacity of 0.6 MG and the distribution system consists of approximately 14 miles of steel, AC, and PVC pipe.

Water service within Hydesville is generally good. The District is at approximately 60% of its source capacity during peak usage periods. In some areas located in the northern part of the District (Quail Hill subdivision area), the 4-inch mainline is inadequate in size to maintain the fire flow requirements and topography is a constraint on service area expansion utilizing the existing gravity fed system. The District is planning to increase the size of distribution lines in the Quail Hill subdivision, and install an additional well and 500,000 gallons storage, as funds become available.

JACOBY CREEK COUNTY WATER DISTRICT

Water Supply. Jacoby Creek receives water service from the Jacoby Creek County Water District (CWD), although portions of this area rely on private wells, springs, or surface water intakes generally of poor quality. The Jacoby Creek CWD serves approximately 569 existing connections and receives its water by contract with the City of Arcata through the City's wholesale relationship from HBMWD. The City of Arcata also operates and maintains the Jacoby Creek CWD water system.

The Jacoby Creek CWD purchased 21 MG of water in 2015 (Arcata UWMP, 2015). Average daily use is estimated to be 0.057 MGD. Jacoby Creek's water system is in good condition. The biggest deficiency with the existing system is lack of adequate storage capacity. The study area has only about 27% of maximum day demand in storage capacity (Winzler and Kelly, 2008). In addition, some distribution piping within the system is fewer than six inches in diameter and unable to provide adequate fire flows.

LOLETA COMMUNITY SERVICES DISTRICT

Water Supply. Loleta receives water and wastewater service from the Loleta Community Services District (CSD). The water system has approximately 258 existing connections, of which approximately 235 are residential connections and the remaining 13 are non-residential connections serving 11 businesses and 2 industrial uses including the Loleta Cheese Factory and the non-operational Humboldt Creamery. Roughly 25% of water demands are associated with the commercial and industrial users (Markus Drumm, 2007), and residential maximum day usage is estimated to be 0.158 MGD (697 gpd/connection).

Due to poor water quality, the Loleta CSD received funding from USDA as well as American Recovery and Reinvestment Act funding, to construct an improvement project that included a new well, transmission line, and treatment plant. The water system improvements are on-line and are sized to serve existing development and currently planned development. According to the LAFCo Municipal Services Review (2008) "the Loleta water system is at 26 percent capacity on the highest use day of the year. However, these numbers do not take fire suppression into consideration, and they are based on the assumption that the facilities are in perfect running order. The District believes that they can supply an additional 60-70 (40 to 50 based on Building Permit data as of 2016) homes."

Wastewater Capacity. Approximately 260 connections within Loleta receive wastewater service from the Loleta CSD, of which most are residential connections except for the two industrial connections identified above. The system currently has flows that range between 0.06 MGD during dry weather and 0.6 MGD during wet weather. The facility has an average dry weather flow design capacity of 0.1 MGD, and is operating at approximately 62% of its capacity.

The District currently relies on percolation ponds for the disposal of treated effluent. This form of disposal is becoming increasingly difficult to permit due to stringent regulations governing disposal to the Eel River during the discharge prohibition period. Other communities such as Rio Dell and Ferndale are being required by the NCRWQCB to find alternative methods of disposal. The District has significant problems with I&I within their collection system, and is operating its wastewater system under a cease and desist order (R1-2015-008) due primarily to excessive I&I. The cease and desist order prohibits additional influent from new or increased connections by the Loleta CSD, except from building permits approved before March 12, 2015. Where the peaking factor has been reduced to 5.5, the Loleta CSD may request to connect additional new or expansion of existing connections provided the additional flows are off-set by a reduction of I&I by at least 2:1 to the collection system. The Loleta CSD is required to complete repairs and upgrades to the system to address this problem by 2019. The Loleta CSD submitted a notice of exemption to the State Clearing House (SCH 2016118314) in November of 2016 for a project to rehabilitate approximately 4,000 feet of sewer main, lateral connections, and a man hole to reduce peak wastewater flows and improve treatment efficiency.

MANILA COMMUNITY SERVICES DISTRICT

Water Supply. The Manila Community Services District (CSD) provides water (the District is a wholesale customer of HBMWD) and wastewater service to Manila. According to 2005/2006 HBMWD records, Manila CSD's average daily use was 0.119 MGD and peak daily use was 0.157 MGD. Peak daily use of HBMWD water for the Manila CSD is currently less than their peak rate allocation of 0.21 MGD. The District purchased approximately 38.5 million gallons of water in 2015 (HBMWD UWMP, 2015). The District has approximately 347 active connections, of which 341 are residential connections. Non-residential connections include Sierra Pacific Industries (the mill closed in 2016), Redwood Coast Trucking, Manila Community Center and Park, an RV park, and the former Manila Market.

Manila's water system is in good condition. The only major deficiencies associated with the existing system are some undersized water mains and inadequate storage capacity. The District has no major plans for system upgrades at this time. The Manila CSD is planning to carry out minor upgrades, such as replacing valves, installing new fire hydrants, and replacing the storage tank roof in the near future. The District is also applying for grants to increase water storage capacity.

Wastewater Capacity. The Manila CSD wastewater system is in good condition overall. The community relies on a Septic Tank Effluent Pump (STEP) system that pumps liquid effluent from septic tanks into a force main to the treatment facility. The treatment system consists of three free surface wetlands, two surface aerated facultative ponds, and four percolation ponds (rapid infiltration basins) for disposal. The system currently has approximately 444 connections, and flows currently range between 0.066 MGD during dry weather and 0.21 MGD during wet weather. The facility has an average dry weather flow design capacity of 0.14 MGD, and is operating at approximately 47% capacity.

The District's collection system and treatment system are in overall good condition. The system is in compliance with its waste discharge requirements and has sufficient capacity to serve forecasted potential future development without major improvements, although infrastructure extensions might be needed to serve a particular parcel.

MCKINLEYVILLE COMMUNITY SERVICES DISTRICT

Water Supply. The McKinleyville Community Services District (CSD) provides water and wastewater service to McKinleyville. (The McKinleyville CSD is a wholesale customer of the HBMWD). The McKinleyville CSD water system is in good condition overall. The McKinleyville CSD has approximately 5,517 existing municipal connections (Table 2.1, McKinleyville CSD UWMP, 2015). According to the McKinleyville CSD UWMP, the McKinleyville CSD average daily use was 1.51 MGD and peak daily use was 3.41 MGD. The District purchased 1,397 acre feet from the HBMWD (HBMWD UWMP, 2015) and delivered 1,334.7 acre feet of water in 2015 (Table 4-1, McKinleyville CSD UWMP, 2015).

The McKinleyville CSD provides water service to the residents within the Patrick Creek CSD. Originally, Patrick Creek CSD had its own water system. However, in 1973, the PCCSD transferred interest in the water distribution system to the McKinleyville CSD. All residents within the district individually purchase water from the McKinleyville Community Services District through a joint powers agreement established in 1973 (Patrick Creek CSD Municipal Service Review, Humboldt LAFCo, January 2008).

The District's current storage capacity for potable water is 5.25 million gallons in six storage tanks located on McCluski Hill (100,000 and 150,000 gallons), Cochran Road (1 million and 1.5 million gallons) and Norton Road (1 million and 1.5 million gallons). This can leave a 24-hour backup water supply for McKinleyville water customers at peak flow. Two new 3-million gallon tanks are also planned for construction on the District's Murray Road site. McKinleyville CSD is in the process of determining the viability of the Murray Road tank site due to seismic considerations. A cost analysis will be conducted to determine the feasibility of design at that site opposed to purchase of a site in a less sensitive location. New tanks would increase the District's storage capacity, enhance fire flows during peak summer usage, and provide additional system capacity for new growth. McKinleyville CSD has determined it would be more advantageous to initiate phased construction of two tanks at this location to spread the cost over a longer period of time, and to enhance the operational flexibility of the system by having two tanks to allow for maintenance and redundancy. (McKinleyville CSD UWMP, Modified April, 2013.)

"McKinleyville and the City of Arcata's water supply are vulnerable to natural disaster, therefore, an emergency intertie was constructed to allow for the flow of water to occur between both systems if necessary. This line remains stagnant when not in use, therefore, a 5/8-inch bypass was installed which allows the water within the intertie to turnover and maintain its chlorine residual. All water that passes through the bypass is metered and currently enters into the City of Arcata's water system from the McKinleyville system." (McKinleyville CSD UWMP, 2015: P 13)

The McKinleyville CSD UWMP 2015 water supply reliability analysis (see Section 7, Water Supply Reliability) uses information from the HBMWD UWMP 2015, which shows that the Mad River and Ruth Lake can provide sufficient water supply to the seven retail water suppliers, including McKinleyville CSD, HBMWD retail customers, industrial customers, and system losses (23,549 acre feet per year in 2030) during normal, single dry, and multiple dry years between now and 2035.

Wastewater Capacity. The McKinleyville CSD wastewater system currently has approximately 5,267 equivalent dwelling unit wastewater connections, and flows range between 0.9 MGD during dry weather and 2 MGD during wet weather. The facility has a biological treatment capacity of 1.6 MGD (State Water Resources Control Board, Order No. WQ 2011-0008-DWQ), and is operating at approximately 56 percent of dry weather capacity. The McKinleyville CSD collection system was installed in the mid 1980's and has been well maintained over the years.

The McKinleyville CSD wastewater management facilities consist of two primary oxidation ponds (11.2 acres total), two secondary oxidation ponds (5.5 acres total), two finishing treatment marshes (5.6 acres total), with a total pond area of 22.3 acres. Biological treatment capacity of the ponds is 1.18 mgd (1,180,000 gallons per day) and hydraulic capacity of disinfection facilities (chlorine contact chamber) is estimated at 3.3 mgd (2300 gpm) peak flow. Treated wastewater is discharged to the Mad River during winter months when the river flow rate surpasses 200 cfs (cubic feet per second). During summer months (May 15 through September 30) and low flow periods of the Mad River, treated wastewater is discharged into two percolation ponds located adjacent to the river and is irrigated on dairy pastures in southwest McKinleyville. (McKinleyville CSD website, Wastewater Management Facility-About the Facility, http://mckinleyvillecsd.com/wastewater-management-facility)

The McKinleyville CSD completed a 20 Year Wastewater Facilities Plan (WFP) in January 2012, which identified a series of upgrades to the existing wastewater treatment plant, including portions of the effluent disposal system. Projected 20-year flows for year 2030 were developed based on a 1.8% annual increase in population. The projected average dry weather flow for year 2030 is 1.4 MGD and the projected average wet weather flow is 1.7 MGD. The projected peak day flow for year 2030 is 3.1 MGD. Based on the Wastewater Facilities Plan, the improvements will address the needs for the facility through the year 2030. The WFP presented several treatment alternatives and recommended replacing the existing facultative lagoon system with an in-basin extended aeration system. Subsequently, two manufacturers of in-basin extended aeration systems, Bioworks and Parkson, were chosen as the preferred vendors for the extended aeration system. The proposed Wastewater Management Facility (WWMF) improvements include a new headworks facility; aeration basins; a blower/electrical/maintenance building; two new secondary clarifiers, including return activated sludge/waste activated sludge pumping; and a biosolids storage basin. The improvement project was initiated in January 2016, and is currently under way. (McKinleyville CSD website, Wastewater Treatment Plant Upgrade, http://mckinleyvillecsd.com/wastewater-management-facility)

In 2013, SHN Consulting Engineers and Geologists, Inc. (SHN) prepared a sewer capacity analysis for the McKinleyville CSD WWMF sanitary sewer collection system, with particular emphasis on

the remaining available capacity in the three gravity trunk lines (north, middle, south) that convey wastewater from the east side of U.S. 101 to west where the WWMF is located. The number of equivalent dwelling units that could be serviced with the remaining available capacity was estimated considering the rainfall-derived infiltration and inflow (RDII) of three different design storm events: 5-year, 24-hour; 25-year, 24-hour; and a 100-year, 24-hour event. The model results indicate that there is remaining capacity without considering RDII and that no additional capacity remains with 100-year RDII included. SHN recommends that McKinleyville CSD use the capacity results based on the 25-year RDII, which allows the development of additional units (a combined total of 781 total equivalent dwelling units, as of 2013) that utilize the middle and south U.S. 101 crossing locations under existing conditions.

MIRANDA COMMUNITY SERVICES DISTRICT

Water Supply. Miranda receives water and wastewater service from the Miranda Community Services District (CSD). The Miranda CSD conveys approximately 33 million gallons of drinking water per year to approximately 143 existing connections (2005 DDW Annual Inspection Report). Average daily use for the District is approximately 0.100 MGD and peak daily use is approximately 0.220 MGD. The District's water source comes is two wells with a total capacity of 0.338 MGD. The District has 0.2 MG of total storage, and the distribution system consists of one pressure zone which is gravity fed by the two tanks. Low pressures are known to occur, especially in the School Road area, due to small diameter (2-in.) mains. Miranda's water system is in fair to good condition. The primary deficiencies associated with the existing system are some undersized water mains and inadequate storage capacity.

Wastewater Capacity. The Miranda CSD wastewater system serves approximately 110 residential connections, which represents approximately 50% of homes within the district. Average dry weather flows are estimated at approximately 30,000 gpd (Miranda CSD, 2007). Peak wet weather flows are estimated at approximately 100,000 gpd. The Miranda CSD collection system consists of small diameter gravity sewer lines that collect effluent from individual septic tanks in the community. The system is a combined septic tank effluent gravity and pump system (STEG/STEP). The treatment plant has a dry weather design capacity of 46,000 gpd, as set forth in their waste discharge requirements.

The District's collection system and treatment system are in generally good condition. The District estimates the treatment system is currently operating at approximately 65% of its design capacity. The Miranda CSD uses percolation ponds for disposal. This form of disposal is becoming increasingly difficult to permit due to stringent regulations governing disposal to the South Fork Eel River during the discharge prohibition period from May 15th through September 30th. This discharge prohibition period extends to all wastewater dischargers on Eel River as covered by the Water Quality Control Plan for the North Coast Region. Other communities, such as Rio Dell and Ferndale, were required by the NCRWQCB to find alternative methods of treatment and disposal.

ORICK COMMUNITY SERVICES DISTRICT

Water Supply. The Orick Community Services District (CSD) provides water to Orick and is developing plans to provide wastewater service as well. The Orick CSD retailed approximately 17 million gallons of drinking water in 2003 (2007 DDW Annual Inspection Report). The District does not maintain average daily use and maximum daily use statistics. Average daily use for the entire District was approximately 0.047 MGD, and the District estimates peak daily use is approximately 0.216 MGD. The Orick CSD has approximately 140 existing connections, of which approximately 120 are residential.

The District maintains two active wells with a total production capacity of 0.274 MGD. The District maintains one pressure zone in its distribution system, serviced by approximately 6 miles of 4-inch through 8-inch PVC and AC pipe. The District's storage capacity includes two 100,000 gallon redwood storage tanks. This represents less than one day of needed storage.

Water service within Orick is generally good. Current peak water use is at approximately 79% of available production capacity. A significant deficiency of the current water system is its lack of proper storage, which is less than one day at maximum day demands.

Wastewater Capacity. Pollution from failing septic tanks has been found to be widespread and contaminating local groundwater sources. The Orick CSD applied to the Humboldt LAFCo to activate their latent powers to provide community wastewater services, with wastewater service to be limited to the commercial/residential areas of the Orick community along Hwy 101 on the north and south sides of Redwood Creek. LAFCo took action to authorize this additional power in May 2011.

The Orick CSD recently evaluated alternatives for a community wastewater system and completed an EIR (State Clearing House No. 2009082034) evaluating a Septic Tank Effluent Pump system where effluent would be pumped through collection piping to an advanced treatment system and then disinfected and discharged to subsurface disposal field(s). The system was intended to have a design buildout to serve 371 equivalent residential units, and flows are expected to range between an average dry weather flow of 43,041 gpd to a peak day average flow of 86,081 gpd (Draft Environmental Impact Report Orick Wastewater Project Orick CSD, October 2011). Following this effort, the Orick CSD received funding from the North Coast Resource Partnership to conduct a demonstration project to evaluate the feasibility of a decentralized community wastewater system. The Orick CSD will need ultimately to identify a preferred wastewater system, design and feasible project, and seek regulatory approval and adequate funding.

