

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.humboldt.gov/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 | |
|--|-------------|---------------------|-------------------------------------|---------------------------------------|--------------|----------------|--------------------|
| | Existing | Estimated Available | (MGD) | | (MG) Storage | (MGD) Peak Day | Gal/Day/Connection |
| | | | Supply | Treatment | | | |
| 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 | |
|--|-------------|-----------------------------------|-------------------------------------|---------------------------|--------------|----------------|--------------------|
| | Existing | Estimated Available | (MGD) | | (MG) Storage | (MGD) Peak Day | Gal/Day/Connection |
| | | | Supply | Treatment | | | |
| 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) | | (MG) Storage | (MGD) Peak Day | Gal/Day/ Connection |
| | | | Supply | Treatment | | | |
| 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 | --- | | |

¹The 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.

²The 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.”

³For 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.

⁴The 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.”

⁵According 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 |

¹Permit 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,)
- Myrtle town

- 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 Pjalorsi 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 Pjalorsi 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 from 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 Peach 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.

| Planning Watershed | Housing Units | |
|----------------------|---------------------|---------------|
| | 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 | Holmes/Redcrest |
| Garberville/Redway | McKinleyville |
| Blue Lake/Fieldbrook | Weott/Meyers Flat |
| Greater Arcata Area | Willow Creek |
| Greater Eureka Area | |

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

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

| <i>Service Provider</i> | <i>Connections</i> | | <i>Housing Units 2028</i> |
|-------------------------|--------------------|----------------------------|---------------------------|
| | <i>Existing</i> | <i>Currently Available</i> | |
| <i>Manila CSD</i> | 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 WWTF 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 providers 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.

| <i>Provider</i> | <i>Connections</i> | | <i>Housing Units 2028</i> |
|--|--------------------|----------------------------|-------------------------------|
| | <i>Existing</i> | <i>Currently Available</i> | |
| 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 |

| <i>Provider</i> | <i>Connections</i> | | <i>Housing Units 2028</i> |
|---|--------------------|----------------------------|-------------------------------|
| | <i>Existing</i> | <i>Currently Available</i> | |
| 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 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

| Planning Watershed | Water System Type | | |
|----------------------|-------------------|---------|-------|
| | 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 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 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 $(3,728 \times 2.700476 - 10,067)$ – 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

3.4 Public Services

This section addresses the provision of public services within the county, including fire protection, law enforcement, and education, and an assessment of the potential impacts to these services resulting from the implementation of the proposed General Plan Update land use diagram and policies. The analysis of water, wastewater and solid waste can be found in Section 3.3, Utilities and Services, and wildland fire prevention and suppression and hazardous materials handling and disposal are discussed in Section 3.7 Hazards and Hazardous Materials.

The General Plan Update covers development in the unincorporated areas of the County and the Environmental Impact Report (EIR) focuses on impacts related to that development. However, fire protection and school jurisdictional boundaries in many cases include cities and unincorporated areas. Therefore, this EIR discusses these public services in both the unincorporated County and in cities where it is useful for understanding the existing setting, school enrollment and service levels, or potential facility needs. Existing public services conditions are described in the *Community Infrastructure & Services Technical Report*, July 2008 (Appendix Q), and the *Building Communities Report*, 2002 (Appendix C). These reports, which are available for review at the Planning Division public counter at 3015 H Street in Eureka or for download at <http://humboldt.gov.org/571/Background-Reports>, are incorporated 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 on for the environmental setting and analyses.

3.4.1 Public Services - Environmental and Regulatory Setting

Fire Protection

Fire protection services include more than just fire suppression. Local fire departments provide a range of services, including emergency medical services (approximately 80 percent of calls for service include emergency medical interventions), response to traffic collisions and auto extrication, technical rescue (rope, swift water, collapse, and confined space rescue), hazardous materials, and general public assistance responses. As a result, the General Plan Update defines fire protection to include all of the aforementioned services.

Local fire departments are formed specifically to provide community fire protection services within their jurisdictional boundaries or response area. The County's larger population centers of Eureka and Arcata/McKinleyville have fire departments with paid staff and multiple stations. Fire districts in Blue Lake, Shelter Cove (RID No. 1) and Fortuna have recently added paid Chiefs to better handle administrative and incident management responsibilities as well to address the planning and response needs of their communities. Other communities typically have one station staffed by all-volunteers. The smallest communities have the most limited resources, often relying on community contributions and used equipment to provide service.

There are 39 fire departments providing fire protection to unincorporated communities and cities in Humboldt County including: one County Service Area (CSA); seven Community Service Districts (CSDs); 18 Fire Protection Districts (FPDs), one Resort Improvement District (RID), one city fire department, one Joint Powers Authority that is comprised of a city and an FPD, and 12 fire companies in unincorporated towns not associated with local government agencies (including

the Hoopa and Yurok Volunteer Fire Departments) that may be established pursuant to Sections 14825 through 14860 of the California Health and Safety Code.

Since the initiation of the General Plan Update process three volunteer fire companies have formed as fire protection districts. In addition, the Scotia Volunteer Fire Department is part of the new Scotia Community Services District, which was approved by the voters in 2011. For the purposes of this EIR, all of the fire department types listed above may be referred to together as "fire departments" or "fire service providers" and the various special district types that provide fire protection services may be referred to collectively as "districts" or "fire related districts." The City of Trinidad has its own fire department and there are four state, federal, or tribal fire departments that provide seasonal wildland fire protection that also work in cooperation with local fire departments.

In responding to emergencies, local fire departments work closely with law enforcement, public utilities, and ambulance service providers. Fire departments and ambulance companies are dispatched to medical calls simultaneously. In most cases, fire departments arrive on scene prior to the ambulance and are expected to stabilize the patient, gather vital signs, and prepare the patient for transport to the hospital.

North Coast Emergency Medical Services Agency, which is a Joint Powers Authority governed by a Board consisting of one supervisor from each of the three member counties, directs the emergency management services (EMS) system on behalf of Humboldt County. The EMS system consists of the advanced life support and transport provided by the ambulance companies listed below, first responder services provided by the fire departments and other agencies within the County and base hospitals that provide medical control and emergency department receiving facilities. Humboldt County Code Title V, Health and Safety, Division 5, Emergency Medical Services System, establishes the standards for ambulance permits and service rates, both of which are approved by the Humboldt County Board of Supervisors.

Ambulance service within Humboldt County is provided by the following:

- Arcata/ Mad River Ambulance. Serves the coastal area from Manila north to the Del Norte County line and east along S.R. 299 to Lord Ellis Summit (Service Area I).
- Hoopa Ambulance. Serves eastern portion of the County primarily north of S.R. 299 (Service Area II).
- City Ambulance, of Eureka. Serves the Eureka area and most of the area south of Eureka to the Mendocino County line and east to the Trinity County line (Service Areas III - V).
- Southern Trinity Area Rescue (STAR). STAR is a volunteer division of Southern Trinity Health Services, a non-profit community health center, and serves a portion the eastern County along S.R. 36 east of the Larabee area.

The California Department of Forestry and Fire Protection (CAL FIRE) has responsibilities for wildland fire protection and resource management. See Section 3.7, Hazards and Hazardous Materials, for a comprehensive discussion of wildland fire responsibilities within Humboldt County. CAL FIRE is responsible for suppressing wild land fires within the State Responsibility Area (SRA) (generally defined as areas classified by the State Board of Forestry containing forest and range habitat) and provides structural fire protection services only to CSA 4, Trinidad area, under contract to Humboldt County. The CAL FIRE Humboldt-Del Norte Unit also provides fire dispatch services year round under contract to Humboldt County and the Humboldt County Fire Dispatch Co-op. It is not the state's responsibility to provide fire protection services to any building or structure located within state responsibility area unless the Department of Forestry and Fire Protection has entered into a cooperative agreement with a local agency for those purposes

pursuant to Section 4142 of the Public Resources Code (Public Resources Code 4136). However, CAL FIRE may provide, when available and to the extent that it does not require additional funds, rescue, first aid, and other emergency services to the public in state responsibility areas (Public Resources Code 4114).

The following table (Table 3.4-1, Fire Protection Services in Humboldt County) contains information regarding each of the fire departments that provide service within Humboldt County.

Table 3.4-1. Geography of Fire Protection Services Delivery in Humboldt County.

| Name of Organization | Local Govt. Agency | Department Type | Area in Square Miles | | Number of Fire Stations | General Areas Protected |
|---|--------------------|------------------------------|----------------------|----------------------------|-------------------------|--|
| | | | District | Non-District Response Area | | |
| Lower Klamath Planning Watershed | | | | | | |
| Orleans Community Services District | No | Volunteer | 0 | 30.7 | 1 | Orleans/Somes Bar |
| Yurok Volunteer Fire Company | No | Volunteer | N/A | 33.6 | 2 | Weitchpec, Johnsons |
| Lower Trinity Planning Watershed | | | | | | |
| Hoopla Volunteer Fire Company | No | Volunteer | N/A | 138 | 1 | Hoopla |
| Willow Creek Fire Protection District | Yes | Volunteer | 6.6 | 20 | 1 | Willow Creek, S.R. 299 |
| Redwood Creek Planning Watershed | | | | | | |
| Orick Community Services District | Yes | Volunteer | 2.3 | 121.5 | 1 | Orick, Bald Hills, Johnson's Road |
| Trinidad Planning Watershed | | | | | | |
| County Service Area No. 4 (Cal Fire) | Yes | Career | 23.5 | 3.7 | 1 | Westhaven, Big Lagoon, Freshwater Lagoon |
| Trinidad Fire Department | Yes | Volunteer | 0.6 | 1.6 | 1 | Trinidad |
| Westhaven Volunteer Fire Department | No | Volunteer | N/A | 2.7 | 1 | Westhaven |
| Mad River Planning Watershed | | | | | | |
| Blue Lake Fire Protection District | Yes | Combination Career-Volunteer | 13.6 | 107.5 | 1 | Blue Lake, Glendale, S.R. 299 |

| Name of Organization | Local Govt. Agency | Department Type | Area in Square Miles | | Number of Fire Stations | General Areas Protected |
|--|--------------------|------------------------------|----------------------|----------------------------|-------------------------|---|
| | | | District | Non-District Response Area | | |
| Fieldbrook-Glendale Community Services District | Yes | Volunteer | 14.4 | 0 | 1 | Fieldbrook |
| Ruth Lake Community Services District ¹ | Yes | Volunteer | 27.37 | 0 | 1 | Dinsmore |
| Eureka Plain Planning Watershed | | | | | | |
| Arcata Fire Protection District | Yes | Combination Career-Volunteer | 62 | 5.9 | 3 | Arcata, Essex, Jacoby Creek, Manila McKinleyville |
| Humboldt Bay Fire (Humboldt #1 Protection District and the City of Eureka Fire Department) | Yes | Career | 55.8 | 1 | 5 | Myrtle town, Bayview, Humboldt Hill, Cutten, Freshwater (plus the City of Eureka and College of the Redwoods) |
| Kneeland Fire Protection District | Yes | Volunteer | 37.6 | 5.9 | 1 | Kneeland, Butler Valley |
| Samoa Peninsula Fire Protection District | Yes | Volunteer | 2.8 | 0.2 | 1 | Samoa, Fairhaven |
| Van Duzen Planning Watershed | | | | | | |
| Bridgeville Fire Protection District | Yes | Volunteer | 193.3 | 0 | 1 | Bridgeville, Dinsmore |
| Carlotta Community Services District | Yes | Volunteer | 4.4 | 46.1 | 1 | Carlotta |

| Name of Organization | Local Govt. Agency | Department Type | Area in Square Miles | | Number of Fire Stations | General Areas Protected |
|---|--------------------|------------------------------|----------------------|----------------------------|-------------------------|---|
| | | | District | Non-District Response Area | | |
| Lower Eel Planning Watershed | | | | | | |
| Ferndale Fire Protection District | Yes | Volunteer | 44.2 | 68.3 | 1 | Ferndale, Port Kenyon, Grizzly Bluff, Centerville Wildcat Ridge |
| Fortuna Fire Protection District | Yes | Combination Career-Volunteer | 29.4 | 0 | 3 | Fortuna, Hydesville, Fernbridge, U.S. 101 from Rio Dell to Fernbridge |
| Loleta Fire Protection District | Yes | Volunteer | 48.9 | 0 | 1 | Loleta, Table Bluff, Fernbridge, U.S. 101 from CR to Fernbridge |
| Redcrest Volunteer Fire Company | No | Volunteer | N/A | 26 | 1 | Redcrest, Holmes, Pepperwood Avenue of the Giants |
| Rio Dell Fire Protection District | Yes | Volunteer | 4.6 | 7.1 | 1 | Rio Dell |
| Scotia Community Services District | Yes | Combination Career-Volunteer | 0.75 | 0.95 | 1 | Scotia, Stafford, Shively |
| Middle Main Eel Planning Watershed | | | | | | |
| Alderpoint Volunteer Fire Company | No | Volunteer | N/A | 196.1 | 1 | Alderpoint, Fort Seward, Blocksburg |
| Fruitland Fire Protection District | Yes | Volunteer | 19.8 | 4.9 | 1 | Fruitland, Eel Rock |
| Palo Verde Volunteer Fire Company | No | Volunteer | N/A | 49.9 | 1 | Palo Verde |
| South Fork Eel Planning Watershed | | | | | | |
| Briceland Volunteer Fire Department | No | Volunteer | 43.9 | 0 | 1 | Briceland |

| Name of Organization | Local Govt. Agency | Department Type | Area in Square Miles | | Number of Fire Stations | General Areas Protected |
|--|--------------------|------------------------------|----------------------|----------------------------|-------------------------|-------------------------------------|
| | | | District | Non-District Response Area | | |
| Garberville Fire Protection District | Yes | Volunteer | 1.1 | 56.5 | 1 | Garberville, Benbow |
| Miranda Community Services District | Yes | Volunteer | 0.5 | 24.2 | 1 | Miranda, Avenue of the Giants |
| Myers Flat Fire Protection District | Yes | Volunteer | 0.7 | 1.5 | 1 | Myers Flat, Avenue of the Giants |
| Phillipsville Volunteer Fire Company | No | Volunteer | N/A | 4.4 | 1 | Phillipsville, Avenue of the Giants |
| Redway Fire Protection District | Yes | Volunteer | 1.1 | 2.2 | 1 | Redway |
| Salmon Creek Volunteer Fire Company | No | Volunteer | N/A | 31.1 | 1 | Salmon Creek |
| Sprowel Creek Volunteer Fire Company | No | Volunteer | N/A | 2.6 | 1 | Sprowel Creek |
| Telegraph Ridge Fire Protection District | Yes | Volunteer | 36.9 | 0 | 1 | Ettersburg |
| Weott Community Services District | Yes | Volunteer | 0.5 | 36.9 | 1 | Weott, Avenue of the Giants |
| Cape Mendocino Planning Watershed | | | | | | |
| Honeydew Volunteer Fire Company | No | Volunteer | N/A | 66.5 | 2 | Honeydew |
| Petrolia Fire Protection District | Yes | Volunteer | 11.4 | 91.7 | 1 | Petrolia, Ocean House |
| Resort Improvement District No. 1 (Shelter Cove) | Yes | Combination Career-Volunteer | 4.8 | 1.7 | 1 | Shelter Cove |

| Name of Organization | Local Govt. Agency | Department Type | Area in Square Miles | | Number of Fire Stations | General Areas Protected |
|---|--------------------|-----------------|----------------------|----------------------------|-------------------------|-----------------------------|
| | | | District | Non-District Response Area | | |
| Whale Gulch Volunteer Fire Company ³ | No | Volunteer | N/A | 9.4 | 1 | Whale Gulch |
| Whitethorn Fire Protection District | Yes | Volunteer | 4.6 | 19.5 | 1 ⁴ | Whitethorn, Thorne Junction |

¹The Southern Trinity Volunteer Fire Department is associated with the Ruth Lake Community Services District, which is located primarily in Trinity County with district boundaries that also extend into Humboldt County and include the Dinsmore area. The Southern Trinity VFD is dispatched by the Trinity County Sheriff’s Office, including calls for service within the Dinsmore area.