In the meantime, owners wishing to develop their land may do so using onsite sewage disposal systems. Site conditions may require that non-standard systems be used, such as Wisconsin Mounds or At-Grade systems that do not use subsurface leach lines for effluent disposal, which may require inspection and monitoring.

ORLEANS COMMUNITY SERVICES DISTRICT

Water Supply. Orleans is provided water service through the Orleans Community Services District (CSD). Orleans has approximately 150 active connections and 15 inactive connections. Orleans CSD water supply consists of an infiltration gallery within Pearch Creek with unknown but adequate capacity. Orleans CSD retailed approximately 26 million gallons of drinking water in 2005 (2005 DDW Annual Inspection Report). Average daily use for the entire District is estimated at 0.071 MGD, and peak daily use is estimated at approximately 0.513 MGD. Current peak water use is estimated at approximately 79% of available treatment capacity if DDW loading rates are used but 104% using recommended maximum loading rate specified by the manufacturer of the treatment system (according to the Community Infrastructure and Services Technical Report Condition Assessment, page 6-113). Source capacity is not an issue.

Orleans CSD currently uses inline filtration, which is no longer an accepted filtration technology in the State of California. As a result, the District has recently applied to fund a project which includes a fourth filter, turbidity meters, a second 100,000 gallon storage tank, and a new exit flow meter to replace the high flow turbine meter. Additionally, it has been proposed by the District to move the polymer and chlorine injection point further uphill from the current treatment point, which could provide the necessary flocculation time to change the system from inline to

direct filtration (NCRP Demonstration Project for Orleans Community Services District, January 2015).

The Orleans CSD received funding from the North Coast Resource Partnership to conduct a demonstration project to evaluate water demand, water storage, water rights, a water shortage plan, and develop strategies for addressing those needs.

PHILLIPSVILLE COMMUNITY SERVICES DISTRICT

Water Supply. The Phillipsville Community Services District (CSD) was formed in 1982 to assume responsibility for the Phillipsville Mutual Water Association water facilities. The Phillipsville CSD has approximately 65 active service connections. The District retailed an estimated 8.75 million gallons of drinking water in 2003. Average daily use for the entire District is estimated at 0.024 MGD, and peak daily use is estimated at approximately 0.085 MGD.

The Phillipsville CSD water system was in poor condition with inadequate storage capacity, a distribution system consisting of non-standard materials such as electrical conduit, limited source capacity, and lack of treatment. The District received American Recovery and Restoration Act funding through DDW and upgraded the water system infrastructure to resolve these issues. The project included the installation of a treatment plant on the spring source, the replacement of distribution pipes, and the installation of a 140,000 gallon storage tank. The project was completed in 2012. The improvements were designed to serve existing development plus ten percent additional capacity to accommodate some growth. The state DDW reports issues with the system remain relating to the turbidity of water that feeds a spring that serves the upper portion of the District and the need for additional storage. The drinking water system is adequate for current needs and does not have significant deficiencies (2014 Housing Element Attachment J, Detail of Infrastructure and Service Needs of Legacy Communities),

REDWAY COMMUNITY SERVICES DISTRICT

Water Supply. Redway receives water and wastewater services from the Redway Community Services District (CSD). According to the District, Redway CSD produces approximately 60 million gallons of drinking water per year. Average daily demand was approximately 0.208 MGD, and maximum day demand was approximately 0.494 MGD (based on monthly flow data from 2011 to 2014). Peak daily use was 0.394 MGD (Redway Community Services District Water and Wastewater Systems Capacity Analysis Waterworks Engineering, 2014). The District has approximately 735 existing service connections.

Redway CSD's water system consists of two water sources, an infiltration gallery in the South Fork of the Eel River and an unnamed spring, which is "inactive". The Redway CSD's total storage capacity is approximately 735,000 gallons in the residential area and 100,000 gallons in the Meadows Industrial Park. The District maintains approximately 25 miles of distribution piping, which is reported to have inadequate pressure in portions of the system during fire flows.

The Redway CSD completed a project to address water system deficiencies in 2009. The District received funding through DDW and upgraded piping and valving to improve the operation and performance of the water treatment system and rehabilitated the Eel River intake. According to WaterWorks Engineers (WWE), Redway CSD Water and Wastewater Systems Capacity Analysis, 2014, "(t)he water treatment plant is limited by the design flows of the water intake pumps and booster pumps, and the pretreatment system to a capacity of 450 gpm. At the current Maximum Day Demand of 494,000 gallons, the water plant has to run 18.3 hours per day at its full output of 450 gpm in order to provide this volume of water. This should be viewed as essentially at capacity, because the plant is not staffed 24 hours per day, and while the bulk of the treatment process is automated, it is not designed for complete un-manned operation.

Depending on the demand of significant new connections to the water system, the (Water Treatment Plant) capacity would need to be increased." "It is the opinion of WWE that water treatment system is currently at capacity, and the water storage and distribution system is already struggling to meet the demands of existing connections. These issues should be addressed before substantial additional service connections are made."

Wastewater Capacity. The Redway CSD wastewater system currently has approximately 675 residential connections and approximately 60 commercial connections. Flows range between 0.104 MGD during dry weather and 0.578 MGD peak day wet weather flow. The facility has a permitted dry weather capacity of 0.186 MGD and wet weather capacity of 0.58 MGD. The WWTP is operating at approximately 55% capacity of dry weather and 100% wet weather capacities.

According to the Redway CSD Water and Wastewater Systems Capacity Analysis, WWE 2014, "(t)he most limiting facility at the treatment plant currently is the sludge dewatering process. Dewatering capacity is currently sufficient during the dry weather season, but not during the wet-weather season."

"The next item of concern is the peak hour wet weather flow hydraulic capacity of the piping downstream of the secondary clarifier overflow weir. Instantaneous flow above approximately 665 gpm will submerge the weir. This can be alleviated by upsizing the piping downstream of the clarifier from 8-inch to 10-inch, but this is not critical for short-term operation. "

"The last item of concern is the existing oxidation ditches apparent inability to denitrify at a level that will be necessary to achieve an anticipated future 10 mg/L nitrate limit. The existing WWTP may be able to meet this limit by closely monitoring immersion of the existing brush aerator and other process parameters, but it appears to be already close to its treatment capacity even if denitrification performance is optimized."

"Several options exists for improving the denitrification capacity of the plant, including 1) supplementing the existing oxidation ditch with a pre-anoxic basin and internal mixed liquor recycle pumping provisions, 2) installation of a new oxidation ditch in parallel to the existing oxidation ditch, or 3) installation of a new, stand-alone oxidation ditch and re-tasking of the existing oxidation ditch to an ancillary facility such as emergency overflow, aerobic digester, etc. However, all of the options would be costly, and would require procurement of funding assistance in order to implement."

In particular, the Redway CSD Water and Wastewater Systems Capacity Analysis concludes that "The existing wastewater treatment plant may not be capable of complying with what is believed to be a forthcoming effluent discharge limit for nitrate of 10 mg/L, at current wastewater flows and loads. It is very unlikely that it would be able to meet the 10 mg/L limit with increased flows and loads."

RIVERSIDE COMMUNITY SERVICES DISTRICT

Water Supply. The Riverside Community Services District (CSD) provides water service to the Port Kenyon, Meridian Road, and Centerville Road at Oeschger Road. The District's water source consists of three wells with a maximum production capacity of approximately 74,000 gallons of water a day. Riverside CSD produced 12.5 million gallons of drinking water in 2005 (DDW, 2005 Annual Inspection Report). Average daily use was approximately 0.034 MGD, and peak daily use was approximately 0.046 MGD. The District currently provides water service to 74 residential customers and 24 agricultural operations (dairies on the Ferndale bottoms).

Water service within the Riverside service area is generally good. Current peak water use is at approximately 62% of available production capacity. The District's deep well can only be used as an auxiliary well due to high manganese content. The District does not currently have any fire hydrants and is not capable of supporting fire suppression.

SCOTIA COMMUNITY SERVICES DISTRICT

Water Supply. The Scotia Community Services District (CSD) was officially formed in 2011 to provide water, wastewater, parks and recreation, street lighting, and fire protection services to the town of Scotia. Prior to the formation of the Scotia CSD, the Town of Scotia LLC assumed ownership of the town's domestic water system, the wastewater system, nearly all of the other utilities, and most of the town's real property from the Pacific Lumber Company following its bankruptcy in 2007. The Town of Scotia LLC is in the process of subdividing the town of Scotia, which was previously an industrial campus, so that most structures will be on their own lot.

The Scotia CSD water supply comes from an infiltration gallery in the Eel River that supplies separate domestic water and raw water fire systems. The domestic system is fed by a domestic booster pump station with a firm capacity of 1.728 MGD. Average day production at Scotia's water treatment facility was estimated at 0.412 MGD, with approximately 0.151 MGD used by Scotia's industrial customers and the remaining 0.261 MGD used by residential and commercial customers (Winzler & Kelly, 2006). Peak day flows in Scotia were estimated at 0.606 MGD (2006 DDW Annual Inspection Report). Assuming a similar percentage usage for industrial uses, the domestic water peak demand is estimated at 0.384 MGD. Scotia currently has approximately 280 residential connections, 15 commercial connections, and 20 industrial connections. Current peak water use is at approximately 22% of available production capacity.

In January 2016, the Scotia CSD adopted a resolution approving a letter of intent to accept all dedicated facilities and properties from the Town of Scotia, LLC, to provide utility and other services to the former mill town. The Scotia CSD has since adopted rates for water and sewer services and agreed to assume responsibility, accept the dedicated properties, and own and operate the systems thereafter. These rates include funding to carry out the necessary improvements to the water and wastewater systems, including a new water treatment plant above the 100-year flood elevation.

Wastewater Capacity. Approximately 295 connections within Scotia receive wastewater service from the Scotia CSD, 92% of which are residential connections. Average dry weather flows currently amount to approximately 0.178 MGD, while peak wet weather flows are estimated at approximately 1.4 MGD (Winzler & Kelly, 2006).

The Scotia CSD WWTP is located within the 100-year floodplain. The treatment capacities of multiple unit processes within the facility are exceeded even by average day maximum month flows (Winzler & Kelly, 2006). However, under current conditions the three treatment ponds at the WWTP provide the necessary treatment to meet current permit conditions (SHN, 2007). In 2006, there was concern that the facility would not meet the secondary treatment standards for treatment. PALCO requested the facility be placed under a cease and desist order that set forth a time schedule for compliance with permit requirements relating to treatment. The cease and desist order was rescinded in April 2012 and a new permit was issued (ORDER NO. R1-2012-0065). The new permit states that "(a) hydraulic study was conducted during the term of the permit and determined that the design average dry weather flow of the WWTF is 1.0 MGD. Annual average flows at the Facility are approximately 0.200 MGD."

The Scotia WWTP currently discharges to percolation ponds adjacent to the Eel River during the summertime discharge prohibition period. The town will likely have to find alternative methods

for summertime disposal, as percolation ponds on the Eel River are becoming more difficult to permit with time. As indicated above, the Scotia CSD has assumed responsibility for the wastewater system and is responsible for carrying out the LAFCo conditions of approval for the formation of the Scotia CSD, which specifies certain wastewater system improvements.

RESORT IMPROVEMENT DISTRICT NO. 1 (SHELTER COVE AREA)

Water Supply. Resort Improvement District (RID) No. 1 provides water and wastewater service to Shelter Cove and produced approximately 57.4 million gallons of drinking water in 2004 (2006 DDW Annual Inspection Report). Average daily use is estimated at 0.157 MGD, and peak daily use was reported as 0.331 MGD in 2004. The District has approximately 470 existing connections. The number of water connections available to the RID is limited by its permit to a total of 990 until such time that it identifies additional sources of water.

The RID water source consists of two active surface water spring intakes (Rick Spring and Upper Telegraph Creek), a seasonal standby surface water spring intake (Lower Telegraph Creek), and two standby wells. During summer months when demands are high, the District is required to maintain environmental flows within Telegraph Creek and is allowed to withdraw at Lower Telegraph Creek at a point prior to the water's infiltration into beach sands. The source capacity of the District is approximately 508 gpm (0.732 MGD), well over current maximum day demands (230 gpm). The treatment capacity of the plant is 350 gpm, or 0.504 MGD.

Water service within the RID is generally very good. Current peak water use is at approximately 45% of available production capacity. The District is in the process of locating additional source capacity. The RID has identified sites for new water wells, several of which have been approved by the state for service. The RID Board has approved funds for the exploration of five new well sites to be located in regions of the upper Cove where successful well sites have been established and geologic conditions are similar (Resort Improvement District #1 General Manager's Report, February 2012).

Wastewater Capacity. Approximately 408 residential connections and 22 commercial connections receive wastewater service within Shelter Cove (RID, 2007). Average dry weather flows currently amount to approximately 0.1 MGD, while peak wet weather flows are estimated at approximately 0.5 MGD (Luce, 2007). According to the District's discharge permit, the RID WWTP is designed for an average dry weather flow of 0.17 MGD, an average wet weather flow of 0.27 MGD, and a peak wet weather flow of 0.77 MGD.

Based on existing flows, the District is approximately at 59% of dry weather treatment capacity and approximately 78% wet weather capacity at its WWTP. The District is currently under an Administrative Civil Liability Order due to the District's inability to meet treatment requirements. In essence, the influent to the treatment plant is so diluted, it is virtually impossible to meet these requirements.

The District last developed a Master Plan Update for its wastewater treatment and disposal facilities in 1997, which outlines necessary improvements to meet different forecasted growth scenarios. The District also developed a ten-year capital improvement program in 2007 to address required maintenance and upgrades to their wastewater system. The District instituted an I&I rehabilitation program in February 2008 as a compliance project in response to Administrative Civil Liability Order No. R1-2007-0009. The District has continued to complete inspections and point repairs of the collection system, including improvements to manholes. According to the approved Waste Discharge Requirements/ Permit (R1-2015-0017), although the design peak daily wet weather flow was exceeded in 2012 (0.818 mgd), the facility remained below the design peak daily wet weather flow of 0.77 mgd for the most recent 4 years (0.568 mgd).

WEOTT COMMUNITY SERVICES DISTRICT

Water Supply. The approximately 144 existing, unmetered service connections in Weott receive water service from Weott Community Services District (CSD). Average daily use is estimated at approximately 0.052 MGD and peak daily use is estimated to be approximately 0.1 MGD. The Weott CSD is supplied by two surface water sources located across the Eel River from Weott that have a total rated capacity of approximately 0.202 MGD that flow through two separate treatment and distribution systems. Treatment capacity totals approximately 85.4 gpm (0.113 MGD if operated 22 hours per day) and is therefore more limiting than source capacity. According to the Weott CSD, the water system currently does not exceed maximum allowable filter rates/filter loading rates and generally has no issues meeting their customers' water demands/needs (personal communication, Gary Neumann, Operations Manager-Chief Plant Operator, Weott CSD, 2017).

Weott CSD's water system is in fair condition and has historically suffered supply problems during summer months. Estimated peak daily use is currently greater than available supply from the District's springs. Overall peak daily use is in excess of the springs' source capacity and the treatment plant's treatment capacity. Peak daily demands are approximately 50% of existing source capacity and 75% of existing treatment capacity. The District has installed meters on all service connections, addressed some severe leaks in the system, and adjusted filter operations, such that the treatment plant can operate within the regulatory constraints.

Wastewater Capacity. The Weott CSD is responsible for collection, treatment, and disposal of the community's wastewater. The following information is from the Weott CSD Municipal Service Review, 2012:

"The Weott CSD's wastewater collection system incorporates gravity mains and one lift station that direct wastewater to a community septic tank where preliminary treatment occurs. From here, raw wastewater flows through a recirculation tank and pea gravel filter, a chlorine contact basin, and dechlorination facilities. Disposal facilities consist of both a community leachfield and direct discharge to the South Fork Eel River, although the direct discharge disposal is not currently used. Sludge is dewatered and transported to the Humboldt County solid waste transfer station for landfill disposal.

"The Weott CSD currently provides wastewater service to most areas within its service boundaries. The system currently has approximately 134 residential connections, and flows currently range between 14,000 gpd during dry weather and 30,000 gpd during wet weather. The facility has a permitted dry weather capacity of 30,000 gpd, and is therefore operating at approximately 47 percent of design capacity."

The wastewater treatment system was constructed between 1989 and 1991 and system improvements were made in 2000 under a USDA grant that included improvements to the lift station, chlorination/dechlorination equipment, and the gravel filter distribution piping. The system currently is operating well within its design capacity, and no system upgrades are planned other than typical maintenance.

WESTHAVEN COMMUNITY SERVICES DISTRICT

Water Supply. The Westhaven Community Services District (CSD) produced 14.3 million gallons of drinking water in 2004 and provides water service to 233 residential customers (2005 DDW Annual Inspection Report). Average daily use was approximately 0.039 MGD, and peak daily use was approximately 0.066 MGD. The system is supplied by three small, spring-fed tributaries of Two Creek and a well within the residential area. The creek source represents approximately 75%

of the total source capacity, with the well accounting for the remaining 25%. Source capacity varies between 40 – 60 gpm (0.058 – 0.086 MGD). Source capacity currently varies between 40 – 60 gpm, compared to a maximum day demand of 0.66 MGD, or approximately 46 gpm. The District has expended considerable resources in efforts to locate additional local water sources. An attempt by the District to develop a municipal well just outside the northeast boundary failed due to local political impasse. The District has installed meters on all residential connections recently, which has facilitated the District in identifying leaks and distribution system problems.

Aside from inadequate source capacity, no serious deficiencies were identified through the DDW inspection. The District plans on replacing the storage tank roof. Plans are also underway to upgrade the distribution system's undersized water mains, increase storage capacity, and further explore additional sources of water. Development that has occurred within Westhaven has benefited from previously approved connections to the Westhaven CSD water system or has been approved with the use of individual onsite water systems.

WILLOW CREEK COMMUNITY SERVICES DISTRICT

Water Supply. The Willow Creek area receives water service from the Willow Creek Community Services District (CSD) which has 976 water service connections. The District anticipates being able to accommodate 1,000 through 1,200 service connections before meeting capacity. The Willow Creek CSD produced approximately 244 million gallons of drinking water in 2003, according to the 2004 DDW annual inspection report. Average daily use is estimated at approximately 0.668 MGD, and peak daily use was reported as 1.80 MGD in 2004. The District's source of supply consists of six wells located in the mouth of Willow Creek. The Willow Creek CSD operates six production wells. Four wells draw water from infiltration galleries in the Willow Creek, which are believed to be under the influence of surface water, and two wells separate from the infiltration gallery, which may or may not be under the influence of surface water. A new water treatment plant was completed in 2007, and has a design capacity of 2,140 gpm. If run for 23 hours per day, treatment capacity is approximately 2.953 MGD. Total source capacity is 2,610 gpm, or 3.76 MGD.

Willow Creek CSD's water system is generally in good condition, although per capita demand is very high (1,861 gpd/cap) and may be the result of system leaks. Current peak water use is approximately 48% of available production capacity. The new water treatment plant has been designed for 2,140 gpm, approximately 40% greater than existing peak day demands. The District does not have adequate storage capacity and has plans to construct of a new 400,000 gallon storage tank above the new treatment plant and Brannan Mountain Road.

Wastewater Capacity. Willow Creek has been evaluating alternatives for a community wastewater system for a number of years. Willow Creek's business center along Highway 299 is in need of a centralized wastewater system due to existing disposal field problems which currently limit development. A preliminary engineering report was prepared for the system in 2008 and additional alternatives are under consideration. The ultimate type, location, and construction schedule for a Willow Creek wastewater treatment plant is dependent upon future funding availability and NCRWQCB permitting requirements. The Willow Creek CSD received a Planning/ Preliminary Design Grant for a community wastewater system for the downtown area of Willow Creek. This grant will allow the community of Willow Creek to determine if a wastewater system is a possibility for the downtown area and help determine more detailed estimated costs. A Draft Environmental Impact Report for the Willow Creek Community Services District Downtown Wastewater Development Project was prepared in June, 2015 (SCH #2015012014) and a Final EIR was certified by the District in September, 2015.

In the meantime, owners of land in the downtown area wishing to develop their land may do so using onsite sewage disposal systems. Site conditions may require that non-standard systems be used, such as Wisconsin Mounds or At-Grade systems that not use subsurface leach lines for effluent disposal), which may require inspection and monitoring.

Rural Areas

Outside of more urbanized areas, residents and businesses receive water through smaller water systems. The definition of public water systems includes municipal type systems listed in Table 3.3-1, Summary of Public Water Service Providers and small systems that may only serve one subdivision. The following is the State of California's definition of a community water system:

> A system, regardless of type of ownership, for the provision of piped water to the public for domestic use, if such a system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days of the year. (CCR Title 22, Section 64400.10)

Small water systems are typically established in areas where there are no municipal water systems and where the density of development necessitates common source and infrastructure. Such systems are regulated by the State Water Resources Control Board Division of Drinking Water. The systems are further divided into three categories, which are defined below:

- Community Water System (CWS) is a public water system that serves at least 15 service connections used by yearlong residents or regularly serves at least 25 yearlong residents. This category includes municipal water systems and mutual water associations
- Non-Transient, Non-Community Water System (NTNC) is a public water system that is not a community system and that regularly serves at least the same 25 persons over six months of the year. Such systems are typically associated with schools, restaurants, or other businesses.
- Transient, Non-Community Water System (TNC) is a public water system that is not a community water system and does not regularly serve at least 25 of the same persons over six months per year. Transient systems would likely include hotels, resorts, and campgrounds.

In some rural areas, nearby residents have come together to create small water systems to satisfy their domestic water needs. A State Small Water System is a public water system that has 5 to 14 service connections, and does not regularly serve potable water to more than 25 individuals for more than 60 days out of the year (see California Code of Regulations Title 22. Social Security, Division 4. Environmental Health, Article 3. State Small Water System). An example would be a small residential neighborhood with 10 homes that is served by a single water supply. State Small Water Systems are regulated by the Humboldt County Department of Environmental Health.

State Small Water Systems in Humboldt County are found in areas such as rural residential subdivisions in the Fickle Hill, Trinidad, and Garberville areas, and mobile home parks. There are approximately 25 Small State Small Water System operating in Humboldt County.

Table 3.3-4, Water Connections by Systems Type, provides an estimate of the number of housing units that are served by public water systems (municipal and other Small Public Water Systems as

defined above), served by State Small Water Systems, and those that are assumed to use onsite water systems. Approximately 40 percent of housing units in the unincorporated area are supplied water through onsite systems.

Table 3.3-4. Water Connections by Systems Type.

Planning Watershed	Public Systems*	State Small Water Systems	Onsite Systems**
1-South Fork Eel River	1,943	19	1,554
2-Lower Eel River	799	17	1,630
3-Middle Main Eel River	79	0	462
4-Lower Klamath River	150	10	479
5-South Fork Trinity River	0	0	14
6-Lower Trinity River	976	0	1,319
7-Van Duzen River	457	42	999
8-Redwood Creek	140	0	199
9-Cape Mendocino	470	0	1,202
10-Trinidad	269	29	1,167
11-Mad River	6,101	10	1,897
12-Eureka Plain	8,614	85	3,324
Total	**19,998**	**212**	**14,246**

*From Table 3.3--1 Summary of Municipal Water Service Providers.
**the number of onsite systems was derived by subtracting existing connections to community water systems from an estimate of year 2007 total housing units within each planning watershed.

A significant percentage of homes in Humboldt County receive domestic water through individual onsite water systems supplied by stream and spring diversions or wells. The County Environmental Health Branch Land Use Program database identifies approximately 647 private wells in Humboldt County for domestic and agricultural use, noting that the Environmental Health Branch acknowledges that this database is incomplete and does not contain a significant number of existing domestic wells. Nevertheless, the location of these private wells serves as an indicator of the current state of groundwater development in unserved areas of the County. Data regarding well capacity and production is not available. Additional information regarding Humboldt County groundwater basins, well yields, and well statistics can be found in Table 3.10-3 Humboldt County Ground Water Basins in Section 3.10 Hydrology and Water Quality.

Table 3.3-5 presents information from the Humboldt County Health and Human Services Department, Public Health Branch well permitting database, and illustrates the distribution of wells within Humboldt County Planning Watersheds. As previously stated, based on the number of onsite water systems shown in Table 3.3-4, Water Connections by Systems Type, there are likely many more domestic wells than are reflected in this database.

Table 3.3-5. Private Wells in the Humboldt County.

Planning Watershed	Wells
1-South Fork Eel	42
2-Lower Eel	106
3-Middle Main Eel	26
4-Lower Klamath	2
5-South Fork Trinity	1

Planning Watershed	Wells
6-Lower Trinity	14
7-Van Duzen	105
8-Redwood Creek	8
9-Cape Mendocino	25
10-Trinidad	60
11-Mad River	120
12-Eureka Plain	138
Total	**647**

Source: Humboldt County Health and Human Services Department, Public Health Branch, 2010.

Pursuant to California Water Code Section 1205 and Order Number WR 98 – 08, the State Water Resources Control Board has declared the Klamath, Trinity, Mad, Eel, and Van Duzen Rivers and Jacoby Creek as "fully appropriated." This declaration means that the supply of water in the stream system is being fully applied to beneficial uses where the previous water rights decisions have determined that no water remains available for appropriation.

State law specifies that the Department of Water Resources can only accept applications for water use for fully appropriated stream systems that are consistent Section 4.0 through 4.14 of Order WR 98-08, which are General Conditions Applicable to Appropriation or Diversion of Water from Fully Appropriated Streams. However, a permit is not required from riparian right holders, ground water users, users of purchased waters, or those who use water from a spring or standing pool lacking a natural outlet on the land they are located. As a result, diversions from streams and rivers would likely not be approved, but certain types of diversions and groundwater wells could be established within fully appropriated streams within the County.

The Mattole River is not identified as fully appropriated, but the Mattole Restoration Council found that "in recent years, summer flows in the Mattole River have declined dramatically. Every year since 1999, agency scientists and concerned citizens have observed depleted summer flows upstream of the Bridge Creek confluence with the main stem. Since 2000, thousands of juvenile salmonids have died due to low flows in the headwaters area. And Mattole residents have suffered from the lack of surface water for both domestic and agriculture purposes." (2005 Mattole Watershed Plan) This would indicate that there is little Mattole River water available for consumption by new development during the dry summer months.

A report prepared for the California State Water Resources Control Board for the Instream Flows Policy for Northern California Coastal Streams (which includes the Mattole watershed) entitled the *North Coast Instream Flow Policy Restrictions on Flow Diversions and Storage, Potential Indirect Impacts on Municipal, Industrial and Agricultural Water Use and Related Indirect Impacts on Other Environmental Resources* (Stetson Engineers Inc., 2007) found that "future diversion demand for small water agencies and self-supplied individuals (in the Mattole River watershed) are small, 30 acre-feet per annum". This report further states that "if application of the Policy to specific water right applications shows that surface water is not available for appropriation, groundwater and surface water diverted under riparian right are the most likely alternative water supplies and both are likely adequate to satisfy the future diversion demand." This report estimated that future demand would be two to three times the existing demand, or an additional 30 to 60 acre-feet per year from the watershed. The report concluded that "implementation of the Policy potentially may result in the increased development of groundwater or surface water under riparian right in Humboldt County" and that "any indirect environmental impacts resulting from this increased development are not likely to be substantial given the small future diversion demand in this area."

The Stetson Engineers report "defines future diversion demand as the quantity of surface water that has been requested in pending water right applications (pending diversion demand) or that may be requested in new water right applications (new diversion demand). Pending diversion demand is estimated based on information from the State Water Board's Water Rights Information Management System (WRIMS) database. New diversion demand is estimated based on information from the UWMPs filed in the Policy area and projected urban and agricultural growth rates from the California Water Plan 2030 Quantified Future Scenarios." (Section 4, Future Diversion Demand, Page 10)

Jacoby Creek within the Eureka Plain Planning Watershed is designated as a fully appropriated stream. Planning watersheds that are not designated as fully appropriated streams, other than Cape Mendocino which is described in terms of the Mattole watershed above, may also have water supply difficulties. The Trinidad Planning Watershed contains Luffenholtz Creek which has been recognized by the County as the City of Trinidad's "Critical Water Supply Area" per Section 3362 of the Humboldt County Framework General Plan. The Framework Plan defines these areas as those "used by a specific municipality or community for its water supply system, which is so limited in area that it is susceptible to a potential risk of contamination from development activities."

The California Department of Fish and Wildlife submitted a comment letter regarding the General Plan Update Notice of Preparation on July 17, 2007, which states that water use from permitted and unpermitted development in some rural areas of the County has resulted in "headwater streams being entirely dewatered or with significantly impaired flows resulting." (Comment Letter W-96, Department of Fish and Game, 2007, page 13). "Unpermitted homes, especially in southern areas of the County, combined with illegal stream diversions for marijuana growing and other agricultural uses, is a significant, yet difficult to quantify problem." DFG notes that although they do require the issuance of Lake and Streambed Alteration Agreements, "water diversions pursuant to riparian rights do not require a permit from the State and actual diversion rates are largely unregulated and unknown." (Comment Letter W-96, Department of Fish and Game, 2007, page 13) The Department of Fish and Game finds that "there are compelling reasons to believe that too much water is diverted from many headwater streams in the County. Furthermore, water diversions are likely to become an increasingly significant issue for fish, wildlife and rural residents during the life of the (General Plan Update), as water rights applications increase."(Comment Letter W-96, Department of Fish and Game, 2007, page 13)

Agricultural Water Systems.

Agricultural water supply in Humboldt County is primarily related to dairies, including irrigated pasture, but also includes production of irrigated specialty crops. Water supply sources for ranch and dairy operations include individual wells and springs for domestic use and stock watering supply, and surface water stock ponds. Available water supply sources for irrigation include rainfall-derived surface water and groundwater from various watersheds, and recycled water. Irrigated agriculture in Humboldt County occurs in the Lower Eel, Eureka Plain, Mad River, Redwood Creek, Lower Trinity, Lower Klamath, and South Fork Eel planning watersheds. There are no sources of detailed information regarding the number of agricultural wells or their location, capacity, or productivity. Wells included in Table 3.3-5, Private Wells in the Humboldt County, likely include some agricultural wells. The discussion of wells and groundwater basins in Section 3.10, Hydrology and Water Quality, provides the best available information regarding agricultural water systems in Humboldt County. The discussion of groundwater conditions in Humboldt County includes Figure 3.10-1, Groundwater Basins in Humboldt County, which identifies the location of the 15 basins identified by the State of California. Table 3.10-3,

Humboldt County Ground Water Basins, displays information from the Department of Water Resources California's Groundwater, Bulletin 118, including groundwater basin area, rainfall, annual extraction volume, and in some cases estimated well yields.

Onsite Wastewater Treatment

Section 3.8, Geology and Soils, provides detailed background information and analysis of septic systems in Humboldt County. As indicated in that section, the Land Use Program of the Humboldt County Department of Health and Human Services Public Health Branch is responsible for the review and approval of applications to construct onsite wastewater systems. Determination of the suitability of soils is dependent on site-specific conditions and requires a thorough site investigation and analysis of the surface and subsurface characteristics.

The Humboldt County Code specifies that buildings that are within 300 feet of a public sewer shall be connected to the public system (Title VI, Water and Sewage, Division I, Sewage Disposal, Section 611-4). Outside of these areas, onsite wastewater systems are considered to be an appropriate means for sewage disposal. Onsite wastewater systems are used by more than 50 percent of households in Humboldt County. Requirements for onsite wastewater systems are specified by the County Public Health Branch and include setbacks for septic tanks and disposal fields from property lines, buildings, wells and water bodies, as well as cut and fill areas and unstable land forms. Setback distances vary depending upon whether the property has an individual water system or not. When soil conditions on a given property and setback distances are combined, parcels that would use onsite water and wastewater would need to be at least two acres. Where public water is available, minimum parcel size is typically one acre.

Table 3.3-6, Wastewater Service by System Type in Humboldt County, provides an estimate of the number of housing units that are served by municipal wastewater systems and those that are assumed to use onsite systems. Over half of all housing units in the unincorporated dispose of sewage using onsite wastewater systems.

Table 3.3-6. Wastewater Service by System Type in Humboldt County.