³The Whale Gulch Volunteer Fire Company is based in Mendocino County and is dispatched through the Humboldt Fire Dispatch Cooperative to incidents in the southern Chemise Mountain Road area. This area is too far from Shelter Cove for the Resort Improvement District No. 1 supported Shelter Cove Volunteer Fire Department to serve and not accessible by the Whitethorn Fire Protection District.

The table above indicates that of the approximately 1,900 square miles served by local fire departments; nearly 40 percent is located within the jurisdictional boundaries of a local agency. The average response area outside district boundaries for a local agency is over eight times its jurisdictional boundary. Local agencies serve approximately 637 square miles outside of their district boundaries. Volunteer fire companies serve approximately 560 square miles.

Approximately 84 percent of the population of the unincorporated area resides within the boundaries of a fire related district. However, in the areas outside the greater Humboldt Bay area, Trinidad area, and Lower Eel River valley, significant portions of the population reside outside fire related district boundaries.

The importance of fire related districts has increased since the state legislature amended the State Subdivision Map Act in 2013 to require that all subdivisions of parcels located in the State Responsibility Area (SRA) be within the boundaries of a county, city, special district, political subdivision of the state, or another entity that is organized solely to provide fire protection services that is monitored and funded by a county or other public entity (Government Code Section 66474.02). There are approximately 340,000 acres of privately owned property in the County within the SRA that are not located within the boundaries of a fire related district. Consequently, parcels in these areas cannot be subdivided without the provision of structural fire protection services meeting the definition of the Government Code.

Law Enforcement

Law enforcement services within Humboldt County are provided by each of the seven cities within their jurisdictional boundaries, the Hoopa and Yurok Tribe within their respective tribal lands, and the Humboldt County Sheriff’s Office provides a variety of public safety services countywide, including court and corrections services and law enforcement services for the unincorporated areas of the County. The California Highway Patrol is responsible for enforcing traffic laws on roadways within the unincorporated areas and on state highways throughout the County.

The Sheriff's Office Operations Bureau is made up of seven units under the command of the Undersheriff. The most visible of these units is the Patrol Unit. Sheriff's Deputies assigned to the Patrol Unit are responsible for responding to emergency calls for service, criminal investigations, and crime prevention through neighborhood and beat patrols. Patrol has one main station in Eureka, substations in Garberville, Willow Creek, and McKinleyville, and four resident deputy posts.

The Sheriff's Office has mutual aid agreements with cities and the California State Highway Patrol. Mutual aid is an agreement between agencies where the agency of jurisdiction can request manpower or resources from allied agencies or agencies within the surrounding areas. These agencies could be local or State agencies.

Response Times. While specific data on response times can be difficult to determine for rural or semi-rural areas, the Sheriff's Office has provided estimates of response times for service calls originating in communities within the County as part of the Community Services and Infrastructure Technical Report process. Industry standards recommend five- to ten-minute response times. The cities of Eureka and Arcata have set a standard of a five-minute response to calls for service.

Table 3.4-2 below displays the communities or areas served by Sheriff's sub-stations and average response times for each. Based on anecdotal information provided by the Sheriff's Office, Deputies are capable of responding to calls for service in less than 10 minutes in over half the communities analyzed. In the more rural areas of the County, maximum response times may reach 50 minutes because of longer travel distances, varied topography, available resources, and the location of the Sheriff Deputy on patrol in relation to the incident.

Table 3.4-2. Sheriff's Office Sub-Station Areas Patrolled and Average Response Times.

| Station <i>Maximum Response Times</i> | Planning Watersheds and CPAs Patrolled | Communities with Response Times 10 Minutes or Less | Areas with Response Times Greater than 10 Minutes |
|---|---|---|--|
| Main Station <i>30 Minutes Maximum Response Time</i> | Eureka Plain and Lower Eel and portion of Van Duzen Planning Watersheds Arcata, Avenue of the Giants, Eureka, Fortuna, Freshwater, Hydesville-Carlota, Jacoby Creek and Rio Dell Community Plans; Humboldt Bay, and Eel River Area Plans | Acata South Eureka Myrtle town Indiano la Jacoby Creek Manila Samoa | Bridgeville Fortuna Freshwater Hydesville-Carlotta Loleta Rio Dell Riverside Scotia Redcrest |
| Northern Area Command Station <i>40 Minutes Maximum Response Time</i> | Redwood Creek (Orick area); Trinidad; and Mad River Planning Watersheds Arcata, Blue Lake, McKinleyville, Trinidad-Westhaven Community Plans; Humboldt Bay, McKinleyville, Trinidad, and North Coast Area Plans | Blue Lake Fieldbrook Glendale McKinleyville Trinidad Westhaven | Big Lagoon Orick |

| Station <i>Maximum Response Times</i> | Planning Watersheds and CPAs Patrolled | Communities with Response Times 10 Minutes or Less | Areas with Response Times Greater than 10 Minutes |
|---|---|---|--|
| Garberville Station <i>50 Minutes Maximum Response Time</i> | South Fork Eel; Mendocino; Middle Fork Trinity Avenue of the Giants; Garberville-Alderpoint-Redway-Benbow Community Plans; Shelter Cove and South Coast Area Plans | Garberville Redway | Alderpoint Benbow Briceland Miranda Myers Flat Phillipsville Redcrest Shelter Cove Weott |
| Trinity River Station <i>45 Minutes Maximum Response Time</i> | Lower Klamath, Lower Trinity, South Fork Trinity, and eastern portion of Redwood Creek Planning Watersheds. Willow Creek and Orleans Community Plans | Willow Creek | Hoopa Valley Orleans Redwood Valley |
| Resident Deputy Posts <i>45 Minutes Maximum Response Time</i> | Bridgeville, Orick, Orleans, and Shelter Cove | Bridgeville Orick Orleans Shelter Cove | |

Source: Community Infrastructure and Services Technical Report.

Public Education

Humboldt County communities are currently served by 32 public school districts. In addition, there are schools operated by the Humboldt County Office of Education and private schools. The largest district in the County in terms of enrollment is the Eureka City Unified School District, which has almost 4,000 students. There are four other districts with enrollments over 1,000 students. Average district enrollment in Humboldt County is approximately 550 students.

From the 1995 to 2010 academic years, California school enrollments rose by 18.5 percent, or 749,778 students. Overall enrollment in Humboldt County K-12 schools declined by 18 percent, or 4,028 students, between the 1995 and 2010 school years (California Department of Education, Educational Demographics Unit, 2008). Losses were equally distributed between kindergarten through eighth grade and high schools. Between 2010 and 2015 enrollment in Humboldt County grew by 437 students, with growth in enrollment concentrated around Humboldt Bay and Fortuna.

Declining enrollment has contributed to the closing of some school sites over the last ten to fifteen years. For example, within the Eureka Unified School District, Marshall Elementary School closed in 2001 and is currently used as part of the high school campus; Worthington Elementary School closed in 2003 and is used for adult education services; and Jefferson Elementary closed in 2006. The Osprey Learning Center in Garberville was closed and moved to the South Fork High School campus in Miranda. During this same period, nine schools opened in Humboldt County, including two new middle schools, one high school, and six other schools, including three community day schools. These school openings were

not triggered by increases in enrollment, but are the result of local preferences for charter schools or other school program needs. Table 3.4-3, School District Enrollment in Humboldt County, provides a listing of School Districts and total district enrollment:

Table 3.4-3. School District Enrollment in Humboldt County 1990-2015.

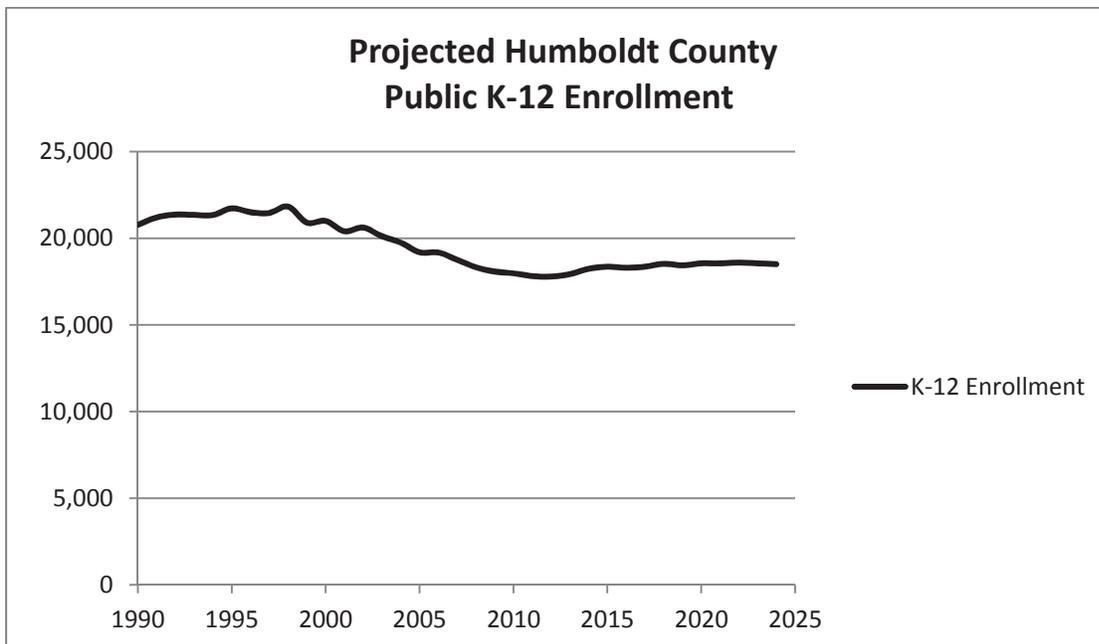
| District | Enrollment | | | | Avg. Annual Growth Rate |
|---------------------------------|---------------|---------------|---------------|---------------|-------------------------|
| | 1990 | 2000 | 2010 | 2015 | |
| Arcata Elementary | 910 | 899 | 956 | 1,067 | 0.64% |
| Big Lagoon Union Elementary | 57 | 65 | 43 | 23 | -3.57% |
| Blue Lake Union Elementary | 355 | 217 | 162 | 175 | -2.79% |
| Bridgeville Elementary | 120 | 68 | 36 | 34 | -4.92% |
| Cuddeback Union Elementary | 132 | 137 | 133 | 120 | -0.38% |
| Cutten Elementary | 576 | 513 | 561 | 605 | 0.20% |
| Eureka City Unified | 6,121 | 5,701 | 3,884 | 3734 | -1.96% |
| Ferndale Unified | 515 | 524 | 495 | 525 | 0.08% |
| Fieldbrook Elementary | 183 | 104 | 127 | 147 | -0.87% |
| Fortuna Elementary ¹ | 703 | 783 | 685 | 1374 | 2.72% |
| Fortuna Union High | 1,417 | 1,825 | 1,773 | 1,134 | -0.89% |
| Freshwater Elementary | 333 | 300 | 333 | 318 | -0.18% |
| Garfield Elementary | 34 | 61 | 61 | 60 | 2.30% |
| Green Point Elementary | 21 | 18 | 7 | 10 | -2.92% |
| Humboldt County Schools | 313 | 479 | 507 | 441 | 1.38% |
| Hydesville Elementary | 215 | 157 | 155 | 197 | -0.35% |
| Jacoby Creek Elementary | 408 | 401 | 439 | 432 | 0.23% |
| Klamath-Trinity Joint Unified | 1,257 | 1,153 | 1,033 | 1,073 | -0.63% |
| Kneeland Elementary | 51 | 32 | 34 | 25 | -2.81% |
| Loleta Union Elementary | 170 | 326 | 257 | 291 | 2.17% |
| Maple Creek Elementary | 16 | 18 | 10 | 12 | -1.14% |
| Mattole Unified | 126 | 610 | 956 | 721 | 7.23% |
| McKinleyville Union Elementary | 1,511 | 1,408 | 1,140 | 1,156 | -1.07% |
| Northern Humboldt Union High | 1,544 | 2,050 | 1,607 | 1,790 | 0.59% |
| Orick Elementary | 105 | 57 | 24 | 16 | -7.25% |
| Pacific Union Elementary | 650 | 609 | 508 | 579 | -0.46% |
| Peninsula Union Elementary | 104 | 88 | 39 | 34 | -4.37% |
| Rio Dell Elementary | 377 | 313 | 311 | 325 | -0.59% |
| Scotia Union Elementary | 267 | 356 | 221 | 222 | -0.74% |
| South Bay Union Elementary | 638 | 526 | 641 | 933 | 1.53% |
| Southern Humboldt Joint Unified | 1,589 | 1,277 | 790 | 800 | -2.71% |
| Trinidad Union Elementary | 254 | 120 | 185 | 177 | -1.43% |
| Total | 21,072 | 21,195 | 18,113 | 18,550 | -0.51% |

1. Includes Rohnerville Elementary District, which was consolidated with Fortuna Elementary District in 2012. Source: California Department of Education, Humboldt County Office of Education, 2016.

The four largest districts in the County, Eureka City Unified, Northern Humboldt Union High, McKinleyville Union Elementary, and Fortuna Union High, enrolled 7,814 students, or 42 percent of the County’s total enrollment, in 2015. The remainder is divided among 28 other school districts.

Figure 3.4-1, Public K–12 and High School Enrollment Projections, shows the California Department of Finance school enrollment projections for Humboldt County to the year 2025. The Department of Finance projects that public school enrollment will increase slightly from 18,355 in the 2015-2016 school year to 18,501 in school year 2024-2025, or a 0.09 percent average annual growth rate. Beyond the year 2025, the California Department of Finance projects that the number of school-age children (ages 5 to 19) in Humboldt County will decrease from 23,242 in 2025 to 21,201 in 2040, or a 9 percent reduction. Based on the expected decline in the number of students, school capacity will likely not be a constraint to future growth. This projection assumes no change in the public school enrollment rate.

Figure 3.4-1. Public K–12 and High School Enrollment Projections.



Source: State of California, Department of Finance, California Public K-12 Graded Enrollment and High School Graduate Projections by County, 2016 Series. Sacramento, California, December 2016.