	Housing Units	
Planning Watershed	**Municipal Treatment**	**OnSite System**
1-South Fork Eel	1,332	2,184
2-Lower Eel	709	1,737
3-Middle Main Eel	0	541
4-Lower Klamath	0	639
5-South Fork Trinity	0	14
6-Lower Trinity	0	2,295
7-Van Duzen	0	1,498
8-Redwood Creek	0	339
9-Cape Mendocino	430	1,242
10-Trinidad	0	1,465
11-Mad River	5,433	2,575
12-Eureka Plain	6,734	5,289
Total	**14,638**	**19,818**

Solid Waste Disposal

This section summarizes existing conditions regarding the disposal of solid waste in the County. The following discussion addresses the structure of solid waste management in the County, the available methods of waste disposal, and landfill capacity. This analysis relies upon information from the Humboldt Waste Management Authority (HWMA); the 2014 and 2006 Five-Year Integrated Waste Management Review for Humboldt County; the 1995 Humboldt County Integrated Waste Management Plan; the 1993 Humboldt County Source Reduction and Recycling Element; and the 1993 Countywide Siting Element of the Humboldt County Integrated Waste Management Plan.

The California State Legislature established basic regulations for the formation of 'Garbage and Refuse Disposal Districts' for the management of solid wastes in 1927, and over the decades, expanded legislation to address the establishment and regulations for landfills, recycling and diversion of other related wastes. Due to concerns in the mid-1980s about statewide landfills reaching disposal capacity, the state legislature spurred the passage of AB 939 (Sher), "The Integrated Waste Management Act of 1989," which established a waste management hierarchy to guide local agencies in implementation of (1) source reduction, (2) recycling and composting, (3) environmentally safe transformation and land disposal, and (4) a 25% waste diversion mandate. Subsequent to the passage of AB 939, a number of state legislative bills continued to build on the diversion of specific materials from being landfilled and other waste diversion mandates. In 2010, the State legislature passed AB 341 (Chesbro) which set a statewide recycling goal of 75% by 2020 which is anticipated to be achieved through source reduction, recycling, and continued diversion of materials such as organic wastes.

The bulk of the legislative responsibilities for diversion activities falls primarily to solid waste generators; however, local jurisdictions are responsible for the enforcement and monitoring, and reporting data to CalRecycle on an annual basis.

Historically, incorporated and unincorporated communities in Humboldt County had localized areas where community refuse was disposed of. For several decades, refuse was open air burned with residual material pushed to the side. With the passage of the U.S. E.P.A's Clean Air Act in the late 1960's, the State of California banned open air burn dumps in 1969, as burning of solid waste was no longer an acceptable disposal method.

Throughout Humboldt County some of these former dump and burn sites were developed and permitted as landfills or paved over to serve as container sites. Most of these sites were small volume landfills or illegal dumpsites, and were in existence for less than two decades.

With the closing of most community dumps in the early 1970s, two landfills were permitted by the North Coast Regional Water Quality Control Board (NCRWQCB) and the County Health Department to accept municipal and solid waste for disposal from Humboldt County residents. With the permitting of the Table Bluff Landfill and the Cummings Road Landfill in the 1970s, most non-tribal solid waste generated in Humboldt County was disposed into these two local landfills.

Local Landfills

Cummings Road Landfill. Located two miles southeast of Eureka, the 33-acre Cummings Road Landfill was active as an open-air refuse disposal from 1933 to 1969. In 1972 the site was permitted as a Class III MSW (municipal solid waste) landfill, and operated by Eureka

Garbage Company. Municipal solid waste was received primarily from the communities of Arcata, Eureka, and surrounding unincorporated communities, until the closure of the Table Bluff Landfill in 1979. After 1979, municipal solid waste from Fortuna, Ferndale, Rio Dell and surrounding southern Humboldt communities was also transported and disposed at the Cummings Road Landfill.

Faced with diminishing capacity and a corrective action order by the NCRWQCB, the landfill was slated for closure in 1998. In 1999 the Humboldt Waste Management Authority (HWMA) was formed, and purchased the landfill to develop necessary engineering and design, perform the construction cap closure (the "cap" placed over the landfill site to keep water out and prevent the leaching of contaminants) and conduct 30 years of post-closure maintenance and monitoring. Construction closure of the Cummings Road Landfill was completed in October 2015, and closure certification is pending from the Humboldt County Local Enforcement Agency, State of California's CalRecycle and the NCRWQCB. The NCRWQCB issued MRP No. R1-2013-0014 "Monitoring and Reporting Program for HWMA Cummings Road Landfill".

Table Bluff Landfill. Located on property owned by the County of Humboldt along Hookton Road, Loleta near South Humboldt Bay, the Table Bluff Landfill operated from the 1930s as an informal gully dump, open dump, burn dump, sewage dump and landfill, and collected wastes from the communities of Loleta, Ferndale, Fortuna and surrounding communities until 1979. The site was capped and closed, and is regularly monitored as part of the post-closure monitoring activities performed by the Humboldt County Public Works Department. The NCRWQCB issued MRP No. 79-101 "Monitoring and Reporting Program for the County of Humboldt Table Bluff Solid Waste Disposal Site".

Replacement of the Cummings Road Landfill. With the closure of the Table Bluff Landfill, and pending closure of Cummings Road Landfill in the mid-1990s, community leaders began discussions in earnest to identify solid waste disposal options for Humboldt County and all its communities. The County of Humboldt formed a task force and conducted an extensive municipal landfill siting study in the mid-1990s to locate a replacement site for the Cummings Road Landfill. While the task force identified some potentially feasible sites for further study and potential expansion opportunities at the Cummings Road site, it determined that it was more cost effective to export waste to an established site.

In 1997 the Humboldt County Waste Management Authority (HCWMA), a Joint Powers Authority (JPA), was initially formed to provide a countywide and coordinated approach to the economical coordination of solid waste management and disposal services. Original JPA members included Humboldt County and the cities of Arcata, Blue Lake, Eureka, Ferndale, Fortuna and Rio Dell (Trinidad was not included for unknown reasons). The HCWMA was legally dissolved in June 1999 following the separation of the City of Fortuna from the organization, which then transferred HCWMA's assets to the newly formed Humboldt Waste Management Authority (HWMA). The new JPA members include Humboldt County and the cities of Arcata, Blue Lake, Eureka, Ferndale, Rio Dell, and Trinidad. HWMA manages contracts with solid waste disposal companies and coordinates the disposal of waste collected within the boundaries of member jurisdictions. In addition, HWMA manages waste reduction programs on behalf of Humboldt County.

HWMA owns and operates the Hawthorne Street Transfer Station (HSTS), the Eureka Recycling Center and the Cummings Road Landfill. Member agencies direct their respective franchise solid waste haulers to HSTS, or to one of HWMA's contracted satellite facilities, to dispose of the solid waste. HWMA manages contracts for the transportation and disposal of member

agency solid waste to out of the area landfill(s). In addition, HWMA manages waste reduction programs on behalf of its member agencies and operates a variety of collection and diversion programs.

However, not all solid waste generated in Humboldt County flows through the HSTS. Several smaller, privately owned transfer stations provide solid waste disposal for cities and the general public, or construction and demolition debris processing and transfer services for contractors and the general public. Solid waste received by these facilities is also transported to and disposed of at out-of-area landfills. Solid waste is collected by commercial curbside collection companies (not available in all areas), self-hauled by generators to rural container sites or transfer stations, or direct hauled to out-of-area landfills.

Franchise Haulers. Many residents living in incorporated or unincorporated areas of the County are served by licensed commercial waste haulers ("franchise haulers"). In the unincorporated County, there are nine specific franchise areas with services provided by one of five commercial haulers. The seven cities within the County are also served by five commercial waste haulers. The level of curbside collection service provided is dependent upon the individual franchise agreements entered into between the hauler and the local jurisdiction (i.e. curbside recycling, green waste collection or other services).

The Humboldt County Public Works Department manages County franchise agreements so approved commercial haulers may collect curbside materials, and transport and dispose material at designated transfer stations. Franchise areas in unincorporated Humboldt include:

Fortuna/Ferndale
Garberville/Redway
Blue Lake/Fieldbrook
Greater Arcata Area
Greater Eureka Area
Holmes/Redcrest
McKinleyville
Weott/Meyers Flat
Willow Creek

Current commercial haulers include: Arcata Garbage (Arcata area), Eel River Disposal (mid-southern Humboldt) Humboldt Sanitation (northern Humboldt), Tom's Trash (Eastern Humboldt through Eel River Disposal assignment), and Recology Humboldt County (Humboldt County (Eureka area and mid-southern Humboldt).

Self-Haul. Humboldt residents and businesses have the option to self-haul solid waste to permitted transfer stations and container sites located in several areas of Humboldt County.

Direct Haul. Some large volume contractors direct haul solid waste to out-of-area landfills, bypassing local transfer stations. Waste volume is reported to the originating jurisdiction by the receiving landfill.

Rural Container Sites. The County Public Works Department contracts for the operation of ten sites where residents in rural communities may dispose of household solid waste at noticed days and times. Material is disposed into 40-yard roll-off bins that are then hauled to a designated transfer station. Container sites include: Orleans-Willow Creek, Orick, Redwood Valley, Petrolia, Fruitland, Blocksburg, Shelter Cove, Whitethorn, and Alderpoint.

The Humboldt County Public Works Department contracts with companies to operate and maintain the rural container sites. Contracted operators include: Humboldt Sanitation (northern Humboldt) and Eel River Disposal (southern Humboldt).

Transfer Stations and Processing Facilities

Humboldt Waste Management Authority (Eureka). HWMA owns and operates the large volume HSTS. The Eureka Community Recycling Center exists at the same location.

HWMA is responsible for the transportation of approximately 80% of the County's municipal solid waste to out-of-area landfills. Franchise solid waste from the County, and from the incorporated cities of Arcata, Blue Lake, and Eureka is delivered to the HSTS. Franchise solid waste from Ferndale, Rio Dell and surrounding unincorporated Humboldt is delivered to Eel River Disposal's transfer station in Fortuna under a satellite agreement between HWMA and Eel River Disposal. This waste is loaded into HWMA's contracted transportation hauler trailer, and transported to the landfill. Residents from throughout the County may also self-haul their waste to any of the container sites and transfer stations.

HWMA also receives recyclables, universal and household hazardous waste at the HSTS site. In addition, HWMA works with local jurisdictions to hold mobile collection events throughout the County.

HWMA's Eureka Recycling Center is a state certified CA Redemption Value (CRV) Buy-Back facility, which manages, processes and markets mixed-stream and single-stream recyclables.

Humboldt Sanitation (McKinleyville). Humboldt Sanitation operates a medium volume transfer station in McKinleyville. In addition to franchise and self-hauled solid waste, the facility also receives mixed stream and single stream recyclables for marketing purposes. The McKinleyville facility is a state certified CA Redemption Value (CRV) Buy-Back facility.

Eel River Disposal (Fortuna). Eel River Disposal & Resource Recovery operates a medium volume transfer station in Fortuna. In addition to franchise and self-hauled solid waste, it also receives mixed stream recyclables which are sorted and processed for marketing purposes. The facility is a state certified CA Redemption Value (CRV) Buy-Back facility.

Samoa Waste Recovery Facility (SWRF) (Samoa). Eel River Disposal & Resource Recovery operates a medium volume transfer station in Samoa which receives solid waste primarily from self-haul customers. SWRF receives mixed stream recyclables which are sorted and processed for marketing purposes.

Eel River Transportation and Salvage (Fortuna). Eel River Transportation and Salvage operates a medium volume processing facility that accepts construction, demolition and inert debris. The debris is self-hauled by the general public and commercial haulers, or transported in vehicles owned by Eel River Disposal to the facility. Salvageable and recyclable material is separated for processing, and residual waste is hauled to the Eel River Disposal Fortuna Transfer Station.

Redway Transfer Station (Redway). The County owns and contracts with Eel River Disposal for the operation of the medium volume Redway Transfer Station. Solid waste and recyclables are received from franchise haulers or self-hauled to the facility, where material is loaded into transport trailers. The Redway facility provides state certified CA Redemption Value (CRV) Buy-Back services.

Kernen Construction (Arcata). Kernen Construction operates a medium volume transfer station. This facility accepts non-hazardous construction and demolition debris mostly from

known contractors. The debris is sorted for salvageable material and residual waste is hauled to an out-of-area landfill (see below). Kernen Construction also operates a separate inert debris recycling center which receives source-separated material for recycling and sale.

Alves Incorporated (Arcata). Alves Inc. operates a small volume construction, demolition/inert debris processing operation and a separate inert debris recycling center which accepts source-separated material for recycling. Debris is received mostly from Alves job sites or known contractors, but a small amount is self-hauled by the general public. Most of the salvaged material is processed onsite to produce recycled base rock for roads and driveways, but other materials such as steel and wood are salvaged and processed separately. Residual waste is hauled to an out-of-area landfill (see below).

S and Z Construction (Fields Landing). This is a small volume construction, demolition/inert debris processing operation that accepts debris from its own job sites and from other contractors. Recyclables are sorted onsite and hauled elsewhere for processing, and the residual waste is hauled to the HSTS.

Out-of-area landfills

Solid waste from Humboldt County is largely transported to one of three out-of-area landfills for disposal: the Anderson Landfill in Shasta County; Dry Creek Landfill in Medford, Oregon; and Potrero Hills Landfill in Suisun City.

HWMA manages the transport of member agency solid waste from the HSTS and from contracted transfer stations. Effective November 1, 2016, all waste is transported under a contract with Solid Waste of Willits to the Potrero Hills Landfill. This contract for services expires June 1, 2024. Kernen Construction uses the same hauler to take their residual waste to Potrero Hills.

Humboldt Sanitation manages the transport of self-hauled and non-HWMA member waste from the northern areas of the County. Solid waste is currently transported to Dry Creek Landfill for disposal. It is anticipated that Dry Creek Landfill could provide disposal capacity for its current service area for another 75 to 100 years.

Eel River Disposal manages the transport of self-hauled and non-HWMA member waste, as well as waste received at the Redway Transfer Station. Solid waste is transported for disposal to the Anderson Landfill for disposal by Eel River Disposal, and Alves Inc. also hauls residual waste from its operation to Anderson. This landfill is not expected to close until 2036.

Integrated Waste Management Plan

Pursuant to the California Integrated Waste Management Act of 1989, the State has mandated a 50 percent reduction in the rate of solid waste directed to the landfill by 2000 for all municipal solid waste, and established a statewide diversion 75% goal by 2020 for all municipal solid waste. To encourage the increase in diversion of solid waste from landfills, the California Integrated Waste Management Act also required that each jurisdiction prepare a local Integrated Waste Management Plan (IWMP) that evaluates recycling programs, purchasing of recycled products, and waste minimization.

The County has prepared and adopted an IWMP, consistent with the Integrated Waste Management Act. The IWMP addresses source reduction and recycling, household hazardous waste, and countywide landfill capacity needs. Solid waste generation in

Humboldt County has been reduced by over half between the years 1990 to 2014, decreasing from 168,575 to 75,467.33 annual tons. The unincorporated area disposed of approximately 33,570.18 tons of solid waste in 2014, approximately 2.6 pounds per person per day. The 2014 waste diversion rate for the unincorporated area of Humboldt County is 79%, according to the most recent Jurisdiction Profile published by the California Department of Resources Recycling and Recovery (CalRecycle).

Illegal Dumping

Illegal dumping occurs throughout Humboldt County. The County Public Health Branch and the Code Enforcement Unit respond to complaints regarding illegal dumping. Countywide dumping complaints range from approximately 100 to 200 per year and include nuisance roadside garbage dumps, illegal disposal sites, sharps/needle dumps, and abandoned appliances or vehicles on abandoned roadsides. Disposal costs for illegally dumped material is covered, in part, by a portion of HWMA's waste management fee (aka disposal fee) to off-set costs incurred by public agencies and non-profit organizations for cleaning up illegal dump sites. Humboldt County Code, Title V, Health and Safety, Division 2, Solid Waste and Source Separated Materials, establishes fines and possible jail time for dumping-related offenses.

3.3.2 Utilities and Service Systems - Standards of Significance

This analysis uses the significance criteria from the CEQA Guidelines Appendix G. The proposed General Plan Update would result in a significant impact on utilities and service systems if it would:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
d) Have insufficient water supplies available to serve the project from existing entitlements and resources.
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
f) Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.
g) Not comply with federal, state, and local statutes and regulations related to solid waste.

Items "a", "b" (with respect to wastewater), and "e" are discussed together Impact 3.3.3.1, Wastewater Services. Items "b" (with respect to water supply) and "d" are discussed as Impact 3.3.3.2, Water Supply. Item "c" is discussed in Impact 3.3.3.3, New Storm Water Drainage Facilities as well as in Chapter 8, Hydrology, as part of Impact 4.8.2.4. Items "f" and "g" are discussed as part of Impact 3.3.3.4, Solid Waste Disposal.

3.3.3 Utilities and Services -Impacts and Mitigation Measures

Impact 3.3.3.1. Wastewater Services

Population growth during the General Plan Update planning period could exceed wastewater treatment requirements, result in a determination by the wastewater treatment provider that it has inadequate capacity, or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

This impact analysis addresses items "a," "b," and "e" of the significance standards listed Appendix G of the CEQA Guidelines as provided in Section 3.3.2 above. Pursuant to these standards, the proposed General Plan Update would have a significant impact if it would:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

Wastewater disposal within urbanized areas is primarily accomplished by sewers and sewage treatment plants. In rural areas, wastewater is disposed of by individual onsite wastewater systems. Each of these systems of waste disposal present potential impacts to the environment, including potential health hazards to the population and possible water quality impacts. The use of septic systems resulting from implementation of the General Plan Update is analyzed in Impact 3.8.3.4, Septic Suitability, in the Geology and Soils section of this EIR.

Implementation of the proposed General Plan Update would result in additional development that would generate wastewater. The increased generation of wastewater could cause a need for additional wastewater collection and treatment capacity, the development of which would be required to be consistent with permits issued by the North Coast Regional Water Quality Control Board (NCRWQCB). Development of additional capacity is expected to have potentially significant impacts as discussed below.

The Community Infrastructure and Services Technical Report serves as the basis for the evaluation of wastewater capacity. The data presented in to Table ES-1, Summary of infrastructure capacity limitations within the County, and Section 7.0, Wastewater Systems, has been updated by the Humboldt County Planning and Building Department with input from service providers obtained in connection with the Humboldt County Housing Element Update and General Plan Update.

In instances where capacity related wastewater system improvement projects are known, the EIR describes those proposed projects. Where new development would exceed current capacity and there are no planned improvements, the following paragraphs provide a general discussion of the circumstances and the potential environmental effects that could result. In general, wastewater system improvement projects include the following components:

Wastewater projects are typically located at or adjacent to existing facilities. The acreage required for the projects varies depending on the type of treatment process, planned capacity

of the improvement, and the improvement type. Some projects may not require changes to a wastewater treatment plant footprint (e.g., City of Ferndale Wastewater Treatment Facility, State Clearinghouse No. 2006062115) while larger projects may be over 100 acres (e.g., City of Rio Dell Wastewater Reuse Project State Clearinghouse Number 2007062006).

Based on the EIRs for recently proposed wastewater treatment projects (see previous paragraph), potentially significant impacts may include: light and glare; visual character; loss of agricultural resources; construction related air quality impacts; disturbances to riparian vegetation; disturbances to threatened or endangered species; accidental disturbance of cultural resources; potential erosion; exposure to geologic hazards; release or disturbance of hazardous materials during construction; construction related traffic.

Potential environmental impacts will vary based on the type, size, and location of the wastewater treatment plant as well as the natural resources and population density in the area. While the effects of each improvement project will vary, the discussion above describes the general nature of impacts that can be expected and the likelihood that feasible mitigation measures will be available to reduce or avoid those impacts. The Garberville Sanitary District recently reconstructed its wastewater treatment plant and replaced some of its collection system (Garberville Sanitary District Treatment Plant Improvement, Mitigated Negative Declaration, 2005, SCH No. 2005062051), and was able to mitigate all environmental impacts to a less than significant level.

Table 3.3-7 identifies projected growth in housing units in 2028 and the existing and currently available connections for each wastewater system serving the unincorporated area, based on the Community Infrastructure and Services Technical Report, Section 7, Wastewater Service.

Table 3.3-7. Projected New Housing Units in 2028 by Wastewater Service Provider

Service Provider	*Connections*		*Housing Units 2028*
	Existing	*Currently Available*	
1-South Fork Eel River Planning Watershed			
Garberville SD	353	180	3
Miranda CSD	*110*	*59*	25
Redway CSD	*735*	*0*	74
Weott CSD	*134*	*151*	3
2-Lower Eel River Planning Watershed			
Loleta CSD	*260*	*0*	*10*
Palmer Creek CSD	*154*	*0*	*33*
Scotia CSD	*295*	*0*	*0*
9-Cape Mendocino Planning Watershed			
RID (Shelter Cove)	*430*	*273*	*131*
11-Mad River Planning Watershed			
Fieldbrook Glendale CSD	*166*	80-100	*71*
McKinleyville CSD	5,267	*781*	*229*
12-Eureka Plain Planning Watershed			
Humboldt CSD	6,285	2,689	*642*

Service Provider	Connections		Housing Units 2028
	Existing	Currently Available	
Manila CSD	*449*	*495*	*79*

Source: Community Infrastructure and Services Technical Report, 2008, Humboldt County Planning and Building, 2016.

The following is an analysis of the capacity of existing wastewater systems to accommodate projected growth at the peak of the General Plan Update planning period, the year 2028.

Impacts That Are Less Than Significant

Table 3.3-7. Projected New Housing Units in 2028 by Wastewater Service Provider summarizes the estimated wastewater treatment capacity for each system serving the unincorporated area (see Utilities and Service Systems -Environmental Setting, Municipal Water and Wastewater Service for detail regarding each system) and compares that capacity to the projected growth within the system service area at the peak of the General Plan Update planning period, the year 2028 For the following six wastewater service providers, projected growth during the planning period would not exceed wastewater treatment capacity or requirements or result in significant environmental effects associated with the construction of new wastewater treatment facilities or expansion of existing facilities.

Miranda CSD. Approximately 25 housing units are projected to be developed within Miranda by 2028, which is less than half of the 59 additional connections that are estimated to be available.

Garberville SD. Approximately three housing units are projected to be developed within Garberville by 2028, which is fraction of the 180 additional connections that are estimated to be available.

Weott CSD. The Weott CSD is estimated to have the capacity for up to 151 additional sewer connections. Approximately three additional housing units are projected to be developed within the Weott CSD service area during General Plan Update planning period.

RID No. 1 (Shelter Cove). The RID No. 1 is estimated to have the capacity for approximately 286 additional sewer connections. Approximately 131 additional housing units are projected to be developed within the RID No. 1 sewer service area during General Plan Update planning period.

Humboldt CSD. Humboldt CSD's share of the Elk River WWTP capacity is about 2,689 additional equivalent dwelling units. Approximately 642 additional housing units are projected to be developed within the Humboldt HCSD sewer service area during General Plan Update planning period.

Manila CSD. The Manila CSD is estimated to have the capacity for approximately 485 additional sewer connections. Approximately 79 additional housing units are projected to be developed within Manila CSD during General Plan Update planning period. Given that projected housing growth is less than 20 percent of available sewer capacity, wastewater treatment requirements would not be exceeded and new wastewater treatment facilities or expansion of existing facilities would likely not be required.

Impacts That Are Potentially Significant

For the following six wastewater service providers, projected growth during the planning period would likely exceed wastewater treatment requirements and may result in significant

environmental effects associated with the construction of new wastewater treatment facilities or expansion of existing facilities.

Fieldbrook-Glendale CSD (Glendale Area). The Fieldbrook Glendale CSD contract with the City of Arcata could accommodate approximately 80 to 100 additional housing units in the Glendale area, based on metered wastewater flow. Approximately 71 additional housing units are projected to be developed within the Glendale area during General Plan Update planning period. The projected housing growth is less than the available wastewater capacity based on the equivalent dwelling unit range of 80-100 additional units of capacity. However, the remaining contract capacity is based on flow and there is no guarantee that the projected growth of 71 units can be accommodated under the current contract with the City of Arcata. As a result, wastewater treatment requirements may be exceeded and new wastewater treatment facilities or expansion of existing facilities may be required.

McKinleyville CSD. Growth of approximately 229 additional housing units is projected to occur within the McKinleyville CSD at the population peak of General Plan Update planning period, 2028. The McKinleyville CSD is carrying out upgrades to its wastewater treatment plant that are intended to address the needs for the facility through the year 2030. Collection system capacity is limited to a combined total of 781 total equivalent dwelling units by three gravity trunk lines (north, middle, south) that convey wastewater from the east side of U.S. 101 to west where the WWMF is located. Given that projected housing growth is approximately one third of the constrained capacity of the sewer collection system available sewer capacity, wastewater treatment requirements would not likely be exceeded and new wastewater treatment facilities or expansion of existing facilities would likely not be required. However, the capacity of the wastewater system varies by location with McKinleyville and it is possible that growth during the General Plan Update planning period would trigger the need for significant collection system improvements. Recommended improvements to the collection system network include installing parallel pipe networks adjacent to each main line in these areas. Additional improvements are recommended at the system lift stations. Total costs for the proposed collection system upgrades were estimated to be $3.4M. The central gravity main that crosses Highway 101 is planned for upgrade within the next 5 years, but as of yet no funding is appropriated. The southern gravity main is not planned for improvement at this time and no funding is available. As a result, new wastewater treatment facilities or expansion of existing facilities may be required.

Loleta CSD. The Loleta CSD is operating under a cease and desist order, which prohibits additional influent from new or increased connections. Therefore, the ten new housing units that are projected to be developed in Loleta during the planning period would exceed wastewater treatment requirements and may result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Palmer Creek CSD. The Palmer Creek CSD is at or near its contracted limit for wastewater flows with the City of Fortuna. This contract may need to be amended to allow additional development within the District. Approximately 33 additional housing units are projected to be developed within the Palmer Creek CSD service area during General Plan Update planning period. Therefore, the projected growth during the planning period may exceed wastewater treatment requirements and may result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Redway CSD. The Redway CSD wastewater collection and treatment system is at or near capacity according to the Redway CSD Water and Wastewater Systems Capacity Analysis,

WWE 2014, and thus any new growth that would result in connections to the Redway CSD wastewater system could result in potentially significant impacts. Approximately 74 housing units are projected to be developed within Redway by 2028. Therefore, the projected level of development during the planning period may exceed wastewater treatment requirements, or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Scotia CSD. No new additional housing units are projected to be developed within the Scotia CSD sewer service area during General Plan Update planning period; however, given the extensive commercial and industrial land available within the District, other development may occur during the General Plan Update planning period that could generate wastewater. The precise capacity of the wastewater treatment plant is unknown and available information indicates that substantial improvements to the plant may be required to reduce flood hazards as well as to meet current and anticipated treatment standards. Therefore, potential development during the planning period may exceed wastewater treatment requirements, or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Analysis of Relevant General Plan Update Policies

The Community Infrastructure and Services Element of the General Plan Update was developed to provide policies and programs to ensure service capacity, including wastewater capacity, keeps pace with development. If it is not feasible to increase capacity, several policies summarized below would ensure that approved development is limited to available permitted capacity.

Policy IS-P1, Coordination with Service Providers, requires that the County cooperate with service providers, including wastewater system operators, to identify system needs and service limitations, secure funding, and implement infrastructure and public service projects consistent with the General Plan Update and capital improvement plans. Policy IS-P4, Requirements for Discretionary Development, requires that the County assess service needs associated with discretionary development greater than a single family home and/or second unit relative to local standards as well as state and federal regulations and only approve development where service can be adequately provided, or evidence in the record supports a finding that approval will not adversely impacts health, welfare, and safety or plans to provide infrastructure or services to the community. Policies IS-P8, Infrastructure and Services Capacity, and IS-P9, Capacity of Facilities and Land Use Decisions, require that the County monitor wastewater service capacity in coordination with service providers. These policies direct the County evaluate wastewater capacity and in order to determine adequacy for land uses. IS-P19, Water and Wastewater System Capital Improvement Programs, indicates that the County would support the efforts of service providers to develop and maintain capital improvement programs for construction of water and wastewater systems

Standard IS-S2, Service Inadequacies and Development Limitations, requires the County to request formal notices of capacity limitations within Urban Development Areas (areas served by public wastewater systems) and to reflect such limitations in land use and permitting decisions. Standard IS-S6, Water and Wastewater Service Commitment for Proposed Development, would require that the County receive written approval from the service provider prior to final discretionary development approval. In addition, Land Use Element Growth Planning Standard GP-S7, Required Findings for Urban Expansion, requires that the expansion of Urban Development Areas include the evaluation of sewer availability and include a finding that sewer systems demonstrate current or expansion capacity to serve the proposed addition.

The analysis above indicates that six wastewater systems could accommodate development projected to occur during the General Plan planning period, and six would need improved to expanded capacity or to meet wastewater treatment requirements. As a result, the proposed General Plan would result in the need, or facilitate the need, for additional wastewater collection, treatment, and disposal facilities.

Provision of adequate wastewater system capacity is the responsibility of service providers that are not under the jurisdiction of the County. These agencies are organized in various ways and generally operate to maintain their systems and facilities to serve existing users in a manner consistent with their permit from the NCRWQCB, and to accommodate planned development consistent with the General Plan within their jurisdictional boundaries when feasible. Although many providers are planning future improvements and expansions to accommodate growth projected as a result of the General Plan, the feasibility of providing service will be affected by the cost of improvements required, funding limitations, permitting, and environmental considerations.

Wastewater improvement projects would be carried out by the appropriate service provider, which would also conduct the required project-specific environmental analysis. If the wastewater improvement project could have potentially significant environmental effects that could not feasibly be mitigated to a less than significant level, an EIR would be prepared. The above-listed General Plan Update policies would direct the County to work cooperatively with the service provider to plan and implement the project in conformance with this plan.

The following is a summary of General Plan Update policies that would reduce construction related environmental impacts from new or expanded wastewater facilities:

- The Circulation Element contains policies to reduce traffic impacts of new and expanded wastewater facilities by utilizing traffic impact thresholds (C-P5, Level of Service Criteria) and by requiring that new discretionary development be conditioned to proportionally mitigate significant traffic impacts through construction of on- and off-site improvements and dedication of rights-of-way (C-P4. Mitigation Measures).
- The Conservation and Open Space Element, Biological Resources Section of the General Plan Update contains policies to reduce impacts to plants, animals, and habitat by planning land containing sensitive and critical habitats for uses for long term habitat sustainability (BR-P1, Compatible Land Use); conditioning projects with a federal nexus to avoid impacts to critical habitat where such resources are present (BR-P2, Critical Habitat); regulating development within streamside management areas to minimize adverse environmental effects (BR-P6, Development within Streamside Management Areas); and through the delineation and protection of wetlands (BR-P-7, Wetland Identification, and BR-S10 Development Standards).
- The Water Resources Element contains policies regarding critical watersheds to protect municipal water supplies from the environmental effects of development (WR-P4, Critical Municipal Water Supply Areas) and to limit the effects of development upon threatened and endangered species including coho salmon habitat (WR-P5, Critical Watershed Areas); minimizing erosion and sediment discharge through the implementation of performance standards (WR-Px2, Mitigate Controllable Sediment Discharge Sites; WR-P8, Erosion and Sediment Discharge; and WR-P36, Erosion and Sediment Control Measures); and by limiting the transmission of contaminants from parking lots to the storm water system by requiring oil water separators (WR-P35, Oil/Water Separation).
- Noise Element policies are intended to minimize short-term noise and noise from stationary sources through the application of appropriate standards (N-P1, Minimize

Noise from Stationary and Mobile Sources) and through application of noise performance standards (N-S8, Short-Term Noise Performance Standards (Lmax)).

- The Safety Element contains policies to plan land use and new development to reduce hazards (S-P1, Reduce the Potential for Loss); applying state geologic and seismic standards to new development (S-P6, Structural Hazards); regulating uses around airports consistent with Airport Land Use Compatibility Plans (S-P21, Development Compatibility and S-P22, Airport Land Use Compatibility Criteria), and by regulating land uses in flood hazard areas (S-P10, Federal Flood Insurance Program).
- Air Quality Element policies require that construction and grading dust control measures achieve local air quality standards (AQ-P4, Construction and Grading Dust Control) and air quality impacts of new development are reduced through the implementation of mitigation measures during discretionary review (AQ-P5, Air Quality Impacts from New Development).

Conclusion

Buildout of the General Plan Update would exceed the capacity of some wastewater service providers. However, Policies IS-P8, Infrastructure and Services Capacity, and IS-P9, Capacity of Facilities and Land Use Decisions, require that the County coordinate with service providers and monitor wastewater service capacity in order to determine adequacy for land uses, and Standard IS-S2, Service Inadequacies and Development Limitations, requires the County to request formal notices of capacity limitations within areas served by public wastewater systems and to reflect such limitations in land use and permitting decisions. In combination with the other General Plan Update policies and measures referenced above, these policies would reduce potential impacts relating to exceedances of wastewater capacity to a less than significant level.