Property owners and developers are often expected to fund a portion of the cost of new school facilities. The State of California School Facility Program allows K-12 School Districts to apply for funding to buy land, construct new buildings, and modernize or renovate existing buildings. The amount of funding available to a School District is based on a formula that considers the number of students a district expects to enroll that cannot be served in existing facility space. This program requires the State and School Districts to share the cost of facilities. For new construction projects, the cost is shared equally by the state and School Districts. For modernization projects, the state pays 60 percent and School Districts pay 40 percent of the cost. If a School District faces unusual circumstances, it may apply for “hardship” funding from the State to offset its local share of costs.

There are only a few sources of funding for local School Districts to fund their share of the cost of new construction or modernization projects: (1) school general funds or donations; (2) local general obligation bonds; (3) impact fees; or (4) Mello Roos Community Facilities District bond

funds. Aside from school revenue and donations, Humboldt County schools use general obligation bonds and impact fees to fund the local share of school facility projects.

There are six school districts that have implemented fee programs (Ferndale, Fortuna, Hydesville, McKinleyville Union, Pacific Union, and Rohnerville). Impact fees are imposed on new development within the district and are collected at the city and County building permit counters, on behalf of the School District. Other local school districts that require the development of buildings and facilities may need to implement fee programs.

3.4.2 Public Services - Standards of Significance

This analysis uses the significance criteria from the CEQA Guidelines Appendix G, Section a. The proposed General Plan Update results in a significant impact on public services if it would:

- a) result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire protection, police protection, schools, or other public facilities.

This impact topic is discussed with respect to school facilities in Impact 3.4.3.1, Schools; fire protection facilities in Impact 3.4.3.2, Fire Protection; and law enforcement facilities in Impact 3.4.3.3, Law Enforcement.

3.4.3 Public Services - Impacts and Mitigation Measures

Impact 3.4.3.1. Schools

The proposed General Plan Update would have a significant effect if it would directly result in the need, or facilitates the need, for additional public school buildings, the construction of which could have a potentially significant effect on the environment.

This impact analysis addresses item “a” above, with respect to school facilities, of the significance criteria described in 3.4.2. Based on Appendix G of the CEQA Guidelines,

- a) result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for schools.

Based on projected enrollment and population estimates by the State of California, new school facilities are not expected to be required during the planning period. Total K-12 public school enrollment is expected to increase by 204 students between 2016 and 2025, slightly more than one percent (California Public K-12 Graded Enrollment and High School Graduate Projections by County— 2016 Series, Department of Finance, December 2016). However, public school enrollment in the County declined by 2,701 students between 2000 and 2016, a 13 percent reduction.

The School Districts listed in Table 3.4-3 experienced either no appreciable enrollment growth, or enrollment decline, over the last 15 to 20 years and this trend is expected to continue during the planning period. Although state school enrollment projections are only made to 2025, the California Department of Finance is projecting that the number of school-age children in Humboldt County (ages 5 to 19) will steadily decline between the current year and 2040—a total reduction of 2,812 persons. These data would indicate that school enrollment levels are not likely to increase Countywide, even by 2040. However, some schools may experience increases in enrollment due to local increases in development activity, development within cities, or due to out of district transfers. Also, declines in enrollment or other school facility planning objectives may lead to school closures and result in increased enrollment within certain school facilities. Nonetheless, the slight increase in K-12 enrollment that is projected to occur during a portion of the planning period would likely be accommodated by existing school facilities.

Table 3.4-4, Projected Population Growth within Humboldt County Public School Districts displays the projected peak population within the General Plan Update planning period, projected to occur in 2028, within school district boundaries. Student population projections were calculated by multiplying projected peak population within each school district by the statewide average Student Yield Factors from the Enrollment Certification/ Projection School Facility Program form (SAB 50-01) from the California office of Public School Construction, which are as follows: elementary school district = 0.5 students per dwelling unit; high school district = 0.2 students per dwelling unit; and unified school district = 0.7 students per dwelling unit.

As stated above, the California Department of Finance is projecting that the number of school-age children in Humboldt County will steadily decline between 2000 and 2040. These data would indicate that school enrollment levels are not likely to increase Countywide. As a result, Student Yield Factors from the Enrollment Certification/ Projection School Facility Program form will likely overestimate future enrollment levels.

Table 3.4-4. Projected Peak Enrollment within Humboldt County Public School Districts, 2028.

| School District | Projected HH Growth 2028 | New K-8 Students | New 9-12 Students | Total New Students |
|---|--------------------------|------------------|-------------------|--------------------|
| South Bay Union School District | 418 | 209 | 83 | 292 |
| Southern Humboldt Joint Unified School District | 311 | 155 | 62 | 217 |
| McKinleyville Union School District | 230 | 114 | 45 | 159 |
| Cutten School District | 225 | 112 | 44 | 156 |
| Eureka Unified School District | 158 | 79 | 31 | 110 |
| Arcata School District | 120 | 59 | 23 | 82 |
| Blue Lake Union School District | 59 | 29 | 11 | 40 |
| Hydesville School District | 38 | 19 | 7 | 26 |
| Fortuna Union School District | 34 | 17 | 6 | 23 |
| Klamath-Trinity Joint Unified | 23 | 11 | 4 | 15 |
| Bridgeville School District | 20 | 10 | 4 | 14 |
| Peninsula Union School District | 11 | 5 | 2 | 7 |
| Loleta Union School District | 11 | 5 | 2 | 7 |
| Mattole Unified School District | 7 | 3 | 1 | 4 |
| Jacoby Creek School District | 7 | 3 | 1 | 4 |
| Maple Creek School District | 7 | 3 | 1 | 4 |

| School District | Projected HH Growth 2028 | New K-8 Students | New 9-12 Students | Total New Students |
|---|--------------------------|------------------|-------------------|--------------------|
| Kneeland School District | 5 | 2 | 1 | 3 |
| Trinidad Union School District | 5 | 2 | 1 | 3 |
| Ferndale Unified School District | 5 | 2 | 0 | 2 |
| Garfield School District | 4 | 2 | 0 | 2 |
| Green Point School District | 4 | 1 | 0 | 1 |
| Big Lagoon School District | 3 | 1 | 0 | 1 |
| Orick School District | 3 | 1 | 0 | 1 |
| South Trinity Joint Unified School District | 3 | 1 | 0 | 1 |
| Cuddeback Union School District | 3 | 1 | 0 | 1 |
| Fieldbrook School District | 3 | 1 | 0 | 1 |
| Freshwater School District | 2 | 1 | 0 | 1 |
| Scotia Union School District | 2 | 0 | 0 | 0 |
| Rio Dell School District | 1 | 0 | 0 | 0 |
| Rohnerville School District | 1 | 0 | 0 | 0 |
| Pacific Union School District | 1 | 0 | 0 | 0 |
| Grand Total | 1,721 | 848 | 329 | 1,177 |

Source: Humboldt County Planning and Building, January, 2017.

Projected levels of population growth during the General Plan planning would likely not trigger the need for additional public school facilities. However, some schools may experience increases in enrollment due to local increases in development activity consistent with Department of Finance projected population growth, development within cities, or due to out of district transfers. The precise locations and extent of additional school facilities that may be required at build out of the General Plan land use are not known at this time. Where the growth in enrollment related to population growth during the General Plan Update planning period exceeds current school capacity and there are no planned improvements, this EIR provides a general discussion of the circumstances and the potential environmental effects that could result.

School improvement projects are typically located at or adjacent to existing school facilities. The acreage required for the school expansion projects vary depending on the type of school facility required and the enrollment levels that the facility is projected to accommodate. The area affected by such projects may be as small as 5,000 to 10,000 square feet (e.g., a new classroom) while larger projects could be several acres in area (e.g., new school site). Additional site requirements may include new or expanding parking areas, utility extensions, roadway modifications, or improvements for athletic facilities.

Analysis of Relevant General Plan Update Policies

The General Plan Update contains a series of policies that direct the County to proactively coordinate with service providers, monitor service capacity in relation to planned development, and encourage the establishment of funding mechanisms to provide the infrastructure needed to serve growth during the plan period. If the term "service provider" is interpreted broadly to include schools, the following policies would lessen and potential impact that growth during the plan period may have on school facilities. Policy C-P18, County Feedback to School Districts Regarding Transportation Planning, directs the County to provide feedback to school districts

regarding new school sites, opening closed school sites, and significant changes in attendance levels or hours of operation to give advice on mitigating traffic impacts and promoting multimodal school site access. Policy IS-P1, Coordination with Service Providers, requires the County to work cooperatively with service providers to plan and implement public service projects consistent with this plan. Policy IS-P8, Infrastructure and Services Capacity, requires the County to coordinate with service providers to monitor service and infrastructure capacities in relation to existing and planned demand. In particular Policy IS-P1, Coordination with Service Providers, directs the County to work with service providers to identify and secure funding to accommodate the development potential consistent with this plan.

Although the population of school-age children is declining in the County, there may be areas within the County where the implementation of the proposed General Plan may result in the need, or facilitate the need, for additional public school buildings. The following is a summary of General Plan Update policies that would reduce construction related environmental impacts from new or expanded school 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 State Department of Finance projects that school enrollment will increase by 204 students between 2016 and 2025, and separately projects that population growth within Humboldt County will peak in 2028, and then decline thereafter resulting in a decrease in the absolute number of school age population at the end of the General Plan Update planning period. Notwithstanding projected enrollment declines, Table 3.4-4, Buildout Projected Peak Enrollment Projections within Humboldt County Public School Districts- 2028, shows school enrollment projections during the General Plan Update planning period by school district that is based on a standard student yield factor per household. As a result, there may be areas within the County where the implementation of the proposed General Plan may result in the need, or facilitate the need, for additional public school buildings.

School development projects would be carried out by the school district, which would also conduct its own project-specific environmental assessment. The project would likely not require County land use approval, but would require General Plan conformance review by pursuant to Government Code Section 65402. If the school development 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 General Plan encourages public agencies to plan for facilities in areas with adequate road, pedestrian, and bicycle circulation and access to appropriate utility services and the County would provide advice on mitigating traffic impacts and promoting multimodal school site access.

The nature and location of any potential new or expanded school facilities that could be constructed by a school district 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 in this first tier programmatic EIR. If potential new or expanded school facilities are within the responsibility and jurisdiction of other public agencies, and not the County, appropriate mitigations 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 school facilities 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, General Plan Update impacts relating to need for new or expanded school facilities triggered by the General Plan would be **less than significant**

Mitigation

None required.

Impact 3.4.3.2. Fire Protection

The proposed General Plan Update would have a significant impact if it would result in the need for new or physically altered fire facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection.

This impact analysis addresses item "a" above, with respect to fire facilities, of the significance criteria described in 3.4.2. Based on Appendix G of the CEQA Guidelines,

- a) result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire protection.

Implementation of the General Plan Update would accommodate additional residents, businesses, and other development, which would increase the need for fire protection and emergency services. Fire departments may require additional facilities, equipment, and staff in order to provide adequate levels of service.

Substantial portions of the unincorporated areas are outside of the boundaries of local agencies responsible for fire protection services and 20 to 25 percent of the County's population lives in such areas. Approximately 34 percent of fire related emergency dispatches by the Fortuna CAL FIRE Command Center to local fire departments, not including wildland fires, are for calls for service outside fire district boundaries. Fire related districts do not receive tax related revenue that would be used to support services from areas outside of district boundaries.

Projected growth during the General Plan Update planning period may occur outside of district boundaries, which would exacerbate service delivery and funding problems currently experienced by fire departments. To address this problem, the proposed General Plan Update contains a series of goals, policies, and programs to provide for orderly growth in order to ensure the provision of adequate infrastructure and services, such as fire protection.

As indicated, Humboldt County has established a program to work with fire departments to expand existing boundaries to incorporate all areas that are served by the department into their district boundaries and, where appropriate, to establish districts to facilitate improvements to the capacity of volunteer fire companies. This program is intended to address current district boundary deficiencies and to create a mechanism for departments to establish funding sources to support service levels.

It is estimated that 1,721 housing units will be needed to accommodate the peak population in the unincorporated area in 2028 and 3.1 million square feet of commercial and industrial building to accommodate projected new employment by 2040. Although new construction would be distributed across the unincorporated area, 89 percent of housing units and 92 percent of commercial and industrial square footage are projected to be developed within the more urbanized community plan and coastal zone areas. Almost 60 percent of new housing units are projected to be located within the communities around the Humboldt Bay, including the residential areas of Cutten, Ridgewood, and McKinleyville. Approximately 50 percent of commercial and industrial square footage is projected to be located within the communities around the Humboldt Bay, two-thirds of which would occur in the industrial areas along the Samoa Peninsula and Fields Landing.

Several fire departments are in the process of constructing or planning the construction of new fire facilities to better provide service. The following facilities intend to address current and future service needs.

- **Kneeland FPD.** In the process of constructing a community fire station in the northern part of the District at 6201 Greenwood Heights Drive that will replace a barn that has been used to house fire apparatus. The construction of this fire station would be completed only after the district has secured sufficient funding for new facilities and equipment.
- **Westhaven VFD.** Raising funds to expand its existing fire station to accommodate additional apparatus. The scope and timing of fire station improvements are dependent upon the success of fund raising efforts by the fire department.
- **Briceland VFD.** Acquired land in the center of Briceland to replace its station located east of Briceland. This fire station would be constructed only after the department has secured sufficient funding for new facilities and equipment.
- **Redway FPD.** Identified land within the Meadows Business Park for the development of a new fire station. This fire station would be constructed only after the district has secured sufficient funding for new facilities and equipment.
- **Garberville FPD.** Identified the need for fire stations in the Benbow area and near the Garberville Airport. Both areas are outside the boundaries of the Garberville FPD, but served by the department on a goodwill basis. These new fire stations would be constructed only after they are annexed to the district and the Garberville FPD has secured sufficient funding for new facilities and equipment.

The Ridgewood Village Draft EIR (SCH No. 2007012007) evaluated the potential environmental effects of the proposed fire station along with the other project elements. The Draft EIR identified potentially significant environmental effects associated with the following areas:

- Geology, Stability, and Failure Hazards
- Hydrology and Drainage
- Water Quality, Erosion and Drainage
- Air Quality
- Sensitive Flora and Fauna
- Streams, Wetlands and Riparian Areas
- Traffic, Circulation and Parking
- Utilities and Public Services
- Aesthetics
- Cultural Resources
- Population, Housing, and Employment
- Hazardous Materials
- Noise

The potential environmental effects of the proposed fire station were evaluated with the other Ridgewood Village project elements, such as housing, commercial structures, roads, drainage, and utility systems. Mitigation measures included in the Ridgewood Village Draft EIR reduces project related impacts to a less-than-significant-level for all impact topics except the following:

- **Air Quality.** The project conflicts with the adopted air quality plan, violates air quality standards, and would result in a cumulatively considerable increase of criteria air pollutants and expose sensitive receptors to substantial pollutant concentrations.

- **Traffic, Circulation and Parking.** The project individually, or cumulatively, exceeds the level of service standards.
- **Aesthetics.** The project substantially degrades visual character of project site and surroundings.
- **Population, Housing and Employment.** The project has potential growth- inducing impacts.
- **Noise.** The project results in a temporary and permanent noise sources in excess of General Plan standards.

Based on a comment letter on the Ridgewood Village Draft EIR by Ken Woods, Chief, Humboldt No. 1 FPD, the proposed location for the fire station contained in the Ridgewood Village project description may not be adequate. The Humboldt No. 1 FPD Chief states that a location near the intersection of Ridgewood Boulevard and Home Drive would provide improved fire protection to the project and to the existing areas of the fire district.