The nature and location of any potential new or expanded wastewater facilities, such as collection, treatment, and disposal facilities, that could be constructed by a service provider and that do not trigger a County land use approval by the County is not known. As a result, the potential impacts of these facilities are too speculative for evaluation in this first tier programmatic EIR. If potential new or expanded wastewater facilities are within the responsibility and jurisdiction of other public agencies, and not the County, appropriate mitigation can and should be adopted by such other agency, or other findings made after certification of an EIR in accordance with CEQA.

If the new or expanded wastewater were to be constructed as part of a subdivision map approval or other process requiring County discretionary land use approval, such as an amendment to the General Plan Land Use Map, rezone, use permit, or a special permit, the County would ensure that environmental impacts are addressed through appropriate site-specific mitigation measures and the application of the policies listed above, appropriate Zoning Regulations, and its land use authority. Therefore, with implementation of the General Plan Update policies, impacts relating to new wastewater treatment facilities or expansion of existing facilities triggered by the General Plan would be **less than significant**.

Mitigation

None required.

Impact 3.3.3.2. Water Supply

Population growth during the General Plan Update planning period could result in insufficient water supplies from existing entitlements and resources, or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

This impact analysis addresses items "b", and "d" of the significance standards listed in Appendix G of the CEQA Guidelines as provided in Section 3.3.2 above. Pursuant to these standards, the proposed General Plan Update would have a significant impact if it would:

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
d) Have insufficient water supplies available to serve the project from existing entitlements and resources.

Demand for water would continue to increase with the population and job growth projected to occur during the General Plan Update planning period, and the need for additional water supply, treatment, and distribution facilities would also increase. Future residential development is encouraged within Urban Development and Community Plan Areas, and such development would obtain water services from special districts or public utilities providing service to each respective area. Areas outside of such boundaries would require individual onsite water sources.

Areas served by the Humboldt Bay Municipal Water District (HBMWD) include the Fieldbrook-Glendale, Humboldt, Manila, and McKinleyville Community Service Districts, the Jacoby Creek County Water District (through the City of Arcata), the Town of Samoa, and the cities of Arcata, Blue Lake, and Eureka. A significant portion of planned development is expected to be concentrated in existing urban areas that are supplied by the HBMWD. HBMWD can deliver up to 20 million gallons daily. Growth projected to occur by 2040 in areas served by HBMWD is not expected to require significant expansion of existing water supply facilities.

Table 3.3-8, Projected Housing Units (2028) by Water Service Provider, lists the existing and available water connection for each of the municipal water provides in the County and the housing units that are projected to be developed within the service boundaries of each provider at the DOF projected population peak in 2028.

Table 3.3-8. Projected Housing Units (2028) by Water Service Provider.

Provider	*Connections*		*Housing Units 2028*
	Existing	*Currently Available*	
1-South Fork Eel River Planning Watershed			
Benbow Water Company	134	50	17
Briceland CSD	26	0	0
Garberville SD	396	25	3
Miranda CSD	143	77	25
Phillipsville CSD	65	0	0
Redway CSD	735	0	74
Weott CSD	140	Unknown	3

Provider	Connections		Housing Units 2028
	Existing	Currently Available	
2-Lower Eel River Planning Watershed			
Loleta CSD	258	56	10
Palmer Creek CSD	128	59	33
Riverside CSD	98	60	0
Scotia CSD	315	1,117	0
3-Middle Main Eel River Planning Watershed			
Alderpoint CWD	79	66	0
4-Lower Klamath River Planning Watershed			
Orleans CSD	150	0	2
6-Lower Trinity River Planning Watershed			
Willow Creek CSD	976	609	10
7-Van Duzen River Planning Watershed			
Hydesville CWD	457	319	37
8-Redwood Creek River Planning Watershed			
Orick CSD	140	37	3
9-Cape Mendocino Planning Watershed			
RID (Shelter Cove)	470	520	133
10-Trinidad Planning Watershed			
Big Lagoon CSD	36	0	0
Westhaven CSD	233	0	0
11-Mad River Planning Watershed			
Fieldbrook Glendale CSD	584	Not limiting (HBMWD)	76
McKinleyville CSD	5,517	Not limiting (HBMWD)	229
12-Eureka Plain Planning Watershed			
Humboldt CSD	7,698	Not limiting (HBMWD)	649
Jacoby Creek CWD	569	Not limiting (HBMWD)	1
Manila CSD	347	Not limiting (HBMWD)	79

Source: Community Infrastructure and Services Technical Report, 2008; Humboldt County Planning and Building, 2016.

The following is a discussion of each of the public water systems in Humboldt County and its ability to accommodate projected peak housing development during the General Plan Update planning period. It is assumed that each of the systems would need to make necessary improvements to distribution and storage facilities to serve new development. The discussion below focuses on the degree to which projected peak housing development during the General Plan Update planning period would trigger the need for capacity related improvements such as new treatment facilities or additional water supplies.

In instances where capacity related water improvement projects are known, this EIR describes those proposed projects in the discussion of each provider. Where projected peak housing development during the General Plan Update planning period would exceed current capacity

and there are no planned improvements, the paragraphs below provide a general discussion of the circumstances and the potential environmental effects that could result from projects to increase capacity. In general, facilities required to serve projected population growth and development could include additional wells or infiltration galleries, water treatment systems, pipelines, pumps, tanks or other reservoirs, and distribution facilities. As water reuse increases, facilities that recycle used water may also be appropriate, depending on the needs and circumstances of each water service provider. The site-specific impacts of these facilities cannot be determined until such facilities are proposed.

Capacity related water infrastructure projects are typically located at or adjacent to existing facilities. The acreage required for the projects varies depending on the type and capacity of water system and the specific improvement. Some projects may be as small as a few hundred square feet (e.g., a new pump shed or expanding a filter facility) while larger projects may be several acres (e.g., a completely new treatment facility or infiltration gallery.

Based on CEQA environmental review documents prepared for recently proposed water improvement projects (in particular, the Initial Study and Environmental Checklist for Garberville Sanitary District Water System Improvement Project Mitigated Negative Declaration, State Clearing House Number 2009122069), potentially significant impacts may include impacts to scenic vistas, visual character of the site and its surroundings, light and glare; air quality impacts such as construction related PM10 emissions, and exposure of sensitive receptors to substantial pollutant concentrations; adverse effects on candidate, sensitive, or special status species or migratory fish or wildlife species or migratory wildlife corridors, or impacts to riparian habitat, federally protected wetlands or other sensitive natural community; substantial adverse changes in the significance of a cultural resource or disturbances to human remains; substantial soil erosion or the loss of topsoil; substantially alter existing drainage patterns or contribute to excessive runoff; and substantial temporary or periodic increase in ambient noise levels. For these recent projects the environmental review identified feasible mitigation measures for all impacts, and identified no significant and unavoidable impacts. While the effects of each improvement project will vary, the discussion above describes the general nature of impacts that can be expected and the likelihood that feasible mitigation measures will be available to reduce or avoid those impacts.

The following is an analysis of the capacity of existing water systems to accommodate projected growth at the peak of the General Plan Update planning period, 2028.

Impacts That Are Less Than Significant

For the following 14 water service providers, projected growth during the planning period would not result in insufficient water supplies available to serve planned development from existing entitlements and resources or require or result in the construction of new water treatment facilities or expansion of existing facilities.

Benbow Water Company. The Benbow Water Company recently made water treatment improvements and states that system designs were intended to accommodate the existing population plus an additional 50 connections. Approximately 17 new housing units are projected to be constructed within the Benbow Water Company service area by the projected 2028 population peak of the General Plan planning period. This level of development is would consume approximately 34 percent of the remaining capacity of the water system. Therefore, because the Benbow Water Company water system has capacity to accommodate the projected level of growth, impacts relating to additional water supply entitlements or the construction of new treatment facilities would be less than significant.

Garberville SD. The Garberville SD recently completed water intake and treatment related improvements. Approximately three new housing units are projected to be constructed within the Garberville SD service area by the projected 2028 population peak of the General Plan planning period. This level of development could be accommodated by the current capacity of the water system. Therefore, because the Garberville SD water system has capacity to accommodate the projected level of growth, impacts relating to additional water supply entitlements or the construction of new treatment facilities would be less than significant.

Miranda CSD. The Miranda CSD is estimated to have the capacity for approximately 77 additional water service connections. Approximately 25 additional housing units are projected to be developed within the Miranda CSD service area during General Plan Update planning period. This level of development is would consume approximately 30 percent of the remaining capacity of the water system. Therefore, because the Miranda CSD water system has capacity to accommodate the projected level of growth, impacts relating to additional water supply entitlements or the construction of new treatment facilities would be less than significant.

Phillipsville CSD. A recent grant-funded improvement project brought the Phillipsville CSD water system into compliance with safe drinking water regulations and was sized to adequately serve existing development and expected increases in demand. However, no new growth is projected to occur within the Phillipsville CSD service area during the General Plan Update planning period. Therefore, because the General Plan Update is not projected to trigger the need for additional water supply entitlements or the construction of new treatment facilities, impacts would be less than significant.

Weott CSD. Approximately three additional housing units are projected to be developed within the Weott CSD service area during General Plan Update planning period. Weott CSD evaluated the capacity of the water system to accommodate three additional housing units and found that "given that (the Weott CSD is) currently only use 50% of our projected available source water and 75% of our estimated treatment plant production capacity, even during the times of maximum demand, I think it safe to infer that WCSD would therefore be able to supply adequate water to the community even with the edition of three new residences." Therefore, , impacts relating to additional water supply entitlements or the construction of new treatment facilities would be less than significant.

Loleta CSD. The Loleta CSD water system improvements were sized serve existing development and current planned development. Approximately 10 additional housing units are projected to be developed within the Loleta CSD service area during General Plan Update planning period, Given the water system was sized to serve current planned development and 10 additional units represents a modest increase in development of the next 20 years, impacts relating to additional water supply entitlements or the construction of new treatment facilities would be less than significant.

Scotia CSD. The new Scotia CSD is estimated to have the equivalent capacity of 1,117 available residential water connections. No new residential units are projected to be developed within Scotia during the General Plan Update planning period, although reuse of industrial land could result in additional water demand. Therefore, because the General Plan Update is not projected to trigger the need for additional water supply entitlements or the construction of new treatment facilities, impacts would be less than significant.

Alderpoint CWD. Based on Alderpoint CWD Water Capacity Study (LACO, 2016), the ACWD can provide service to the entire community at buildout (66 new housing units)." No additional housing units are projected to be developed in Alderpoint at the projected population peak in

2028. Therefore, because the Alderpoint CWD water system has capacity to accommodate additional development and no additional development is projected to occur, impacts relating to water supply and the construction of new treatment facilities would be less than significant.

Willow Creek CSD. The Willow Creek CSD is estimated to have the capacity for approximately 609 additional water service connections. Approximately 10 additional housing units are projected to be developed within the Willow Creek CSD service area during General Plan Update planning period. Given the water system was sized to serve many times the number of units projected to be developed during the planning period, impacts relating to additional water supply entitlements or the construction of new treatment facilities would be less than significant.

Hydesville CWD. The Hydesville CWD is estimated to have the capacity for approximately 319 additional water service connections. Approximately 37 additional housing units are projected to be developed within the Hydesville CWD service area during General Plan Update planning period. Given the water system was sized to serve approximately ten times the number of units, impacts relating to additional water supply entitlements or the construction of new treatment facilities would be less than significant.

Orick CSD. The Orick CSD has the capacity for approximately 37 additional dwelling units. Approximately three additional housing units are projected to be developed within the Orick CSD service area during General Plan Update planning period. Given the water system has current capacity to serve approximately ten times the number of units, impacts relating to additional water supply entitlements or the construction of new treatment facilities would be less than significant.

RID No. 1 (Shelter Cove Area). RID No. 1 has approximately 520 units of remaining capacity, until such time that it identifies and develops additional sources of water. Approximately 133 additional housing units are projected to be developed within the RID No. 1 service area during General Plan Update planning period. Given the water system was sized to serve approximately four times the number of units, impacts relating to additional water supply entitlements or the construction of new treatment facilities would be less than significant.

Riverside CSD. The Riverside CSD is estimated to have the capacity for approximately 60 additional water service connections. No additional housing units are projected to be developed in the area served by the Riverside CSD at the projected population peak in 2028. Therefore, because the Riverside CSD water system has capacity to accommodate additional development and no additional development is projected to occur, impacts relating to water supply and the construction of new treatment facilities would be less than significant.

Humboldt Bay Municipal Water District Service Area. Approximately 1,021 additional housing units are projected to be developed within the HBMWD service area during General Plan Update planning period (housing growth within the Fieldbrook-Glendale CSD, Humboldt CSD, Jacoby Creek CWD, Manila CSD, and the McKinleyville CSD). According to Table 4-2 of the HBMWD's 2015 UWMP (2015 UWMP), average domestic demand for water is expected to rise to 12,490 acre feet per year in the year 2035. Serving all of its customers (seven wholesale customers and approximately 200 retail customers) will require less than 15 percent of its 84,000 acre feet per year entitlement in 20 years. Section 7.2 of the HBMWD UWMP 2010 also shows that the Mad River and Ruth Lake can provide sufficient water supply to the seven retail water suppliers, HBMWD retail customers, industrial customers, and system losses during normal, single dry, and multiple dry years between now and 2035

As indicated above, the HBMWD has adequate supply to support development that is projected to occur during the planning period of the General Plan Update. Maintenance and improvements to production, treatment, and transmission facilities will likely be required, but the scope and scale of such improvements are not known at this time. Therefore, impacts relating to additional water supply entitlements or the construction of new treatment facilities would be less than significant

Impacts That Are Potentially Significant

For the following five water service providers, projected growth during the planning period would likely exceed water supplies available to serve planned development from existing entitlements and resources or require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Briceland CSD. Due to issues relating to water supply, the treatment system, and storage capacity, any new growth that would result in connections to the Briceland CSD water system would result in potentially significant impacts. No new growth is projected to occur within the Briceland CSD service area during the General Plan Update planning period. However, even though the General Plan Update is not projected to trigger the need for additional water supply entitlements or the construction of new treatment facilities, any new residential or commercial development consistent with the General Plan during the planning period could result in impacts. Therefore, impacts are considered potentially significant.

Big Lagoon CSD. The Big Lagoon CSD has indicated that the District's water system may be at capacity now and that and an engineering study must be done before expanding services could competently evaluate. No new growth is projected to occur within the Big Lagoon CSD service area during the General Plan Update planning period. However, even though the General Plan Update is not projected to trigger the need for additional water supply entitlements or the construction of new treatment facilities, any new residential or commercial development consistent with the General Plan during the planning period could result in impacts. Therefore, impacts are considered potentially significant.

Redway CSD. According to the Water and Wastewater Capacity Analysis (Water Works Engineers, 2014), the water treatment system is currently at capacity, and the water storage and distribution system is already struggling to meet the demands of existing connections. These issues should be addressed before substantial additional service connections are made.

Approximately 74 additional housing units are projected to be developed within the Redway CSD service area during General Plan Update planning period, which significantly exceeds the currently available water system capacity. Therefore, the proposed General Plan Update would allow development levels in excess of water capacity. The Redway CSD does not have specific plans or funding to expand the capacity of its water system, beyond the current project. To the extent that proposed future development would exceed the water supply available to the Redway CSD, additional water rights would need to be secured.

The Water Resources Control Board has declared the Eel River as a "fully appropriated" stream system, finding that the supply of water in the stream system is being fully applied to existing beneficial uses and no water remains available for appropriation. If additional water entitlements are required it is not likely that new surface water rights could be secured within the Eel River system. Additional water supply capacity for Redway would need to be derived from groundwater supplies that are not hydraulically connected with surface water or through

conservation by existing users. The Redway CSD would need to manage its system to reduce consumption or install groundwater wells as there is no indication that water would be available for diversion. Therefore, because the General Plan Update would potentially trigger the need for additional water supply entitlements and the construction of new treatment facilities for the Redway CSD, impacts would be potentially significant.