Analysis of Relevant General Plan Update Policies

The General Plan Update contains a series of policies that direct the County to proactively coordinate with service providers, monitor service capacity in relation to planned development, and encourage the establishment of funding mechanisms to support services and provide the infrastructure needed to serve the development allowable under the Plan. The discussion in impact topic, Impact 3.4.3.1, above describes how Policy IS-P1, Coordination with Service Providers, and Policy IS P8, Infrastructure and Service Capacity, direct the County to coordinate with service providers, monitor service capacity in relation to planned development, and encourages the establishment of appropriate funding mechanisms to ensure that adequate infrastructure and services are available for new development. In addition, Policy IS-P13, District Boundaries, requires that district boundaries and planning boundaries be compatible with the General Plan and community plans and support the orderly development and timing of infrastructure and services.

Specific to fire protection, General Plan Update Policy IS-P18, Expanded Fire Protection Services, would encourage the expansion of existing special district boundaries, or the formation of a County Service Area with agreements to fund contract fire services, as a means to provide fire protection services to areas outside of fire district boundaries. This policy is intended to address the existing problem of development outside of fire related districts as well as support the implementation of the General Plan Update Land Use Diagram. Standards IS-S4, Subdivisions Outside of Fire District Boundaries, and IS-S5, Other Development Outside of Fire District Boundaries, would require that subdivisions outside of fire district boundaries shall be conditioned to ensure the findings required by Government Code Section 66474.02 can be made and that other development or that record an acknowledgment that no emergency response and fire suppression services are available and must implement required mitigation.

Implementation Measures IS-IM20, Fire Protection Levels of Service, would support the development of levels of service standards that could be used in land use planning and project review. IS-IM21, Standards of Fire Protection Response, would encourage fire departments to conduct standards of response coverage studies to identify and address service needs. IS-IM23, Fire Protection Municipal Service Review, would support the preparation of municipal service reviews by LAFCo to support the preparation of a comprehensive countywide fire protection municipal service review by the Humboldt LAFCo to determine the best approaches to improving levels of service countywide and expand service to areas outside existing fire-related district boundaries.

Safety Element Policies and Implementation Measures are also geared to build capacity and increase cooperation with fire departments. Policy S-P12, Joint Planning and Implementation, would require the County to plan collaboratively with local fire agencies and companies, CAL FIRE, and federal fire organizations on countywide fire prevention and response strategies. Policy S-P20, Fire Service Provider Support, would require the County to make information available to fire service organizations about creating districts, increasing organizational capacity, developing funding streams, and improving Insurance Services Office (ISO) ratings for reduced insurance costs.

Because FPDs may not be able to extend adequate levels of service to all areas planned for development, through IS-IM22, County Service Area-Fire Protection, the County would establish county service areas and adequate ongoing fire protection funding sources in areas with developed and developable land that cannot be served by existing fire-related districts and where new districts cannot feasibly be established.

The discussion above identifies several fire facilities, the need for which would be facilitated by the implementation of the proposed General Plan Update. The following is a summary of General Plan Update policies that would reduce construction related environmental impacts from new or expanded fire 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

Implementation of the General Plan Update may result in the need for physical alterations and construction relating to the provision of fire protection services, the construction of which could result in significant environmental effects. Such new fire facilities would likely be constructed as part of a subdivision or require another County land use approval. In this case a project-specific environmental assessment under CEQA would be conducted. The construction of new fire facilities could also be carried out by fire-related districts on land Planned and Zoned in a manner that does not require a County land use approval. In such instances, the fire-related district would be required to seek General Plan conformance review by the County pursuant to Government Code Section 65402, and conduct its own project-specific environmental assessment. In either case, if the fire development 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. In particular, the General Plan encourages public agencies to plan facilities in areas with adequate road, pedestrian, and access to appropriate utility services.

The nature and location of any potential new or expanded fire facilities that could be constructed by the County or 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 in this first tier programmatic EIR. If potential new or expanded fire 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, or other findings made after certification of an EIR in accordance with CEQA.

If the new or expanded facilities 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, General Plan Update impacts relating to need for new or expanded fire facilities triggered by the General Plan would be **less than significant**.

Mitigation

None required.

Impact 3.4.3.3. Law Enforcement

The proposed General Plan Update would have a significant impact if it would result in the need for new or physically altered law enforcement facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection.

This impact analysis addresses item "a" above, with respect to law enforcement facilities, of the significance criteria described in 3.4.2. Based on Appendix G of the CEQA Guidelines,

- a) result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: law enforcement.

Projected population growth in Humboldt County during the planning period will require increasing the number of Sheriff's deputies and expanding Sheriff's office facilities, if existing levels of service are to be maintained. Major obstacles in maintaining existing levels of services are increasing operational and facility costs, which diminish local government's ability to meet these costs due to revenue constraints and competing budget priorities.

As part of the analysis for the Community Infrastructure and Services Technical Report, the Sheriff's office provided feedback regarding their existing personnel and facility levels and future needs, based on population projections available at that time. The Sheriff's office estimates that an additional 50 deputies will be required by 2027. This planning occurred in 2007, and 2027 represented a 20-year planning horizon at that time. This information is the best available information regarding future Sheriff's office staffing, and the year 2027 appropriately represents the 2028 projected population peak.

The following tables shows the number of existing sworn officers operating out of each patrol substation and the projected increase necessary to maintain an adequate level of service.

Table 3.4-5. Sheriff's Office Operations Staff - 2016 and Projected (2027).

| Sub-Station Location | Sworn Staff | | Percentage Increase (2007 to 2027) |
|-------------------------|-------------|----------------|---------------------------------------|
| | 2016 | Projected 2027 | |
| Eureka | 58 | 88 | 52% |
| McKinleyville | 12 | 24 | 100% |
| Hoopa | 8 | 16 | 100% |
| Garberville | 8 | 16 | 100% |
| Resident Posts | 4 | 6 | 50% |
| Total | 90 | 150 | 67% |

Source: Community Infrastructure and Services Technical Report, 2008.

In addition to personnel needs, the Sheriff's Office evaluated its current and future facility needs. The following is a listing of proposed improvements to the Sheriff's Office facilities and equipment:

Short-term Projects (5-10 years):

- Develop an enhanced communication system.
- Relocate Emergency Services and Emergency Communications Divisions
- Pursue other service and facility upgrades and expansions as needed.

Long-term Projects (10-20 years):

- Move or expand Main Office and other facilities (North Area Command and Garberville stations).
- Develop a dedicated training facility (could regionalize with partner agencies).
- Pursue technology updates and other services

The implementation of the General Plan Update would contribute to the need for the expansion of the main office and the North Area Command station and Garberville stations, other facility upgrades and expansions as needed, the development of a dedicated training facility, and the development of an enhanced communication system would be construction projects. These projects could result in potentially significant effects on the environment related to air quality and noise during construction, traffic, aesthetics and other impacts.

Analysis of Relevant General Plan Update Policies

The General Plan Update contains a series of policies that direct the County to monitor service capacity in relation to planned development, and encourage the establishment of funding mechanisms to support services and provide the community service and infrastructure needed to serve the development allowable under the Plan. The General Plan Update Community Infrastructure and Services Element includes a number of policies to ensure that adequate utilities and services are available for the proposed development and that the development contributes adequate funding to support the increased public service needs, including law enforcement services.

Policy IS-P1, Coordination with Service Providers, directs the County to work cooperatively with service providers, including the County Sheriff, to identify needs, secure funding, and implement infrastructure and public service projects consistent with this Plan. Policy IS-P4, Requirements for Discretionary Development, specifies that the adequacy of service, such as law enforcement, to support new development shall be evaluated against standards and the development may not be approved unless such services are in place or there is a program to ensure that they will be in place. Policy IS-P17, Law Enforcement, would require the County to monitor law enforcement needs and coverage.

The Sheriff's Office has identified the need for future expansions to the North Area Command station and Garberville and stations, as well as other undefined improvements to maintain its level of service as development consistent with the General Plan Update occurs. The following is a summary of General Plan Update policies that would reduce construction related environmental impacts from new or expanded law enforcement 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 General Plan Update Community Infrastructure and Services Element includes policies to monitor law enforcement needs and coverage and to work with the Sheriff to secure funding sources to ensure that facilities are available as service demand increases as a result of future growth allowed under the General Plan Update,. Potential impacts resulting from the physical alterations and construction relating to the provision of law enforcement services required to accommodate future growth allowed under the General Plan Update, would be lessened by the implementation General Plan Update policies identified above. Therefore, impacts to law enforcement services resulting from the implementation of the General Plan Update would be **less than significant**.

Mitigation

None required.

3.5 Transportation

This section provides background information regarding the circulation system within the County including the multimodal use of roads; marine, rail, and air transportation; public transportation; non-motorized transportation; the regulations and programs relating thereto; and an assessment of the potential impacts resulting from implementing the proposed General Plan Update.

Existing transportation system conditions are described in the *Moving Goods and People Report, October 2002* (Appendix G), which includes existing conditions, planned improvements and policy options for transportation planning and Section 2, Road Infrastructure, of the *Community Infrastructure & Services Technical Report, July 2008* (Appendix Q). 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://co.humboldt.ca.us/gpu/documents/background.aspx>, 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 on for the environmental setting and analyses.

3.5.1 Transportation/Traffic -Environmental and Regulatory Setting

Modes of Transportation

Travel by Humboldt County residents is accomplished through a variety of transportation modes. These modes present mobility choices for County residents, employees, and visitors, depending on their destinations and reasons for their trips. Transportation mode choices offer different benefits and costs, such as travel time, effort, convenience, and expense.

The U.S. Census collects information as part of the American Community Survey regarding the modes of travel to work for employed persons over the age of 16. Nearly 83 percent of County residents commute to work in cars, either alone or as part of car pools. Most people not commuting in cars either walk to work or work at home. A notable percentage of commuters who live in the County's incorporated cities walk to work: Arcata (18 percent), Ferndale (15.2 percent), Eureka (7.9 percent), as compared to the County on the whole (6.5 percent). This is primarily due to the proximity of employment opportunities to residential areas. Very few commuters living in unincorporated communities walk to work, with the exception of Redway – Garberville and Westhaven-Moonstone, where 10.3 percent and 5.5 percent, respectively, walk rather than drive. The following table summarizes the mode choices found in Humboldt County as a whole and in the various communities around the County in the year 2010-2014.

Table 3.5-1. Modes of Transportation.

| Census Designated Place | Car – (Alone) | Carpool | Public Transit | Bicycle | Walk | Other | Work at Home |
|--------------------------------------|---------------|---------|----------------|---------|------|-------|--------------|
| Humboldt County (countywide average) | 73.5 | 9.3 | 1.2 | 1.7 | 6.5 | 1.2 | 6.6 |
| <i>Incorporated Cities</i> | | | | | | | |
| Arcata | 60.5 | 8.5 | 1.8 | 6.2 | 17.8 | 0.8 | 4.5 |
| Blue Lake | 73.6 | 4.4 | 0.0 | 1.0 | 9.8 | 1.6 | 9.6 |
| Eureka | 71.9 | 9.9 | 2.3 | 2.3 | 7.9 | 2.0 | 3.7 |
| Ferndale | 67.4 | 4.6 | 0.0 | 0.4 | 15.2 | 2.2 | 10.6 |
| Fortuna | 71.5 | 13.2 | 2.1 | 1.4 | 6.5 | 1.1 | 4.2 |
| Rio Dell | 86.7 | 7.8 | 0.0 | 0.0 | 1.0 | 0.0 | 4.5 |
| Trinidad | 48.1 | 6.0 | 0.0 | 0.0 | 9.0 | 0.0 | 36.8 |
| <i>Unincorporated Communities</i> | | | | | | | |
| Cutten | 77.1 | 10.9 | 0.0 | 1.7 | 2.0 | 3.5 | 5.0 |
| Humboldt Hill | 80.6 | 11.6 | 0.1 | 0.0 | 3.4 | 4.1 | 0.1 |
| Hydesville | 94.9 | 2.9 | 0.0 | 0.0 | 0.0 | 0.0 | 2.2 |
| McKinleyville | 82.2 | 9.6 | 0.9 | 0.7 | 1.5 | 0.2 | 5.0 |
| Myrtle town | 82.5 | 8.2 | 0.1 | 0.3 | 2.3 | 0.0 | 6.6 |
| Pine Hills | 77.6 | 8.6 | 0.9 | 2.0 | 0.0 | 2.5 | 8.4 |
| Redway – Garberville | 69.0 | 3.1 | 0.0 | 0.0 | 10.3 | 0.0 | 17.4 |
| Westhaven-Moonstone | 80.0 | 6.7 | 3.0 | 0.0 | 5.5 | 0.0 | 4.8 |
| Willow Creek | 68.4 | 12.8 | 1.6 | 0.0 | 3.0 | 0.0 | 14.2 |
| <i>American Indian Reservations</i> | | | | | | | |
| Big Lagoon Rancheria | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Blue Lake Rancheria | 20.5 | 0.0 | 0.0 | 0.0 | 79.5 | 0.0 | 0.0 |
| Hoopa Valley Reservation | 83.8 | 8.6 | 0.0 | 0.0 | 1.4 | 0.0 | 6.2 |
| Karuk Reservation | 68.6 | 19.6 | 0.0 | 0.0 | 7.8 | 0.0 | 3.9 |
| Table Bluff Reservation | 64.3 | 7.1 | 0.0 | 0.0 | 28.6 | 0.0 | 0.0 |
| Yurok Reservation | 64.3 | 16.1 | 0.0 | 0.0 | 5.5 | 1.7 | 12.5 |

Source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year

Humboldt County Roadway System

Humboldt County contains approximately 1,400 miles of County and city roads, state highways, and roadways on federal lands (see the General Plan Update Map Book Circulation Maps for an indication of the location of major roadways in Humboldt County.) Issues affecting the County road system include: roadway safety, capacity, and condition. Roadway condition and maintenance is a challenge for rural areas like Humboldt County, where lower population densities and long travel distances mean that limited road maintenance funds are spread across an extensive network of roads. Roadway capacity is generally less of an issue for rural areas due to the lower population densities. However, some roadways in urbanized portions of

the unincorporated area (such as Eureka and McKinleyville) are subject to existing and projected areas of congestion.

The Community Infrastructure and Services Technical Report and Moving Goods and People Report include information regarding the capacity of the current and future County roadway system, including maps of Average Daily Trips and Level of Services for roadway segments. Level of Service (LOS) is a standard system for measuring the flow of traffic on a roadway, called roadway capacity, and uses a scale from LOS A (free flow of traffic) to LOS F (extreme congestion and delay). The level of service for roadway segments can also be referred to as the volume to capacity ratio and is calculated by dividing the volume of traffic that passes through a segment of road over a specific period of time by the design capacity of that roadway segment.

The County's roadway network is comprised of a hierarchy of roads with different classifications and characteristics. Functional classification is the process by which streets and highways are grouped according to the character of service they are intended to provide. Basic to this process is the recognition that individual roads and streets do not serve travel independently in any major way. Rather, most travel involves movement through a network of roads.

The hierarchy of roadways in Humboldt County follows the Federal Highway Administration Functional Classification Guidelines including arterials, collectors, and local roads. The functional classification system also provides for separate classification of urban and rural functional systems

The Humboldt County roadway system is dominated by U.S. 101, which runs north-south, through or adjacent to five of the County's seven cities. The following is a general description of major roadway facilities within the County:

State Highways/Routes. The following is a description of the state highways and state routes in Humboldt County.

The Caltrans Transportation Concept Report (TCR) for U.S. 101 states that it "is the economic lifeline of the north coast and the most important route in the (Caltrans) District. It is a principal arterial serving interregional and interstate traffic, with relatively high traffic volumes and heavy use by both truck and tourist traffic." This roadway varies between one and two lanes in each direction for most of its length with some three-lane passing sections. There are three-lane one-way couplets in Eureka, and U.S. 101 serves as the main street for the City of Eureka and for the community of Orick, and other portions operate as a freeway. U.S. 101 is also the principal commute route to Eureka and Arcata from the north and south. The Caltrans TCR indicates that U.S. 101 operates at level of service "C" or better within Humboldt County, except for the section through Eureka (Broadway/4th and 5th Streets) where "signalized intersections control level of service, and some intersections within the segment experience unstable flow at peak hour."

State Route (S.R.) 299 is the County's main east-west corridor connecting the Humboldt Bay area to Willow Creek and Trinity County, and eventually to Redding and Interstate 5 (I-5). S.R. 299 is a four-lane freeway between Arcata and Blue Lake and becomes a two-lane highway with alternating passing lanes between Blue Lake and the County line. S.R. 299 serves as the main street through Willow Creek and includes a traffic calming project. Caltrans reports that this facility operates at level of service "C" or better through Humboldt County (Route Concept Report, 299 Corridor, Caltrans, January 1998)

Other State Routes include:

- S.R. 36 is a two- and one-lane highway that extends from U.S. 101, south of Fortuna to Trinity County following the Van Duzen, Mad and Trinity River valleys and eventually connects with I-5 in Red Bluff.
- S.R. 96 is a two-lane highway that extends north/south along the eastern edge of the County from Willow Creek to Orleans and eventually connects with I-5 in Siskiyou County
- S.R. 169 is a one-lane highway that extends northwest from S.R. 96 at Weitchpec along the Klamath River to Wautec (Johnsons).
- S.R. 200 is a two-lane highway (also known as North Bank Road) that connects U.S. 101 south of McKinleyville to S.R. 299 east of Arcata and provides a bypass for trucks that are too tall to cross the Mad River Bridge.
- S.R. 211 is a short two-lane highway that extends from U.S. 101 to the City of Ferndale, crossing the Eel River over historic Fernbridge.
- S.R. 253, also known as Avenue of the Giants, is a two-lane highway that parallels U.S. 101 from approximately five miles north of Redway to approximately three miles south of Stafford. This route provides a scenic bypass to U.S. 101 and provides access to several unincorporated communities and state parks.
- S.R. 255 is a two-lane highway, with a four-lane segment in Arcata, that extends from Arcata to Eureka through Manila and also serves as an alternate to U.S. 101.
- S.R. 283 is the shortest State Highway in the State of California, consisting of a two-lane highway across the historic Eagle Prairie Bridge that connects Rio Dell and the unincorporated community of Scotia.

Major County Roads. County roads provide access to urban and rural communities from state highways, interconnect with city roads, and serve as main streets and local streets within unincorporated communities. The major County roads that carry significant amounts of daily traffic include (note - roadway functional classifications are identified in parenthesis after the road name):

- Central Avenue (Urban Minor Arterial) in McKinleyville
- Old Arcata Road (Rural Major Collector)/Myrtle Avenue (Rural Major Collector and Urban Minor Arterial) - serves as an alternate to U.S. 101 between Arcata and Eureka
- Walnut Drive (Rural Major Collector, Urban Collector, and Urban Minor Arterial)/Ridgewood Drive (Rural Major Collector) in the Cutten and Ridgewood areas
- Herrick Avenue /Fairway Drive/F Street (Urban Minor Arterial) - serve as an alternate to U.S. 101 to downtown Eureka and the Henderson Center and Myrtle town areas for commute traffic from the south
- Murray Road (Rural Major Collector and Urban Minor Arterial) in McKinleyville
- School Road (Urban Minor Arterial) in McKinleyville
- Harris Street (Urban Minor Arterial) - a major east-west route through the City of Eureka
- Harrison Street (Urban Minor Arterial) - serves as the eastern boundary of the City of Eureka and provides access to the County's major medical center

Numerous County roads operate like highways in the County's rural areas, such as:

- The Mattole Road (Rural Major Collector) - provides access to the Petrolia and Honeydew areas from Ferndale and Weott
- Briceland-Thorne Road (Rural Major Collector) - extends from Redway to Thorne Junction where it intersects with the Shelter Cove Road; these two roads provide access to the southwestern portion of the County
- The Alderpoint Road (Rural Major Collector) - extends from Garberville in the south to Bridgeville and serves the communities of Alderpoint and Blocksburg as well as other areas along the Middle Fork of the Eel River and the south-eastern County

In addition, Humboldt County has identified the following roads as Regionally Significant Streets and Roadways as part of the 2008 Regional Transportation Plan (see Humboldt County Regional Transportation Plan, 2008, Table HR1, Significant Roadway and the discussion on Page HR-1):

- Bald Hills Road (Rural Major Collector) - connects U.S. 101 to S.R. 169 through Redwood National Park and the Yurok Reservation
- Bair Road (Rural Minor Collector) - extends from S.R. 299 near Lord Ellis Summit, through Redwood Creek, to S.R. 96 in Hoopa
- Blue Lake Boulevard (Rural Major Collector)/Glendale Drive (Rural Major Collector) - extends from the City of Blue Lake to the community of Glendale;
- Blue Slide Road (Rural Major Collector)/Grizzly Bluff Road (Rural Major Collector) - extends from the City of Rio Dell to the City of Ferndale
- Campton Road (Urban Minor Arterial) - connects H Street in the City of Eureka to Walnut Drive
- Elk River Road (Rural Major Collector) - connects Herrick to Ridgewood Drive and serves the Elk River Valley
- Fieldbrook Road (Rural Major Collector) - connects S.R. 299 through the community of Fieldbrook to Murray Road, which connects to U.S. 101 in McKinleyville
- Freshwater (Rural Major Collector)/Kneeland Road (Rural Major Collector) - connects the communities of Freshwater and Kneeland to Myrtle Avenue as well as to Butler Valley Road which eventually connects to the City of Blue Lake via Maple Creek Road
- Maple Creek Road (Rural Major Collector) - see Freshwater/Kneeland Road above
- Humboldt Hill Road (Rural Minor Collector) - extends from U.S. 101 to the Humboldt Hill community
- Redwood Drive (Rural Major Collector) - U.S. 101 and extends from downtown Garberville through Redway and connects to U.S. 101 at Dean Creek
- Rohnerville Road (Rural Major Collector) - located mostly within the City of Fortuna, extends to S.R. 36
- Sprowel Creek Road (Rural Major Collector) - extends south from Garberville, past the Garberville County airport towards the Mendocino County line
- Wilder Ridge Road (Rural Minor Collector)/Ettersburg Road (Rural Minor Collector) - connects Mattole Road to Shelter Cove Road
- New Navy Base Road (Rural Major Collector) - extends south to the end of the Samoa Peninsula from S.R. 255

Roadway System Condition and Capacity. Roadway maintenance is a key challenge for rural areas such as Humboldt County. Lower population densities and long travel distances result in fewer funds available on a per-mile basis for roadway maintenance. Maintenance problems are even more challenging in an area, such as Humboldt, which is dependent on logging and heavy commercial truck traffic to sustain its economy. Heavy truck traffic and wet weather comprise the two most critical factors in pavement deterioration. Humboldt County experiences significant winter rainfall. In the 1960's, the American Association of Highway and Transportation Officials (AASHTO) found that damage to pavement from one truck is roughly equal to that of 10,000 cars.

Critical issues for the rural road system are safety and road rehabilitation. Roadway capacity (i.e. the number of lanes) is not generally an issue for rural areas, due to the lower population densities. There are areas of the County where capacity has become an issue due to increased tourist travel, increased truck travel, and increased development. Also, rugged topography often justifies truck climbing lanes, but funding for such improvements is limited and competes with funding for roadway maintenance.

In addition, the County lacks an infrastructure financing mechanism that would require all development to pay for its "fair-share" of off-site impacts to road infrastructure (as well as other infrastructure and public service needs). Currently, a traffic impact fee is being considered for the Greater Eureka Area by the County and the City of Eureka. The difficulty of recovering the costs of public road improvements and maintenance due to new construction is exacerbated by lower density rural residential development. This development typically occurs in a scattered pattern, requiring a more extensive road system than more compact development. The lower densities also make it more difficult to implement programs such as public transportation, which can also serve to lessen auto trips. Financing roadway improvements through Mello-Roos or other methods is not feasible due to a low rate of growth.

The Humboldt County roadways with the most significant capacity constraints are located in the Eureka and McKinleyville areas. Both of these areas have been experiencing increased development pressures, which have added vehicles to existing capacity constrained County roadways.

The circulation network for the unincorporated areas surrounding Eureka, including Cutten and Myrtle town, is inter-connected with the City of Eureka. The Eureka Community Plan area is largely dominated by residential land uses, with residents traveling into or through the City of Eureka for work, shopping, and other purposes. The development around the City of Eureka and regional commercial areas within the City, such as the Bayshore Mall, have contributed to increasing congestion and delays along Broadway, leading travelers and commuter to divert their trips to other routes as they travel through the City.

A traffic impact analysis was prepared for the General Plan Update by TJKM Transportation Consultants (Appendix H). As recommended by TJKM, the analysis utilizes level of service calculations based on daily traffic volumes rather than peak hour traffic volumes.

Public Transportation

The Humboldt Transit Authority was established in 1975 through a joint powers agreement (JPA) between the cities of Rio Dell, Fortuna, Eureka, Arcata and Trinidad and the County of Humboldt to provide public transportation services along the U.S. 101 corridor throughout the County. Funding for HTA is available from Transportation Development Act (TDA) funds and passenger fares. Of the TDA funding, Humboldt County contributes 50% and the JPA cities contribute the other 50%. HTA operates and maintains the Redwood Transit System (RTS) and the Eureka Transit Service (ETS). In addition, HTA provides maintenance service to the Arcata & Mad River Transit System (A&MRTS) through a contract.

Redwood Transit System. The Redwood Transit System (RTS) consists of "mainline" commuter service along the U.S. 101 corridor from Scotia to Trinidad. Regular commute service is available to McKinleyville, as well as regional service to the California Redwood Coast – Humboldt County Airport. Although some trips serve the entire corridor, most trips provide service only along shorter sections of the route. Service was recently added to southern Humboldt, now connecting Garberville, Redway, Phillipsville, Miranda, Myers Flat, and Weott with the Humboldt Bay area. In addition to the mainline route serving U.S. 101, a separate route provides service between Willow Creek and various locations in Arcata and McKinleyville.

Eureka Transit Service. The Eureka Transit Service (ETS) has four fixed-routes within the city of Eureka, as well as the unincorporated communities of Bayview, Cutten, and Myrtle town.

Arcata & Mad River Transit System (A&MRTS). The Arcata & Mad River Transit System provides fixed-route service within the city of Arcata.

Blue Lake Rancheria Transit System. The Blue Lake Rancheria Transit System provides hourly service between Blue Lake and Arcata via S.R. 299, and includes service to the unincorporated community of Glendale.

Klamath-Trinity Non-Emergency Transportation (K/T Net). K/T Net provides fixed and flex route service between Willow Creek and Hoopa, Monday through Friday. K-T NeT provides two fixed-route services between Willow Creek and areas north along Highways 96 and 169, including Hoopa Valley, Weitchpec (since August 2008), and Pecwan/Wautec and Orleans (since early 2009). K-T NeT schedules the Hoopa-Willow Creek service to connect with the Willow Creek Transit System bus (for trips to the Humboldt Bay Area), and with Trinity Transit (for trips further east to Redding).

Greyhound Lines, Inc. Greyhound provides intercity bus service to Humboldt County with connections along the U.S. 101 corridor to various cities. Greyhound currently provides twice-daily services with stops at Arcata, Eureka, Rio Dell and Garberville.

Amtrak Thruway Motorcoach. Amtrak Thruway Motorcoach consists of buses to connect Amtrak train stations to areas not served by Amtrak railroads. The Amtrak Thruway bus route runs from McKinleyville to the Martinez Train Station, where passengers can board a connecting train to Emeryville and then a shuttle bus to San Francisco. Amtrak buses run seven days a week.

Non-Motorized Transportation

Bicyclists, pedestrians, and equestrian riders each have unique needs for public facilities that support these modes of transportation for trips that might otherwise be accomplished using a car, and for recreation. Bicycle facilities include: Class I Bikeways (bike path), is a completely separated right of way for the exclusive use of bicycles and pedestrians with crossflow by motorists minimized; Class II Bikeway (Bike Lane), which provides a striped lane for one-way bike travel on a street or highway; and Class III Bikeway (Bike Route) that provides for shared use with pedestrian or motor vehicle traffic (Caltrans Highway Design Manual, Chapter 1000, Bicycle Transportation Design, <http://www.dot.ca.gov/hq/oppd/hdm/pdf/english/chp1000.pdf>). Most dedicated bicycle facilities are in the urban areas of the County and many of the bike lanes and routes in the region do not meet current state standards. However, programs are underway to improve the bicycle network.

Pedestrian facilities, primarily sidewalks and crosswalks, are also most commonly provided in the urban areas. Most pedestrian facilities were constructed prior to the American with Disabilities Act (ADA) and are therefore not compliant. Compliance issues include inadequate sidewalk width, excessive cross-slope, inadequate curb ramps at intersections, and obstacles in the sidewalk. Such obstructions and impediments can force pedestrians on foot or who use wheelchairs onto road shoulders, and into parking and bike lanes. Over time, the County Department of Public Works is upgrading pedestrian facilities to be ADA compliant.

Rural areas and small communities do not often have pedestrian facilities that are separated from the roadway. Pedestrians and bicyclists frequently utilize roads in Humboldt County that lack sidewalks and/or bicycle lanes. As a result, sharing of roadways by pedestrians, car and truck drivers, bicyclists, and even equestrians, is common in many rural areas. While equine use does not constitute a significant portion of daily commuter travel in Humboldt County, equestrian trails can be a significant recreational resource. A number of community and public

land trail systems provide transportation and recreation opportunities; however, most of the facilities dedicated exclusively for non-motorized use are provided only in urban areas of the County.

Pedestrian facilities are most commonly found in the County's seven cities and larger unincorporated communities. Sidewalks and pathways of varying width are found in commercial areas, residential neighborhoods, and near schools. In many cases, existing sidewalks meet only the minimum ADA standards and often are obstructed by utility poles, signposts, and other obstacles. There are also sidewalk gaps, uncontrolled intersections, and street crossings that pose pedestrian travel impediments, especially to the mobility-impaired. Most facilities dedicated for bicycle use are in the urban and suburban areas of the County, with bicycle lanes in place in Eureka, Arcata, McKinleyville and Fortuna. The City of Arcata provides the most interconnected system of bicycle lanes/routes that facilitates access to and from a number of trip-generating areas. In Eureka, the bike lane/route system includes both north-south and east-west lanes; however, not all trip generating areas are connected. Fortuna has limited systems of bike lanes and designated routes.