Orleans CSD. Due to issues relating to the Orleans water treatment system, any new growth that would result in new connections to the Orleans CSD water system would result in potentially significant impacts. Approximately three additional housing units are projected to be developed within the Orleans CSD service area during General Plan Update planning period, which would exceed water treatment capacity. The Orleans CSD does not have specific plans or funding to expand the capacity of its water system. Therefore, impacts relating to additional water supply entitlements or the construction of new treatment facilities are considered potentially significant.

Westhaven CSD. There are no available water connections in Westhaven due to inadequate water supply. No new growth is projected to occur within the Westhaven CSD service area during the General Plan Update planning period. However, even though the General Plan Update is not projected to trigger the need for additional water supply entitlements or the construction of new treatment facilities, any new residential or commercial development consistent with the General Plan during the planning period could result in impacts. Therefore, impacts are considered potentially significant.

Rural Water Use. Existing development outside of Urban Development Areas and Water Service Areas uses wells and surface water diversions and onsite treatment for domestic water and irrigation purposes. In most cases, new development in such areas, whether discretionary or ministerial, would be responsible for establishing individual onsite water systems using wells permitted by the Environmental Health Branch, Land Use Program or surface water diversions, which would require Lake and Streambed Alteration Agreements from the State Department of Fish and Wildlife.

Table 3.3-9, Projected Growth (2028) by Type of Water Service, identifies the number of new housing units within each planning watershed that would be expected to use onsite water systems or would be expected to connect to public water systems.

Table 3.3-9, Projected Growth (2028) by Type of Water Service

	Water System Type		
Planning Watershed	Public	On Site	Total
1-South Fork Eel	122	29	151
2-Lower Eel	43	11	54
3-Middle Main Eel	0	16	16
4-Lower Klamath	2	10	12
5-South Fork Trinity	0	1	1
6-Lower Trinity	10	1	11
7-Van Duzen	37	24	61
8-Redwood Creek	3	7	10
9-Cape Mendocino	133	19	151
10-Trinidad	1	8	8

Planning Watershed	Water System Type		
	Public	On Site	Total
11-Mad River	304	34	339
12-Eureka Plain	730	176	906
Total	**1,384**	**337**	**1,721**

Approximately 337 housing units are projected to be constructed in areas outside of the boundaries of water service providers during the General Plan Update planning period. Housing units in these areas would be expected to use onsite water systems: either wells or new surface water diversions. Approximately 40 percent of these units are projected to be located within the Eel, Klamath, Mad, Trinity, Van Duzen River systems, which are fully appropriated.

New rural development, except those with riparian rights, would not be permitted to take water from fully appropriated streams. New rural development in these areas would need to establish wells from groundwater sources that are not hydraulically connected to surface water, or take water from a spring or stream that flows within the property and is not hydraulically connected to the downstream system.

Housing unit growth projected to occur in areas outside of the boundaries of water service providers during the General Plan Update planning period would result in increased demand for water. The fully appropriated stream systems identified above may have insufficient supplies to meet that demand. Although detailed analyses of water availability have not been completed, it is assumed that other stream systems and groundwater basins may also have insufficient supplies to meet future demand from rural development at the maximum allowable density. Therefore, impacts relating to additional water supply entitlements are considered potentially significant.

Analysis of Relevant General Plan Update Policies

The Community Infrastructure and Services Element of the General Plan Update was developed to provide policies and programs to ensure service capacity, including water supply and system capacity, keeps pace with development. If it is not feasible to increase capacity, several policies summarized below would ensure that approved development is limited to available permitted capacity.

Policy IS-P1, Coordination with Service Providers, requires that the County cooperate with service providers, including water system operators, to establish standards and identify system needs consistent with the General Plan Update. Policy IS-P4, Requirements for Discretionary Development, requires that the County assess service needs associated with discretionary development relative to local standards as well as state and federal regulations and only approve development where service can be adequately provided. Policies IS-P8, Infrastructure and Services Capacity, and IS-P9, Capacity of Facilities and Land Use Decisions, require that the County monitor water system capacity in coordination with service providers. These policies limit the likelihood that development consistent with the General Plan Update would not exceed water supply and treatment requirements of the California State Water Resources Control Board Division of Drinking Water. IS-P19, Water and Wastewater System Capital Improvement Programs, indicates that the County would support the efforts of service providers to develop and maintain capital improvement programs for construction of water systems

Policy IS-P9, Capacity of Facilities and Land Use Decisions, requires that the County coordinate with wastewater service providers to determine adequacy for proposed land uses and

discretionary development, and that the density, timing, and design of new development be consistent with service capacity. Standard IS-S2, Service Inadequacies and Development Limitations, requires that the County coordinate with service providers and limit development when infrastructure inadequacies dictate such actions. Standard IS-S6, Water and Wastewater Service Commitment for Proposed Development, would require that the County receive written approval from the service provider prior to final development approval. In addition, Land Use Element Growth Planning Standard GP-S7, Required Findings for Urban Expansion, requires that the expansion of Urban Development Areas include the evaluation of water availability and include a finding that water systems demonstrate current or expansion capacity to serve the proposed addition.

The Water Resources Element includes a number of policies, standards, and implementation measures to ensure that public water systems are able to provide adequate water supply to meet long-term community needs in a manner that protects other beneficial uses and the natural environment. Policy WR-P1, Sustainable Management, would ensure that land use decisions conserve, enhance, and manage water resources on a sustainable basis to assure sufficient clean water for beneficial uses and future generations. Policy WR-P2, Protection for Existing Surface and Groundwater Uses, would direct the County to consider and mitigate impacts to existing beneficial water uses during discretionary review of land use permits that are not served by municipal water supplies. Policies WR-P3, Proactive Protections, WR-P4, Critical Municipal Water Supply Areas, and WR-P5, Critical Watershed Areas, together focus land use planning and regulatory attention on watersheds where supply is limited and threats to water supply and quality could have significant effects on the availability of water or the environment. Policy WR-P4 would require that the Board designate Critical Water Supply Areas if cumulative impacts from land uses within the area have the potential to significantly impact the quality or quantity of municipal water supplies. Policy WR-P5, Critical Watershed Areas, would require that the Board designate watersheds as Critical Watersheds if cumulative impacts from land uses within the area have the potential to create significant environmental impacts to threatened or endangered species, including Coho salmon or steelhead habitat.

Regarding public water supplies, Policies WR-P21, Sufficient Water Supply; WR-P22, Critical Water Supply Areas; and WR-P23, Conservation and Re-use Strategy, would link the County and local water service providers in planning to provide water for development and the protection of critical water supply areas. Policy WR-P21, Sufficient Water Supply, direct the County to support the actions and facilities needed by public water systems to supply the water demands projected in this Plan. Policy WR-P22, Critical Water Supply Areas, would complement Policy WR-P4, and encourage the coordination between the County and public water systems in the designation and regulation of water resources in Critical Water Supply areas. Policy WR-P23, Conservation and Re-use Strategy, would encourage the County to promote the use of water conservation and re-use as a strategy to lower the cost, minimize energy consumption, and maximize the overall efficiency and capacity of public water systems.

The General Plan Update also contains policies intended to address water supply associated with rural development. For the zoning and subdivision of all areas designated for rural residential development, the Rural Land Chapter of the Land Use Element contains Rural Land (RL) Policy RL-P2, Water Withdrawal, which requires an assessment of the cumulative impacts of water withdrawal from surface and groundwater sources. Standard RL-S4, Subdivision Standards, establishes standards for rural subdivision, including the use of current standards of the Division of Environmental Health as proof of adequate water for domestic use.

Policy WR-P6, Subdivisions, would require that subdivision approvals are conditioned upon evidence of sufficient water supply during drought conditions to meet the projected demand

associated with the proposed subdivision. The Water Resources Element also contains Policy WR-Px1, Requirements for Water Storage in Flow Impaired Watersheds, which requires that new development not served by public water to install water storage tanks capable of providing 100 percent of the water storage volume and enter into a forbearance agreement eliminating water withdrawals during low-flow conditions. This policy would provide significant protections for streams during low flow periods

The analysis above indicates that, although a number of systems would accommodate development projected to occur development within the General Plan planning period, many water systems serving the unincorporated area would need to be expanded to serve the projected development during the planning period. As a result, the proposed General Plan would result in the need, or facilitate the need, for additional water supply, treatment, and distribution systems. Provision of adequate water system capacity in Urban Development Areas of Humboldt County is the responsibility of service providers that are not under the jurisdiction of the County. Although providers are planning future improvements and expansions to accommodate growth projected as a result of the General Plan, the feasibility of providing service to projected growth into the future due will be affected by the costs of improvements required, funding limitations, permitting, and environmental considerations.

The following is a summary of General Plan Update policies that would reduce construction related environmental impacts from new or expanded water facilities:

- The Circulation Element contains policies to reduce traffic impacts of new and expanded wastewater facilities by utilizing traffic impact thresholds (C-P5, Level of Service Criteria) and by requiring that new development be conditioned to proportionally mitigate significant traffic impacts through construction of on- and off-site improvements and dedication of rights-of-way (C-P4. Mitigation Measures).
- The Biological Resources Chapter within the General Plan Update contains policies to reduce impacts to plants, animals, and habitat by planning land containing sensitive and critical habitats for uses for long term habitat sustainability (BR-P1, Compatible Land Use); conditioning projects to avoid impacts to critical and essential habitat where such resources are present (BR-P2, Critical Habitat); regulating development within streamside management areas to minimize adverse environmental effects (BR-P6, Development within Streamside Management Areas); and through the delineation and protection of wetlands (BR-P-7, Wetland Identification, and BR-S10 Development Standards).
- The Water Resources Element contains policies regarding critical watersheds to protect municipal water supplies from the environmental effects of development (WR-P4, Critical Municipal Water Supply Areas) and to limit the effects of development upon threatened and endangered species including Coho salmon habitat (WR-P5, Critical Watershed Areas); minimizing erosion and sediment discharge through the implementation of performance standards (WR-Px2, Mitigate Controllable Sediment Discharge Sites, WR-P8 Erosion and Sediment Discharge and WR-P36 Erosion and Sediment Control Measures); and by limiting the transmission of contaminants from parking lots to the storm water system by requiring oil water separators (WR-P35, Oil/Water Separation).
- Noise Element policies are intended to minimize short-term noise and noise from stationary sources through the application of appropriate standards (N-P1, Minimize Noise from Stationary and Mobile Sources) and through application of noise performance standards (N-S8 Short-Term Noise Performance Standards-Maximum Noise Level).
- The Safety Element contains policies to plan land use and new development to reduce hazards (S-P1, Reduce the Potential for Loss); applying state geologic and seismic standards to new development (S-P6, Structural Hazards); regulating uses around airports

consistent with Airport Land Use Compatibility Plans (S-P21, Development Compatibility and S-P22, Airport Land Use Compatibility Criteria), and by regulating land uses in flood hazard areas (S-P10, Federal Flood Insurance Program).

- Air Quality Element policies require that construction and grading dust control measures achieve local air quality standards (AQ-P4, Construction and Grading Dust Control) and air quality impacts of new development are reduced through the implementation of mitigation measure during discretionary review (AQ-P5, Air Quality Impacts from New Development).

Conclusion

Residential, industrial, commercial and agricultural growth projected to occur during the General Plan Update planning period would place additional demands on Humboldt County's water resources. The General Plan Update seeks to focus growth in areas where it can be most easily accommodated. Communities and districts would need to plan for increased growth to accommodate additional housing allowed under the plan. Under the General Plan Update, system upgrades and infrastructure expansions required for new development would be the responsibility of new development and the local service provider. The construction of new or expanded facilities could result in potentially significant impacts. The above-listed General Plan Update policies direct the County to work cooperatively with water service providers to plan and implement infrastructure projects consistent with this plan.

The nature and location of potential new or expanded water treatment, storage, or transmission facilities that would be constructed by another agency and that do not trigger a County land use approval is not known. As a result, the potential impacts of these facilities are too speculative for evaluation. Such potential water-related facilities are within the responsibility and jurisdiction of other public agencies, and not the County, and appropriate mitigations can and should be adopted by such other agency.

If the new or expanded water-related facilities were to be constructed as part of a subdivision or other process requiring County land use approval, such as an amendment to the General Plan Land Use Map, rezone, use permit, or a special permit, the County would ensure that environmental impacts are addressed through the application of the policies listed above, appropriate Zoning Regulations, and its land use authority. Therefore, with implementation of the General Plan Update policies, General Plan Update impacts relating to need for new or expanded water treatment, storage, or transmission facilities triggered by the General Plan would be less than significant.

However, growth projected to occur during the General Plan Update planning period could result in significant impacts to surface and groundwater supplies. To address this, the General Plan Update provides protections for critical watersheds and groundwater basins within them, and assesses potential cumulative impacts to water supply as part rural subdivisions and zone reclassifications. While the proposed General Plan Update policies and programs would reduce some of the adverse impacts effects to water resources from discretionary development, protections would be focused on critical watersheds and would not address ministerial development, which may not address all potential water supply impacts of the General Plan Update. Although most of the County's watersheds are listed on the 303(d) list of impaired water bodies, there is no guarantee that the full extent of each watershed will be designated as critical watersheds. Because the General Plan Update water supply protections are focused on designated critical watersheds, the impacts of ministerial permits to water supply may not be addressed. As a result, this would be a **potentially significant impact**.

Mitigation

Mitigation 3.3.3.2.a. The following implementation measure shall be added to the Water Resources Element to ensure that water supply and availability is fully characterized within each watershed where such information is not adequately known:

> ***WR-IMx. Water Supply Evaluation and Monitoring***. *Conduct watershed level evaluations within two years after the adoption of the General Plan Update to determine the long term surface and groundwater supply, including seasonal, average, dry year, and multiple dry year supplies, and beneficial uses of water to determine an estimate of the quantity of water available for future development. Work with water and wastewater related special districts, regulators, and other appropriate organizations to monitor watershed conditions.*

Level of Significance after Mitigation

Policies contained in the Community Infrastructure and Services Element, Water Resources Element and Land Use Element would limit development potential if it is found that it would exceed the available water supply and capacity of water systems and ensure that it is not approved. However, potential impacts could still result from the approval of ministerial development. The proposed mitigations would reduce cumulative water supply impacts that could result from development that does not trigger discretionary review.

The impacts to water supply and availability of planned development and the effectiveness of related mitigation cannot be definitively determined or tested at this time; therefore, with implementation of this mitigation measure, but not to a less-than-significant level. Therefore, this impact would remain **significant and unavoidable.**

Impact 3.3.3.3. New Storm Water Drainage Facilities

Development of impervious surfaces, relating to structures, roads, and other improvements to accommodate projected population growth during the General Plan Update planning period could result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

This impact analysis addresses item "c" of the significance standards listed Appendix G of the CEQA Guidelines as provided in Section 3.3.2 above. Pursuant to these standards, the proposed General Plan Update would have a significant impact if it would:

> c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Population growth during the General Plan Update planning period would result in the construction of additional rooftops, parking lots, roads, driveways, and compacted soils, which would increase the amount of impervious surfaces and thereby increase stormwater runoff. An increase in the amount of impervious surfaces could result in levels of runoff that would exceed the capacity of existing stormwater drainage systems, requiring the construction of new or expanded facilities. Such facilities may include surface and underground conveyance systems, and detention/retention facilities, etc.

A significant amount of development in the unincorporated area is located in rural areas and uses natural drainage courses rather than constructed stormwater drainage facilities. Urbanized areas such as the McKinleyville and Eureka Community Plan areas use a range of constructed stormwater drainage facilities that are managed by the County Public Works Department. Facilities include curbs, gutters, drop-inlets, culverts, underground drainage conduit, and detention basins. Development projects in the County must comply with the County subdivision regulations and applicable stormwater standards in order to receive project approval. Humboldt County Public Works requires that all discretionary projects demonstrate that they would provide stormwater facilities that are sized appropriately to accommodate runoff flows and comply with applicable standards.

Drainage facilities in the unincorporated area are usually developed as part of subdivision or roadway projects and analyzed pursuant to CEQA as part of the larger project. There have not been any improvement projects that consist solely of drainage facilities that have been constructed recently. As a result, there are no local drainage related CEQA documents that can be used for reference.

Storm drainage projects are typically located within or adjacent to roadways and stream channels. The area required for the projects varies depending on the type of drainage improvement, planned capacity of the improvement, and the improvement type. Some projects may require detention or retention facilities, which would significantly increase the area of the drainage improvement. The site specific impacts of these facilities cannot be determined until the time that the facilities are proposed. Typical impacts would likely include construction related noise, traffic, dust, grading and water pollution. Storm drainage infrastructure may be located near or discharge to streams, ditches, or other surface water channels, and could therefore cause impacts to wetlands, water resources, fish and wildlife, erosion, and stream flow may also occur.

In general, potential environmental impacts from drainage projects may include: loss of agricultural resources; construction related air quality impacts; disturbances to wetland areas and riparian vegetation; disturbances to threatened or endangered species; accidental disturbance of cultural resources potential erosion; exposure to geologic hazards; release or disturbance of hazardous materials during construction; and construction related traffic.

Analysis of Relevant General Plan Update Policies

General Plan Update policies require that projects be designed to minimize peak storm water runoff, encourage the use low impact development standards that employ techniques to minimize storm water runoff, and to utilize natural drainage ways. Community Infrastructure and Services Element Policy IS-P4, Requirements for Discretionary Development, requires that new development provide new facilities, such as storm drainage facilities, to meet service standards adopted by the Board of Supervisors, if existing facilities are not adequate. Policy IS-P 9, Capacity of Facilities and Land Use Decisions, further requires the County to evaluate the capacity of drainage facilities to determine adequacy for new development. IS-P16, Drainage and Flood Control, specifies that the County shall maintain a plan for drainage and flood control to guide capital improvements and maintenance. In addition, Implementation Measure IS-IM13, Drainage and Flood Control Plan, directs the County to prepare a countywide Drainage and Flood Control Plan that inventories existing facilities and prioritizes improvement needs.

Water Resources Element policies and standards specifically address alteration of existing drainage patterns through development which could result in flooding on or off site. Policy WR-P30, Natural Stormwater Drainage Courses, requires that natural drainage courses be retained

and protected from development impacts on flow rates or water quality. Policy WR-P31, Downstream Peak Flows, requires that post-development peak flow discharges mimic natural flows to watercourses and avoid impacts to Beneficial Uses of Water. Policy WR-P36, Erosion and Sediment Control Measures, requires that appropriate sediment control measures be incorporated into storm drainage design and improvements. Policy WR-P38, Storm Drainage Impact Reduction, requires that storm drainage development guidelines be developed with incentives to encourage the use of low-impact development standards to reduce the quantity and increase the quality of storm water runoff from new developments. The County's intent to develop and utilize low impact development standards is further echoed in Implementation Measure WR-IM26, Low Impact Development Methods, requires discretionary projects to utilize best management practices for Low Impact Development to meet surface water run-off standards.

The proposed General Plan would result in the need for additional stormwater drainage facilities. Provision of adequate stormwater system capacity in Urban Development Areas of Humboldt County is the responsibility of Humboldt County and several other service providers that are not under the jurisdiction of the County. The following is a summary of General Plan Update policies that would reduce construction related environmental impacts from new or expanded storm drainage facilities:

- The Circulation Element contains policies to reduce traffic impacts of new and expanded wastewater facilities by utilizing traffic impact thresholds (C-P5, Level of Service Criteria) and by requiring that new development be conditioned to proportionally mitigate significant traffic impacts through construction of on- and off-site improvements and dedication of rights-of-way (C-P4. Mitigation Measures).
- The Biological Resources Chapter within the General Plan Update contains policies to reduce impacts to plants, animals, and habitat by planning land containing sensitive and critical habitats for uses for long term habitat sustainability (BR-P1, Compatible Land Use); conditioning projects to avoid impacts to critical and essential habitat where such resources are present (BR-P2, Critical Habitat); regulating development within streamside management areas to minimize adverse environmental effects (BR-P6, Development within Streamside Management Areas); and through the delineation and protection of wetlands (BR-P-7, Wetland Identification, and BR-S10 Development Standards).
- The Water Resources Element contains policies regarding critical watersheds to protect municipal water supplies from the environmental effects of development (WR-P4, Critical Municipal Water Supply Areas) and to limit the effects of development upon threatened and endangered species including Coho salmon habitat (WR-P5, Critical Watershed Areas); minimizing erosion and sediment discharge through the implementation of performance standards (WR-Px2, Mitigate Controllable Sediment Discharge Sites, WR-P8 Erosion and Sediment Discharge and WR-P36 Erosion and Sediment Control Measures); and by limiting the transmission of contaminants from parking lots to the storm water system by requiring oil water separators (WR-P35, Oil/Water Separation).
- Noise Element policies are intended to minimize short-term noise and noise from stationary sources through the application of appropriate standards (N-P1, Minimize Noise from Stationary and Mobile Sources) and through application of noise performance standards (N-S8 Short-Term Noise Performance Standards-Maximum Noise Level).
- The Safety Element contains policies to plan land use and new development to reduce hazards (S-P1, Reduce the Potential for Loss); applying state geologic and seismic standards to new development (S-P6, Structural Hazards); regulating uses around airports consistent with Airport Land Use Compatibility Plans (S-P21, Development Compatibility and S-P22, Airport Land Use Compatibility Criteria), and by regulating land uses in flood hazard areas (S-P10, Federal Flood Insurance Program).

- Air Quality Element policies require that construction and grading dust control measures achieve local air quality standards (AQ-P4, Construction and Grading Dust Control) and air quality impacts of new development are reduced through the implementation of mitigation measure during discretionary review (AQ-P5, Air Quality Impacts from New Development).

Conclusion

The development of future land uses to accommodate growth during the General Plan Update planning period could exceed the capacity of storm drainage facilities and result in the need for the construction of new storm water drainage facilities or expansion of existing facilities. The proposed General Plan Update policies described above, lessen potential impacts from storm drainage facility construction and would require that new development mitigate impacts and be timed to match the capacity of storm drainage facilities. In particular, IS-P16, Drainage and Flood Control, specifies a countywide plan for drainage and flood improvements as well as maintenance, including the establishment of long term sustainable funding sources. Therefore General Plan Update impacts relating the exceedance of storm drainage facility capacity or the construction of new or the expansion of existing storm water drainage facilities would be **less than significant.**

Mitigation

None required

Impact 3.3.3.4. Solid Waste Disposal

Population and employment growth during the General Plan Update planning period would have a significant impact if it would generate levels of solid waste that would exceed permitted landfill capacity, or would not comply with federal, state, and local statutes and regulations related to solid waste.

This impact analysis addresses items "f" and "g" of the significance standards listed Appendix G of the CEQA Guidelines as provided in Section 3.3.2 above. Pursuant to these standards, the proposed General Plan Update would have a significant impact if it would:

f) Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.
g) Not comply with federal, state, and local statutes and regulations related to solid waste.

The 1,721 new residential units and 2,440 commercial and industrial jobs that are projected to occur during the General Plan Update planning period would generate additional solid waste. The increased solid waste could create a need for new or expanded solid waste facilities such as transfer stations, materials recovery facilities, and landfill capacity. In addition, the increased generation of solid waste could result in non-compliance with State waste diversion requirements.

In 2015, households and businesses disposed of approximately 35,069.29 tons of solid waste. According to online CalRecycle Jurisdiction Reports (http://www.calrecycle.ca.gov/LGCentral/reports/diversionprogram/JurisdictionDiversionPost2006.aspx) the Annual Per Capita Disposal Rate (PPD) Per Resident for the Humboldt County unincorporated area is 2.7 pounds per capita and 13.6 pounds per employee. The unincorporated area is projected to grow by

approximately 3,728 persons by 2028 (the projected population peak) and 2,440 employees by 2040 (projected peak employment growth during the planning period). Solid waste disposal would be expected to increase by 10,067 pounds per day or (3,728 x 2.700476 - 10,067 – note the per capita solid waste factor accounts for all waste generation) or over 1,800 tons per year (3.67 million pounds per year). This would result in an increase of just over 5% in waste disposal for the Humboldt County unincorporated area during the General Plan Update planning period.

The HWMA was created to provide economical coordination of solid waste management and disposal services and manages contracts for the transport of the solid waste for disposal at either the Anderson Landfill in Shasta County, or Dry Creek Landfill near Medford, Oregon. The Anderson Landfill has a daily permitted disposal of about 1,018 tons/day, and a remaining capacity of about eight million tons. The Anderson Landfill is not expected to reach capacity until 2036. The Dry Creek Landfill has a remaining capacity of about 50 million tons without additional site expansion. It is anticipated that the Dry Creek Landfill could provide disposal capacity for its current service area, including Humboldt County, for another 75 to 100 years.

The 2006 Humboldt County IWMP Five-Year Review states that there have been no changes in the permitted solid waste disposal capacity or in the quantities of waste disposed in the preceding five years that would warrant a revision to the IWMP Siting Element. The Five-Year Review indicates that jurisdictions within Humboldt County have either met their mandated diversion rate or are making a good faith effort to do so. In particular, the unincorporated area has met its mandated diversion rate. In addition, the Five-Year Review determined that the conclusions of the November 1993 siting study that was prepared pursuant to the IWMP Siting Element remain the same: the best option for the County long-term capacity assurance strategy remains the export of solid waste outside the County. The Five-year Review also found that the County continues to have greater than 15 years of solid waste disposal capacity.

Humboldt County has not identified the need for additional solid waste facilities and is therefore not planning for additional container sites or transfer stations to serve future development during the planning period of the General Plan Update, or the next 20 years. During the prior 20 years the County reduced the number of container sites in the rural areas and did not increase the number of transfer stations in the urban areas. However, in southern Humboldt County the volume of disposed solid waste has been steadily accelerating as evidenced by a significant spike in tonnages logged in by the Redway Transfer Station over the last five years. To address this, the County is currently designing a higher capacity facility to replace the existing Redway Transfer Station building. Humboldt Sanitation Company, which operates the transfer station in McKinleyville, plans to expand the capacity of its facility and make improvements to raise floor elevations above the 100-year floodplain. Humboldt County is working to make curbside recycling widely available within the unincorporated area and is beginning to plan relating a material recovery facility in order to further reduce solid waste intended for the landfill.

Projected levels of development during the General Plan planning period are not expected to result in the need for new transfer stations or container sites. However, some transfer stations may experience increases in use consistent with Department of Finance projected population growth, development within cities, or other factors resulting in the need for expanded or new facilities may be required. If new facilities were to be constructed they could result in potentially significant impacts. In general, potential environmental impacts from the construction of or expansion to existing solid waste facilities may include: loss of agricultural resources; construction related air quality impacts; disturbances to riparian vegetation; disturbances to threatened or endangered species; accidental disturbance of cultural resources potential erosion; exposure to geologic hazards; release or disturbance of hazardous materials during construction; construction related traffic. While the effects of each improvement project will vary, the

discussion above describes the general nature of impacts that can be expected and the likelihood that feasible mitigation measures will be available to reduce or avoid those impacts.

Analysis of Relevant General Plan Update Policies

The Waste Management Chapter of the Conservation and Open Space Element recognizes and supports a coordinated IWMP and Humboldt Waste Management Authority approach as well as waste reduction objectives and programs. The Waste Management Chapter also addresses new solid waste facility siting standards, in the event that it was determined that it was more advantageous than the current program of exporting.

The General Plan Update would remain consistent with the IWMP. Policy WM-P7, Countywide Integrated Waste Management Plan (IWMP), directs the County to abide by and participate in revisions to the IWMP. The General Plan Update further strengthens the County's commitment to local and state regulations relating to solid waste management through Implementation Measure WM-IM2, Solid Waste Management Authority, which requires the County to continue to participate in the Humboldt Waste Management Authority. Policy WM-Px, Support for Waste Diversion and Recycling Operations, recognizes the importance of siting waste diversion and recycling operations within the County to attain state mandated waste reduction goals and directs the County to balance this public interest with the health, safety and welfare of those living in the vicinity of proposed facilities.

The General Plan Update maintains successful solid waste reduction programs. Waste Management Chapter Policy WM-P1, Solid Waste Reduction Programs, encourages countywide waste reduction programs and establishes criteria for selecting and prioritizing waste reduction programs; however this policy does not establish a mandatory requirement and cannot be relied upon to fully lessen solid waste impacts. Policy WM-P2, Support Successful Programs, supports existing waste management and diversion programs that are successful and new programs that are established according to the criteria in WM-P1. Implementation Measure WM-IM4, Support for Waste Diversion and Recycling Operations, requires that the County provide technical and permitting assistance to waste diversion activities, particularly those that reduce illegal disposal activities; for example, junk yards and car recycling operations.

The General Plan Update encourages joint solid waste planning. Policies WM-P4, Information Sharing, and P5, Administrative Structure, favor unified and integrated waste management strategies coordinated between the County and cities. Policy WM-P3, Joint Facility Planning, encourages joint planning for solid waste facilities. Standards, WM S1, Solid Waste Facility Permit, WM-S2, Solid Waste Disposal Facility Conformance with Integrated Waste Management Plan (IWMP), WM-S3, Solid Waste Facility Consistency with State and Federal Laws, and WM-S4, Land Use Permits for Solid Waste Facilities, together require that the siting of a new solid waste facility occur consistent with all local, state, and federal regulations.

The proposed General Plan could result in the need for expanded or additional solid waste facilities, such as recycling centers, container sites, and transfer stations. The following is a summary of General Plan Update policies that would reduce construction related environmental impacts from new or expanded storm drainage facilities:

- The Circulation Element contains policies to reduce traffic impacts of new and expanded wastewater facilities by utilizing traffic impact thresholds (C-P5, Level of Service Criteria) and by requiring that new development be conditioned to proportionally mitigate significant traffic impacts through construction of on- and off-site improvements and dedication of rights-of-way (C-P4. Mitigation Measures).

- The Biological Resources Chapter within the General Plan Update contains policies to reduce impacts to plants, animals, and habitat by planning land containing sensitive and critical habitats for uses for long term habitat sustainability (BR-P1, Compatible Land Use); conditioning projects to avoid impacts to critical and essential habitat where such resources are present (BR-P2, Critical Habitat); regulating development within streamside management areas to minimize adverse environmental effects (BR-P6, Development within Streamside Management Areas); and through the delineation and protection of wetlands (BR-P-7, Wetland Identification, and BR-S10 Development Standards).
- The Water Resources Element contains policies regarding critical watersheds to protect municipal water supplies from the environmental effects of development (WR-P4, Critical Municipal Water Supply Areas) and to limit the effects of development upon threatened and endangered species including Coho salmon habitat (WR-P5, Critical Watershed Areas); minimizing erosion and sediment discharge through the implementation of performance standards (WR-Px2, Mitigate Controllable Sediment Discharge Sites, WR-P8 Erosion and Sediment Discharge and WR-P36 Erosion and Sediment Control Measures); and by limiting the transmission of contaminants from parking lots to the storm water system by requiring oil water separators (WR-P35, Oil/Water Separation).
- Noise Element policies are intended to minimize short-term noise and noise from stationary sources through the application of appropriate standards (N-P1, Minimize Noise from Stationary and Mobile Sources) and through application of noise performance standards (N-S8 Short-Term Noise Performance Standards-Maximum Noise Level).
- The Safety Element contains policies to plan land use and new development to reduce hazards (S-P1, Reduce the Potential for Loss); applying state geologic and seismic standards to new development (S-P6, Structural Hazards); regulating uses around airports consistent with Airport Land Use Compatibility Plans (S-P21, Development Compatibility and S-P22, Airport Land Use Compatibility Criteria), and by regulating land uses in flood hazard areas (S-P10, Federal Flood Insurance Program).
- Air Quality Element policies require that construction and grading dust control measures achieve local air quality standards (AQ-P4, Construction and Grading Dust Control) and air quality impacts of new development are reduced through the implementation of mitigation measure during discretionary review (AQ-P5, Air Quality Impacts from New Development).

Conclusion

These policies and their implementing programs would encourage a reduction in the amount of solid waste generated by land uses and development and encourage programs to achieve the maximum possible waste diversion rates and to reduce waste flows. Disposal capacity remains above the IWMP 15-year capacity siting requirements with an estimated 26 year capacity (as of 2010) at the Anderson Landfill and up to 100 years at the Dry Creek Landfill. Therefore, the projected peak population growth during the General Plan Update planning period would be served by a landfill with sufficient permitted capacity to accommodate solid waste disposal needs during and beyond the planning period. Therefore, the proposed County General Plan Update would be served by a landfill with sufficient permitted capacity to accommodate solid waste disposal needs during and beyond the planning period and resulting impacts would be **less than significant.**

Mitigation

None required