Some existing bicycle lanes/routes in the region do not meet current state standards. Caltrans increased bike lane width standards from four to five feet in 1997 (when not adjacent to a curb four feet is still permitted); consequently, many bike lanes constructed before 1997 do not meet the new state width standards. The most prominent Class I bike path (a separated surfaced right-of-way designated exclusively for non-motorized use) in Humboldt County is the Hammond Coastal Trail in McKinleyville, which provides opportunities for non-motorized travel for both transportation and recreation purposes. The Hammond Coastal Trail is Humboldt County's preeminent bicycle and pedestrian facility. The trail presently consists of a 2.4-mile hiking/biking/equestrian trail linking Arcata with McKinleyville from the Arcata Bottoms to Murray Road in McKinleyville, a hiking/equestrian loop north of Murray Road, and the newest sections from just north of Vista Point on Highway 101 to Strawberry Creek and the Widow White Creek crossing.

There is also the Mid-Town Trail in McKinleyville located between Railroad Avenue and Fernwood Drive, and a new trail is being constructed along Highway 101 leading from Arcata toward Eureka. There are a few other trails of significant length in or near communities that provide for both transportation and recreation. There are, however, a large number of recreational trails in city, county, state, and national parks, the National Forest, and Bureau of Land Management land. Cyclists are granted full access to all state route facilities in Caltrans District 1, which includes all of Humboldt County.

The Elk River Hikshari' Trail (is a multiple-use, paved trail that runs between Truesdale Avenue (just south of the Bayshore Mall) 1.5 miles south to the Pound Road Park & Ride lot, off the Herrick Avenue and Highway 101 interchange. Four parking areas and trailheads were enhanced at the following locations: Truesdale Vista Point, Hilfiker Lane (with primitive boat ramp), Hilfiker Lane at the Elk River Wildlife Sanctuary, and Pound Road Park & Ride.

Humboldt County is the lead agency in the Humboldt People Powered Pathways (HP3) funding proposal to the federal government. The HP3 proposal seeks transportation funding to implement local jurisdiction's plans for improving active transport systems and programs. The HP3 plan identifies approximately 25 active transport planning, implementation programs, and partnerships that identify \$50 non-motorized transportation projects located across the County.

Truck Transportation

Truck transportation is a major factor in business operations for most industries in Humboldt County. U.S. 101 and S.R. 299 are the County's main truck transportation corridors. A key concern for the County is the impact of heavy truckloads on deteriorating County roads. Annual maintenance costs associated with a sustained logging operation are \$9,000 per mile, according to the Moving Goods & People Technical Report (Appendix G).

Additionally, there is an economic effect on transportation costs due to the limitations on large STAA truck sizes on U.S. 101 at Richardson Grove. Because of the restrictions on the length of trucks that can travel this route into the County, goods often need to be transferred to smaller trucks, which increase the transportation cost of goods shipped to and from the County. State Route 299 from Arcata to Trinity County is considered a California Legal Network highway and allows STAA trucks.

Caltrans has completed a Final EIR (SCH # 2009012070) for a project to provide access for larger trucks on U.S. 101 through Richardson Grove State Park near the Humboldt County line. The proposed project extends from post mile (Humboldt) 1.1 to post mile (Humboldt) 2.2 and would include minor realignments and widening of the existing roadway, culvert improvements, and repaving the roadway. This project has been controversial because it involves road improvements and the removal of trees within a State Park as well as concerns regarding growth inducing impacts.

Air Transportation

Humboldt County is served by nine public airports: California Redwood Coast– Humboldt County Airport; Dinsmore Airport; Garberville Airport; Kneeland Airport; Murray Field; Rohnerville Airport; Samoa Field; Shelter Cove Airport; and the Hoopa Airport (see Table 3.5-3 below for additional information regarding these airports). All but the Samoa Field, Shelter Cove, and Hoopa Airports are owned and operated by Humboldt County. General background information regarding public airports in Humboldt County can be found in the Humboldt County Regional Transportation Plan, Chapter 7, Aviation System Element and the Airport Land Use Compatibility Plan (ALUCP) for Humboldt County Airports, March 1993 that was adopted in 1998.

Table 3.5-3. Airports in Humboldt County.

| Airport | Location | Based Aircraft | Annual Aircraft Operations | Owner/ Operator |
|---|---------------------------------|----------------|----------------------------|-----------------|
| California Redwood Coast– Humboldt County Airport | McKinleyville | 20 | 115 per day | Humboldt County |
| Dinsmore Airport | ¼ miles east of Dinsmore | 1 | 1,600 | Humboldt County |
| Garberville Airport | 1 mile southwest of Garberville | 20 | 16,500 | Humboldt County |
| Kneeland Airport | Kneeland | 0 | 7,000 | Humboldt County |
| Murray Field Airport | City of Eureka | 100 | 55,450 | Humboldt County |
| Rohnerville Airport | 0.8 miles south of Fortuna | 36 | 27,500 | Humboldt County |
| Samoa Field | Fairhaven | N/A | N/A | City of Eureka |

| Airport | Location | Based Aircraft | Annual Aircraft Operations | Owner/ Operator |
|----------------------|--------------|----------------|----------------------------|---|
| Shelter Cove Airport | Shelter Cove | N/A | N/A | Shelter Cove Resort Imp. District No. 1 |
| Hoopla Airport | Hoopla | N/A | N/A | Hoopla Valley Tribal Council |

Source: Humboldt County Airport Master Plans.

Air travel is a growing transportation option in Humboldt County with passenger enplanements at California Redwood Coast – Humboldt County, the only airport in the County with scheduled passenger flights, and passenger enplanements are expected to increase from 98,453 in 2014 to 167,000 in 2024 (Arcata-Eureka Airport Master Plan Report, Chapter 2 Airport Role and Activity Forecasts). Several daily flights are provided, connecting Humboldt County with San Francisco and Portland, Oregon. The airport continues to work to add more flights to more destinations.

The Board of Supervisors is the Humboldt County Airport Land Use Commission (ALUC) and approved the Airport Land Use Compatibility Plan (ALUCP) for Humboldt County Airports, March 1993 (adopted in 1998). The ALUCP sets forth the criteria and policies which the ALUC will use in assessing the compatibility between the public use airports and land use development in the areas surrounding them.

State law requires local agencies to modify their general plans and any affected specific plans to be consistent with airport land use compatibility plans (ALUCPs). A general plan must address compatibility planning issues and avoid direct conflicts with compatibility planning criteria. County zoning regulations limits density, height, and use within defined airport flight obstruction areas.

Marine Transportation

The Port of Humboldt Bay is a working port that can handle ocean-going vessels with domestic or international cargoes. The Port is the only deep-water shipping port between San Francisco, 225 nautical miles to the south, and Coos Bay, Oregon, 156 nautical miles to the north. The Port of Humboldt Bay is an important transportation facility for the shipment of goods and products to and from Humboldt County. The competitiveness of the Port is closely related to its ability to adapt to changes in the shipping industry, most notably the use of larger deep draft vessels.

The Port’s amenities include: the jetties at the Bay entrance, the bar and entrance channel, shipping channels within the Bay, turning basins, shoreline protection and improvements, docks and other landside improvements, and key waterfront sites used for coastal-dependent industry. Adjacent to the Humboldt Bay channels there are currently four operating terminals with the potential of serving ocean-going dry cargo vessels and one liquid bulk dock. Two of the eight cargo docks are located on the Eureka waterfront, four are located on the Samoa Peninsula, and two are located at Fields Landing.

The Humboldt Bay Harbor, Recreation and Conservation District (HBHRCD) District is a countywide agency that was established in 1970 to implement, supervise, and regulate the development of Humboldt Bay. The HBHRCD manages Humboldt Bay to promote commerce, navigation, fisheries, recreation, and the protection of natural resources. The HBHRCD also operates facilities in Shelter Cove. The HBHRCD has jurisdiction over port facilities and works with the U.S. Army Corps of Engineers to periodically dredge Humboldt Bay to maintain Bay access for various types of ocean-going vessels.

The HBHRCRD prepared the Humboldt Bay Management Plan in 2007. The purpose of the Humboldt Bay Management Plan is to serve as a management guide, planning tool, policy strategy, and reference document for the HBHRCRD and other parties interested in Humboldt Bay. The Humboldt Bay Management Plan provides a comprehensive discussion of existing conditions, including descriptions of the harbor and port, as well as recreation opportunities and conservation activities. The Humboldt Bay Management Plan also includes a policy document with water use designations similar to a land use plan, and policies regarding the harbor and recreation and conservation uses of the Bay.

In 2003, the HBHRCRD prepared the Port of Humboldt Bay Harbor Revitalization Plan that establishes a two-phase port strategy that involves channel deepening and landside improvement. After a 12-year effort, the Humboldt Bay Channel Deepening Project was completed in April 2000. The 48-foot deep Bar and Entrance Channels and 38-foot deep North Bay and Samoa Channels were intended to provide for greater navigation safety and improved vessel economics.

Annual maintenance dredging of Humboldt Bay is vital to maintaining safe and navigable access. Federal channels in Humboldt Bay are dredged by the U.S. Army Corps of Engineers. Any other area that requires dredging is the responsibility of local governments, in this area that is the Harbor District.

The U.S. Department of Transportation published a final rule in 2009 that established America's Marine Highway Program. Pursuant to this rule, marine highway corridors will be designated and funding made available to support short sea transportation projects in order to expand domestic water transportation services as an alternative means of moving containerized and wheeled freight cargoes. The objectives of America's Marine Highway Program are to mitigate the economic, environmental, and energy costs of landside congestion; integrate the marine highway into the transportation planning process; and research improvements in efficiencies and environmental sustainability. Humboldt Bay has been identified as a potential port within the marine highway system.

Rail Transportation

The North Coast Railroad Authority (NCRA), created by the State Legislature in 1989, has either full or partial ownership of the Northwestern Pacific Railroad (NWP). NCRA owns the railroad from Arcata to Healdsburg, and is a member of the Northwestern Pacific Railroad Authority JPA (joint powers authority) for the portion south of Healdsburg. The NCRA has a Lease and Operating Agreement with Northwestern Pacific Railway Company (NWPY), to provide common carrier freight operations and maintenance of the railroad.

Rail service to and within Humboldt County was suspended in 2001 due to the deteriorating condition of railway infrastructure. When operating, it provided freight service three times a week and occasional passenger service on weekends. Rail service provided an alternative to truck transportation, carrying mostly lumber products with the potential for transporting dairy products, fish products, aggregates, and coke and calcified lime used in paper processing. In order to return competitive rail service to Humboldt County, a substantial program of roadbed, track, bridge, tunnel, and station upgrading will be necessary. The future of the railway and the use of the railroad right of way, especially along Humboldt Bay, has been an important policy discussion within the region during the preparation of the General Plan Update.

Amtrak provides twice-daily bus service between Humboldt County and the Martinez train station in the San Francisco Bay Area. The bus follows the U.S. 101 corridor and provides service at McKinleyville, Arcata, Eureka, Fortuna, Scotia and Garberville.

Road Safety

Most County roads in rural areas are one- and two-lane roads of varying surface types that were constructed and improved over time and have evolved from trails, stage and rail routes, and logging roads. The alignment of many roads is irregular with varying horizontal and vertical curves and sight distances. Drivers are required to constantly adapt their speed to account for changing situations and circumstances that increase the opportunities for human error. In addition, street lights and intersection safety lighting are not present on most rural roads. Section 8, Streetlights, of the *Community Infrastructure and Services Technical Report* inventories street lighting standards and areas served by street lighting within the unincorporated area.

The operation of agricultural vehicles on roadways may also affect traffic on rural roadways in the unincorporated area. Agricultural activities are an important element of the local economy and agricultural vehicles operate regularly on County roadways. Agricultural vehicles are slow moving vehicles and considered incompatible with other motorists. Implementation of the proposed General Plan Update would increase the amount of traffic on roadways and could increase the potential for conflict with agricultural vehicles.

Another factor that can impact roadway safety is the incompatibility of some unincorporated area roadway and highway facilities with multi-modal transportation uses. Many existing roadways and intersections in the County do not contain pedestrian or bicycle facilities. Humboldt County Transportation-Disadvantaged Populations Report, 2006, (<http://www.naturalresourceservices.org/TDP.html>) found that Pedestrian and bicycle safety is generally poor in Humboldt County when compared to other rural counties. There are substantially higher bicycle injuries and fatality rates in Humboldt County than all other rural areas in California. Bicycle injury and fatality rates are also significantly higher than the state average, particularly for youth and the 05-24 age groups. In spite of this, bicycle and pedestrian injuries and fatalities are decreasing in Humboldt County.

The Transportation-Disadvantaged Populations Report further indicates that Humboldt County has a higher number of bicyclists than some other rural counties, and this fact may influence the absolute number of collisions. Two potential reasons for this include: the presence of both Humboldt State University and College of the Redwoods campuses within ten miles of each other in the Humboldt Bay region; and the Pacific Coast Bike Route on U.S. 101 attracts many touring cyclists every year. Until 2000, the City of Eureka still had many intersections without traffic signals, stop, or yield signs, which may have also contributed to a higher number of collisions.

The Humboldt County Public Works Department recently established the Humboldt County Rural Transportation & Access Partnership (RTAP) program to help rural communities overcome transportation challenges and improve access to goods, services, employment, education and/or recreation, as well as to increase safety and advance "complete streets" for all modes of transportation. The RTAP is a matching program available through Humboldt County Department of Public Works to help address unfunded transportation needs through community partnership. The types of projects eligible for the program could include street/road improvements, pedestrian and bicycle improvements, enhancement of sites in County jurisdiction for access to public or community transportation services.

3.5.2 Transportation/Traffic - 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 transportation/traffic if it would:

- a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
- b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.
- c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
- d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- e) Result in inadequate emergency access.
- f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

3.5.3 Transportation/Traffic - Impacts and Mitigation Measures

Traffic Model Description

The traffic impacts resulting from General Plan Update land uses were evaluated by TJKM Transportation Consultants using the latest Humboldt County Travel Demand Model. The Humboldt County Travel Demand Model was updated in 2013 by the Humboldt County Association of Governments (HCAOG) and the California Department of Transportation (Caltrans) to forecast travel patterns in both rural and urbanized portions of Humboldt County. The main purposes of the Humboldt County Travel Demand Model are to support the Regional transportation planning process¹, to evaluate potential improvements to the roadway system, and evaluate the impacts of land use changes in the County. The model also includes limited transit and non-motorized analysis capabilities. The base year for the model is 2010, with a forecast year of 2040.

The Humboldt County Travel Demand Model utilizes a traditional four-step modeling process, consisting of trip generation, trip distribution, mode split, and traffic assignment. This process addresses all person trips, occurring primarily by car but also includes trips made using transit and non-motorized modes (walk and bicycle). The updated model includes AM and PM peak periods and an off-peak period, which are combined to produce total daily traffic volumes. The entire process is automated and can be managed from a scenario management system within the TransCAD software platform.

A travel demand model is a computer program that simulates traffic levels and patterns for a specific geographic area. The program consists of input files that summarize population and

¹ A State-mandated effort involving each of the local jurisdictions and Caltrans in setting regional transportation goals and programs on a recurring basis.

employment characteristics, the street network, travel characteristics, and other key factors of the area analyzed. The Humboldt County Travel Demand Model contains information regarding the street network and land uses for the entire County, including the seven incorporated cities. Using this data, the model performs a series of calculations to determine the number of trips that would be generated, where the trips would begin and end, and the route for each trip. The model's output includes information such as peak AM, PM, and daily vehicle trips; average daily trips; daily vehicle trips and speed; volume to capacity ratio; and vehicle miles traveled. The volume to capacity ratio is a ratio of the number of vehicles that can be expected to travel over a given section of roadway during a given time period and the capacity of the segment. For purposes of this traffic analysis, the volume to capacity ratio is used to measure LOS.

2010 Scenario

The model roadway network contains basic input information for use in the Travel Demand Model and represents real-world conditions for the 2010 base year. The transportation analysis zones cover the entire County and each city and include existing and projected future population and employment levels. The model was successfully calibrated and validated by using the data and networks described in the "*Humboldt County Association of Governments Rural Regional Blueprint Planning Phase III, Travel Model Update Technical Documentation*" report. The traffic count data provided by Caltrans, Humboldt County, and other local jurisdictions, as well as additional traffic counts collected specifically for the purpose of supporting the model update, were used for validation. Due to differences in the way various agencies provide traffic data, some adjustments were made to the original data, which has been retained on the roadway network for reference. For model validation, traffic count data must represent a "typical weekday when school is in session." This condition allows model results to reflect volumes that would be consistent with traffic counts taken during this time period. Due to minimal growth during the last few years, all traffic count data was assumed to represent 2010 conditions for use in model validation.

2040 Scenario

This scenario represents the land use and policies contained in the GPU. Land use forecasts were updated to represent 2040 conditions. The land use information, depicted in Table 3.5-4b, General Plan Land Use Information – 2010 to 2040, represents a realistic view of 2040 conditions. In the table HH represents the number of households and EMP indicates the number of jobs.

2028 Scenario

The 2040 scenario represents the population and jobs projected for the ultimate planning horizon year of the County General Plan Update. However, the highest projected County population numbers will occur during an interim year (2028) according to the Department of Finance (DOF). In other words, the County's population is projected to peak in 2028 and decline thereafter. Consequently, an interim year (2028) scenario was developed using the 2028 population from the DOF and 2028 employment from Caltrans 2015 Economics Forecasts, and analyzed as a worse-case scenario. This is depicted in Table 3.5-4a.

Table 3.5-4a. General Plan Land Use Information – 2010 to 2028

| | 2010 | | 2028 | | Growth | |
|-----------------------|--------|--------|--------|--------|---------------|--------------|
| | HH | EMP | HH | EMP | HH | EMP |
| Unincorporated | 33,176 | 18,724 | 34,856 | 19,911 | 1,680 -- 5.0% | 1,187 – 6.3% |
| Cities | 22,855 | 29,478 | 24,012 | 31,199 | 1,157 – 5.0% | 1,722 – 5.8% |
| Model Total | 56,031 | 48,202 | 58,868 | 51,110 | 2,837 – 5.0% | 2,908 – 6.0% |

HH – Households EMP – Employment shown as number of jobs

Source: TJKM, 2017

Table 3.5-4b. General Plan Land Use Information – 2010 to 2040

| | 2010 | | 2040 Rev | | Growth | |
|-----------------------|--------|--------|----------|--------|--------------|---------------|
| | HH | EMP | HH | EMP | HH | EMP |
| Unincorporated | 33,176 | 18,724 | 34,085 | 21,164 | 909 – 2.7% | 2,440 – 13.0% |
| Cities | 22,855 | 29,478 | 23,482 | 33,018 | 627 – 2.7% | 3,540 – 12.0% |
| Model Total | 56,031 | 48,202 | 57,567 | 54,182 | 1,536 – 2.7% | 5,980 – 12.4% |

HH – Households

EMP – Employment shown as number of jobs

Source: TJKM, 2017

As shown, the forecast 18 year and 30-year growth in both households and employment is relatively modest. Household growth is 5% to 2028 and only 2.7% to 2040. Employment growth is 6% to 2028 and 12.4% to 2040. Land use and employment projections were based on information from the California Department of Finance (DOF) and Caltrans. The 2028 and 2040 household forecasts are from DOF; the assignments of housing between unincorporated and incorporated areas are based on current proportions. The employment growth is from Caltrans; assignment of housing between cities and unincorporated areas also retains the current proportions.

Vehicle Miles Traveled

Table 3.5-5 describes the traffic model evaluation of vehicle miles traveled (VMT) on the Humboldt County roadway network in 2010, 2028 and 2040, as well as a comparison between the two model years. The growth percentages for the two future years are indicated in the table.

Table 3.5-5. Comparison of 2010 and 2040 Vehicle Miles Traveled (VMT)

| Trip Origin | Trip Destination | 2010 VMT | 2040 Rev VMT | 2028 VMT |
|-------------------------------|-------------------------------|------------------|-------------------------------------|-------------------------------------|
| Inside Unincorporated County | Inside Unincorporated County | 1,070,071 | 1,097,038 | 1,116,701 |
| Inside Unincorporated County | Outside Unincorporated County | 851,484 | 929,479 | 935,833 |
| Outside Unincorporated County | Inside Unincorporated County | 888,993 | 969,080 | 976,290 |
| Outside Unincorporated County | Outside Unincorporated County | 731,135 | 807,070 | 819,932 |
| | Total | 3,541,683 | 3,802,668 (7.4%)¹ | 3,848,756 (8.7%)¹ |

¹ Growth in VMT from 2010

Source: TJKM, 2017

Circulation System Improvements

Table 3.5-6, General Plan Update Circulation System Improvements, provides a list of the proposed roadway improvements included in the General Plan Update. The McKinleyville and Eureka Circulation and Public Facilities Maps in the General Plan Update Draft Map Book show the location of the proposed improvements. These improvements are intended to enable the roadway system to accommodate the increased traffic demand generated by General Plan Update development without causing unacceptable traffic congestion. Improvement project numbers 26, 27, 30, 32, 33, 34, 39, 42 are also contained in RTP Table HR8, Long Term (11-20 years) Roadway Projects and are therefore consistent with the RTP. Most of these sections are not on

the traffic model network, so they do not have a major impact on the traffic forecasting efforts summarized in this document.

Table 3.5-6. General Plan Update Circulation System Improvements.

| No. | Proposed Road Improvements | Area | Length (feet) | Class | Maintenance Responsibility |
|-----|--|------|---------------|-----------------|----------------------------|
| 3 | McKinleyville Avenue South Ext. | MCPA | 784 | Urban Collector | County of Humboldt |
| 4 | Norton Road Extension | MCPA | 5,821 | Urban Collector | County of Humboldt |
| 7 | Underwood Road Extension | MCPA | 1,735 | Urban Collector | County of Humboldt |
| 8 | City Center Road Extension | MCPA | 607 | Urban Collector | County of Humboldt |
| 12 | Bird Avenue Extension | MCPA | 1,504 | Urban Collector | County of Humboldt |
| 13 | Montana Road Extension | MCPA | 330 | Local | Maintenance District |
| 14 | Berg Avenue Extension | MCPA | 810 | Local | Maintenance District |
| 15 | Windson Road Extension | MCPA | 977 | Local | Maintenance District |
| 17 | West Bates Road Extension | MCPA | 210 | Local | Maintenance District |
| 18 | Rita Avenue Extension | MCPA | 645 | Local | Maintenance District |
| 19 | Terrace Road Extension | MCPA | 569 | Local | Maintenance District |
| 20 | Pedroni Road Extension | MCPA | 1,534 | Local | Maintenance District |
| 21 | Walnut Avenue Extension | MCPA | 1,085 | Local | Maintenance District |
| 22 | Waters Avenue Extension | MCPA | 120 | Local | Maintenance District |
| 23 | Lime/A Avenue Extension | MCPA | 152 | Urban Collector | County of Humboldt |
| 25 | Pickett Road Extension | MCPA | 534 | Local | Maintenance District |
| 27 | Connection from Cypress to Harris at Girard | ECPA | 7,348 | Urban Collector | Maintenance District |
| 28 | Cypress Avenue Extension to new Connector 27/29 | ECPA | 529 | Local | Maintenance District |
| 30 | Fern Street Extension (Not on Circulation Diagram) | ECPA | 581 | Urban Collector | County of Humboldt |
| 31 | Connection from Northridge to Walnut at Pleasant | ECPA | 4,914 | Local | Maintenance District |
| 32 | Connection from Home to Fairway | ECPA | 10,124 | Urban Collector | County of Humboldt |
| 33 | Connection from Ridgewood at Eggert to Lundblade | ECPA | 9,828 | Urban Collector | County of Humboldt |

| No. | Proposed Road Improvements | Area | Length (feet) | Class | Maintenance Responsibility |
|-----|---|------------|---------------|-----------------|----------------------------|
| 34 | Connection from Connector 32 to Connector 33 | ECPA | 2,311 | Local | Maintenance District |
| 35 | Connection from Connector 33 to Elk River at Swain Slough | ECPA/ HBAP | 10,161 | Urban Collector | County of Humboldt |
| 36 | Hilma Drive Extension to Connector 33 | ECPA | 3,009 | Local | Maintenance District |
| 37 | Bassford Road Extension to Connector 33 | ECPA | 1,719 | Local | Maintenance District |
| 38 | Eggert Road Extension to Elk River Road | ECPA | 5,873 | Urban Collector | County of Humboldt |
| 39 | Connection from Loma at King Salmon Drive to London | ECPA/ HBAP | 2,699 | Urban Collector | County of Humboldt |
| 40 | Aspen Road Extension to Loma | HBAP | 1,361 | Urban Collector | County of Humboldt |
| 41 | Mesa Avenue Extension to Connector 39 | HBAP | 1,269 | Local | Maintenance District |
| 42 | Connection from Humboldt Hill to Tompkins Hill | ECPA/ HBAP | 5,975 | Urban Collector | County of Humboldt |
| 43 | Connection from Barry Property to Connector 42 | HBAP | 568 | Local | Maintenance District |

Source: Humboldt County Department of Public Works, 2016

Impacts

The traffic impact analysis examined only roadway segment LOS for the EIR. Although an assessment of intersection LOS is very useful in evaluating traffic operations, the traffic model is not configured to carry out this function and the information was not available for the entire modeling area to conduct this analysis. However, the roadway segment analysis is considered adequate for characterizing the transportation and circulation impacts of the General Plan Update.

Table 3.5-7 below identifies the road segments within the incorporated and unincorporated areas of the County that are projected to fall below LOS C as a result of cumulative growth within the County that is projected to occur between 2010 and 2040².

² As described in Chapter 2 – Project Description, the impacts considered in this RDEIR are those resulting from the increase in population projected by DOF and the increase in employment projected by Caltrans during the planning period (2016 -2040), which is a small fraction of the estimated maximum feasible development potential of the GPU, roughly four percent.

Table 3.5-7. 2010 LOS and Projected Roadway Segments Worse than LOS C in 2028 and 2040.

| Road | Segments | Location | Estimated 2010 ADT | 2010 LOS | Estimated 2028 ADT | Estimated 2040 ADT | Length (Miles) | 2028/2040 LOS |
|-------------|--|---------------|--------------------|----------|--------------------|--------------------|----------------|---------------|
| U.S. 101 | Between 6 th Street and S.R. 255 | Eureka/Arcata | 36,452 | D | 38,264 | 38,127 | 6.05 | D-E |
| U.S. 101 | Between 6 th Street and Herrick Avenue | Eureka | 32,135 | D | 32,851 | 32,201 | 3.03 | D |
| Main Street | Between 7 th Street and 13 th Street | Fortuna | 13,640 | D | 13,681 | 13,744 | 0.3 | D |
| Kenmar Road | Between U.S. 101 and Fortuna Blvd. | Fortuna | 15,756 | D | 16,563 | 16,257 | 0.2 | D |

Source: TJKM, 2017

Impact 3.5.3.1 – Increase in Vehicle Miles Traveled.

Implementation of the General Plan Update would generate levels of development that result in a greater number of vehicle trips and increased traffic volumes on roads within the County that could cause congestion.

This impact analysis addresses item “a” of the significance standards listed in Appendix G of the CEQA Guidelines as provided in Section 3.5.2 above. Pursuant to these criteria, the proposed County General Plan Update would have a significant impact if it would:

- a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

The Level of Service (LOS) for traffic is defined in the General Plan Update as the performance rating (“A” through “F”) for a segment of street or intersection, based on generalized perceptions of performance. Caltrans uses measures of effectiveness (MOEs) for gauging the level of service of State highway facilities and defines MOEs for each facility type (for instance freeway ramps or signalized intersection) in the “Guide for the Preparation of Traffic Impact Studies” December 2002 (http://www.dot.ca.gov/hq/tpp/offices/ocp/igr_ceqa_files/tisguide.pdf). Measures of Effectiveness include items such as passenger cars per lane mile per hour, seconds of delay, and average travel speed.

There are no adopted plans, ordinances or policies establishing measures of effectiveness for the performance of the circulation system in Humboldt County. The Eureka Community Plan contains a general goal that does not include an MOE: Policy 4220.1 “the County shall strive to maintain a Level of Service of C or better on arterials in the Planning Area.

The acceptable level of service goal will be consistent with the financial resources available and the limits of technical feasibility. Plans adopted by HCAOG do not contain required MOEs or LOSs.

Land use planning is critical to reducing vehicle trips and vehicle miles traveled. A report prepared by U.C. Davis for the California Air Resources Board (Land Use and Travel Behavior, Parts 1 and 2, University of California, Davis, 1994) found that local land use characteristics influence the amount of driving and travel by other modes, such as transit, bicycling, and walking. The neighborhood characteristics found to be most important were housing density, access to services, the availability of transit service, and the interconnection of travel routes. Residents in higher density, mixed-use areas were found to make more trips by transit, walking, and biking than those living in lower density areas.

Due to already established auto-oriented land use patterns, the private automobile would likely continue to be the dominant mode of transport in Humboldt County. The General Plan Update seeks to reduce vehicle miles traveled per person by providing balanced transportation opportunities, whereby the needs of motorized vehicles, public transit, bicyclists, and pedestrians are considered during land use and transportation planning.

Growth projected to occur during the General Plan Update planning period would generate levels of development that result in a greater number of vehicle trips and increased traffic volumes on roads within the County. The proposed General Plan Update, plus growth that would be allowed by each city general plan, would generate about 3,769,686 vehicle miles traveled per day (65 miles per dwelling unit per day) by the year 2040, up from approximately 3,541,683 vehicle miles traveled per day in 2010 (63 miles per dwelling unit per day). The cumulative traffic generated by both the County and the seven cities could cause congestion on some County or city roadways and would also affect air quality and greenhouse gas emissions. Air quality and greenhouse emission related impacts are evaluated in Section 3.12 Air Quality and Greenhouse Emissions.

Analysis of Relevant General Plan Update Policies

In general, the General Plan Update seeks to reduce vehicle trips and trip length by encouraging growth within existing communities, improving pedestrian and bicycle facilities and connectivity, and encouraging transit service expansion. The General Plan Update includes policies to reduce the length and frequency of vehicle trips by encouraging mixed use zoning; focusing planned residential uses within neighborhood and town centers, thereby locating residential development in proximity to transportation and work; ensuring neighborhood connectivity; and providing incentives for housing and infrastructure development in housing opportunity zones located within urban development areas.

Circulation Element Policy C-P1, Circulation System, encourages a road system that supports a pattern of growth with more intense development near collectors and arterials, and that provides connectivity between neighborhoods and destinations. Policy C-P2, Consideration of Land Uses in Transportation Decision Making, notes that a comprehensive planning approach be utilized that considers the transportation consequences of land use changes to avoid operational and economic impacts.

Policy C-P4, Mitigation Measures, requires that conditions of approval be imposed on new development to address proportional potentially significant transportation impacts. Policy C-P4 would relate only to discretionary development that would trigger CEQA review and not to ministerial projects. Policy C-Pxx, Long Term Transit Plan, directs the County to support the

development of a long term transit plan with the goal of increasing the percentage of public transit trips compared to automobile trips.

Table 3.5-7 lists only one road in the City of Eureka, that would be affected by the implementation of General Plan Update, and countywide growth expected to occur during planning period, that is the responsibility of Caltrans. Humboldt County cannot implement mitigation measures for projects that are not under its jurisdiction or guarantee their success. As a result, the General Plan Update contains policies that involve inter-jurisdictional coordination. Community Infrastructure and Services Element Policy IS-P7, Mitigation of Cross-jurisdictional Impacts, directs the County to work with cities to mitigate impacts associated with new development for each affect jurisdiction. Policy C-P5, Level of Service Criteria, requires that the County shall strive to maintain level of service "C" on all roads and intersections except U.S. 101, where level of service D is acceptable, and advises that the County should not adversely affect Level of Service and/or Quality of Service for other modes of transportation, if possible. This policy compliments policies contained in the City of Eureka General Plan. Policy C-P6, Jurisdictional Coordination and Integration, furthers the level of service standard consistency between the County and the City of Eureka by using HCAOG, memorandums of understanding, and informal project level cooperation to integrate countywide transportation planning and implementation measures. Policy C-P7, Joint Use of Traffic Models, encourages the County-Wide Transportation Plan (CWTP) and projects with potentially significant transportation impacts to use area-wide travel demand models.

Conclusion

Given that there are no applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, increased vehicles miles traveled is used as a measure of congestion for purposes of this analysis. As noted above, the growth anticipated under the General Plan Update would increase the absolute number of vehicle miles traveled within the County as well as the vehicle miles traveled per dwelling unit. This could result in a potentially significant effect on roadway operation and maintenance.

Mitigation

Mitigation 3.5.3.1.a. The following policies shall be added to the Circulation Element and would require the implementation of transportation demand management programs with new larger scale development in the unincorporated area.

C-P3. Consideration of Transportation Impacts in Land Use Decision Making. *Decisions to change or expand the land use of a particular area shall include an analysis of the impacts to existing and proposed transportation facilities and services so as to minimize or avoid significant operational, environmental, economic, and health-related consequences.*

C-Px9. Regional Transportation Demand Management Funding. *Encourage HCAOG to seek funding to support transportation demand management planning and to promote strategies that can lower the demands made on the road and highway system, reduce energy consumption, and improve air quality.*

C-Px10. Transportation Demand Management Programs. Require residential subdivisions and multifamily development that would result in fifteen or more dwelling units, and non-residential development that would employ greater than ten persons,

and that require a discretionary permit, to comply with County transportation demand management programs.

***C-IMX6. Transportation Demand Management.** Amend the Zoning Regulations to include criteria for the development and implementation of transportation demand management programs as required by this Plan.*

Level of Significance after Mitigation

Although the General Plan Update seeks to reduce vehicle miles traveled per capita, total vehicle miles traveled are projected to increase into the future. Adoption and implementation of the additional policies and implementation measures described in the above Mitigation Measure may help reduce VMT per person. Given the political and economic difficulties of actually implementing these programs, achieving reducing VMT per person from 2010 levels is unlikely; therefore, this would be a **significant unavoidable impact**.

Impact 3.5.3.2 – Unacceptable LOS on Roadways within the County.

Implementation of the General Plan Update would generate levels of development that result in increased traffic volumes on roads within the County that could cause existing levels of service to fall below LOS C as a result of cumulative growth within the County that is projected to occur between 2010 and 2040.

This impact analysis addresses item “b” of the significance standards listed in Appendix G of the CEQA Guidelines as provided in Section 3.5.2 above. Pursuant to these criteria, the proposed County General Plan Update would have a significant impact if it would:

- b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

Impacts 3.5.3.2-1 through 3.5.3.2-4 analyze the four roadway segments that would be expected to degrade to below LOS “C” (see Table 3.5-7,).

The following road segments: U.S. 101 between 6th Street and S.R. 255; U.S. 101 in Eureka between 6th Street and Herrick Avenue; Main Street Fortuna, between 7th Street and 13th Street; and Kenmar Road in Fortuna, between U.S. 101 and Fortuna Blvd are projected to fall below level of service “C” due to cumulative growth during the General Plan Update planning period. Each of these segments is described in greater detail below and specific mitigations are proposed to reduce impacts. The following more general mitigations are proposed to limit undesirable transportation impacts and, in combination with specific mitigations listed below, would reduce impacts relating to these four roadway segments.

Mitigation

To help reduce impacts of the General Plan Update on Levels of Service on county roads, the following mitigation measures are necessary.

Mitigation Measure 3.5.3.2.a. Amend existing policies and add the following implementation measure to the Circulation Element that establishes a multi-faceted program to lessen impacts relating to traffic congestion:

***C-IMX7. Congestion Relief Planning and Implementation Program.** The County shall utilize the best available traffic information, including the Humboldt County Travel Demand Model, other models and plans, and transportation impact analyses to identify roads that are currently capacity constrained or projected to become capacity constrained at some point as a result of General Plan implementation, and shall work cooperatively with HCAOG, Caltrans, applicable cities, HTA, or other agencies to implement a coordinated traffic management strategy to plan and prioritize transportation demand measures and roadway improvements to reduce roadway congestion along such roadways.*

The County shall use state and federal transportation improvement funds available directly to the County or through HCAOG, other grant funds, project related exactions, other available County funds, and impact fees to fund congestion relief improvements.

The following steps shall be taken to address specific capacity limitations:

- A. *Monitor vehicle trips and other modes of travel at regular intervals.*
- B. *Solicit public involvement in transportation improvement planning prior to implementing any improvements.*
- C. *Identify transportation demand management measures that could be applied to the areas served by the specific roadway(s) to reduce peak-hour vehicle trips and congestion, such as:*
 1. *Coordinate with school districts to expand school bus operations, create a "walking school bus" program, create programs for shared rides to school, or other programs to reduce school-related vehicle trips;*
 2. *Coordinate with transit providers to identify strategies to improve and expand bus service and encourage ridership;*
 3. *Coordinate with businesses served by the roadway(s) and encourage the use of appropriate transportation demand measures to reduce employee-related vehicle trips;*
 4. *Identify bicycle and pedestrian enhancements that improve the ability of motorists to shift short trips to non-motorized modes.*
- D. *Use the following roadway and intersection improvements, as appropriate, in combination with "E" below, to accommodate additional traffic volumes while providing a safe multi-modal circulation system:*
 1. *Public education*
 2. *Signage*
 3. *Stop signs*
 4. *Traffic signals or roundabouts*
 5. *Traffic signal timing changes and signal coordination*
 6. *Striped turn-lanes*
 7. *Turn movement prohibitions*
 8. *Bulb-outs and chicanes*

9. *Change stop sign location of two-way stop signs at four-way intersections to reduce unwarranted stops on parallel alternative routes*
 10. *Develop parallel routes or make parallel routes into couplets*
- E. *Implement the following measures in a stepwise manner to provide additional vehicle capacity on existing two-lane roads:*
1. *Within the existing curbs, provide a two-way left turn lane (2WLTL), two travel lanes, and up to two parking lanes when space permits – provides a capacity of up to 16,000 vehicles per day.*
 2. *Provide 2WLTL, two travel lanes, two bike lanes, and up to two parking lanes when space permits (usually a parking lane needs to be removed to add bike lanes) - provides a capacity of up to 16,000 vpd.*
 3. *Identify parallel alternate routes with available traffic capacity to which some of the excess traffic can be diverted and utilize intersection improvements listed in “D” above to encourage drivers to divert to identified alternate routes.*
- F. *If transportation demand management measures and capacity improvements located within the existing two-lane cross-section have been demonstrated to be inadequate:*
1. *Consider accepting a lower level of service;*
 2. *Within the existing curbs, provide four lanes consisting of two travel lanes and no parking - provides a capacity of up to 20,000 vpd. Note: Although a four-lane undivided roadway section provides more capacity than two lanes and one 2WLTL, the section with a 2WLTL is considered safer.*
 - a. *Within the existing curbs, same as above but with a.m. and p.m. peak hour left turn prohibitions into driveways and side streets - provides a capacity of up to 22,000 vpd.*
 - b. *Within the existing curbs, same as above but with a.m. and p.m. peak hour left turn prohibitions into driveways and side streets; widen curbs to provide left turn pockets at key intersections – provides a capacity of 24,500.*
 3. *Consider widening the curbs to provide additional travel lanes, bike lanes, 2WLTL, medians, parking lanes, and sidewalks, all as needed to meet demands.*

C-Px. Countywide Traffic Impact Fee Program. *In coordination with the cities within the County, shall develop and implement a countywide traffic impact fee program that addresses impacts on major roads resulting from development in cities and unincorporated areas. Adopt this fee within one year of the adoption of the General Plan Update. A traffic impact fee is currently being evaluated for the Greater Eureka Area, encompassing the Eureka urbanized area.*

Impact 3.5.3.2.-1: Unacceptable LOS on U.S. 101 Between S.R. 255 in Arcata and 6th Street in Eureka

The travel demand model indicates that implementation of the General Plan Update will result in increased traffic that will cause U.S. 101 between S.R. 255 in Arcata and 6th Street in Eureka to operate at LOS D/E in 2028 and 2040. The minimum acceptable LOS on U.S. 101 in urban areas in Caltrans District 1 is LOS D.

Caltrans is in the process of completing planning and designs for the Eureka-Arcata Route 101 Corridor Improvement Project (SCH Number 2001092035), which includes the area in question. Caltrans has completed a Final Environmental Impact Statement and a Final Environmental

Impact Report for the Eureka-Arcata Corridor Improvement Project (http://www.dot.ca.gov/dist1/d1projects/eureka_arcata/reports.htm). Caltrans is planning on certifying these documents and approving this project in early 2017. Permits will then need to be obtained and a final design will need to be approved.

Major proposed project features include safety and operational improvements to U.S. Highway 101 between Eureka and Arcata in Humboldt County, including a grade separated interchange at Indianola Road, a half signal at Airport Road, and a bridge replacement. The primary purpose of the proposed project is to improve safety at uncontrolled left turns on and off the highway. No other improvements are planned by Caltrans.

Analysis of Relevant General Plan Update Policies

The General Plan Update includes Policy C-P5, Level of Service Criteria, which strives to maintain a LOS "C" on all roadway segments, except for any portion of U.S. 101, where Level of Service "D" would be acceptable, and further states that Level of Service improvements for automobiles should not adversely affect Level of Service and/or Quality of Service for other modes of transportation, if possible. Policy C-P17, Highway Improvements, encourages state and federal highway improvements that promote safety and connectivity for all users, especially for communities with highway arterials. Policies C-P6 Jurisdictional Coordination and Integration, and C-P7 Joint Use of Traffic Models, encourages the use of consistent travel demand models and cross jurisdictional coordination in addressing impacts outside County jurisdiction.

Conclusion

Projected growth during the General Plan Update planning period in conjunction with growth in the cities within the County would increase vehicle trips on U.S. 101 between the cities of Eureka and Arcata. Future traffic levels are projected to cause the highway to fall to LOS "D/E"; therefore, implementation of the General Plan Update would result in a potentially significant impact. The General Plan Update policies and measures referenced above would reduce the anticipated impacts but not necessarily to a less-than-significant level. The mitigation measures described below would help reduce the impacts of the General Plan Update on U.S. 101 Between S.R. 255 in Arcata and 6th Street in Eureka.

Mitigation

Mitigation Measure 3.5.3.2.c. Modify Policy C-P17 to demonstrate support for the implementation of Caltrans U.S. 101 Eureka-Arcata Corridor Improvement Project, in a manner consistent with the General Plan Update.

C-P17. Highway Improvements. Encourage state and federal highway improvements that promote safety and connectivity for all users, especially for communities with highway arterials. **The County supports a strategy for safety and operational improvements to the U.S. Highway 101 Safety Corridor that is implemented in a manner consistent with the General Plan.**

Level of Significance after Mitigation

The future U.S. 101 LOS benefits resulting from Mitigation Measure 3.5.3.2.c cannot be definitively determined or tested at this time. In addition, improvements that would involve construction outside of the existing highway cross-section would be within an area that contains significant environmental constraints. Implementation of the Highway 101 Safety Corridor improvements within the General Plan Update planning period would be unlikely. Therefore, with

implementation of Mitigation Measure 3.5.3.2.c, impacts related to the future capacity of U.S. 101 would be reduced, but not necessarily to a less-than-significant level. This would be a **significant and unavoidable impact**.

Impact 3.5.3.2-2: Unacceptable LOS on U.S. 101/Broadway, City of Eureka

Implementation of the General Plan Update will result in increased traffic that will cause U.S. 101/Broadway in the City of Eureka to operate at LOS D in 2028 and 2040, which is the minimum acceptable LOS on U.S. 101 in urban areas in Caltrans District 1.

U.S. 101 within the City of Eureka consists of Broadway between 6th Street (south of the one-way couplet) to Herrick Avenue, where the freeway begins. The travel demand model projects that Broadway will operate at LOS D in 2028 and 2040. Broadway is a four-lane, north-south urban principal arterial highway in a mixed land use area. From approximately 800 feet south of the Kmart Traffic Signal to Washington Street, Broadway has a TWLTL. The Broadway corridor is approximately 3 miles in length. The Transportation Concept Report for this facility indicates that Broadway operates at a signalized unstable flow, which means that signalized intersections control level of service, and some intersections within the segment experience unstable flow at peak hour.

The collision rate at certain locations along Broadway reaches as high as four times the statewide average when compared to similar facilities. The corridor also experiences significant traffic congestion and poor mobility for all modes of transportation. The options for improvement include various capacity enhancements, such as added lanes or improved coordination (e.g. signal timing); freeing up capacity by converting trips from vehicles to other modes; and diverting trips to alternative routes, potentially including a bypass. Adding lanes to US 101 is generally infeasible as the route runs through areas that are fully built out, leaving little available space to create new lanes without taking land from adjacent properties. While limited relief could be achieved through optimized signal timing, changes in traffic patterns occur routinely and signal timing should therefore be modified as necessary to reflect such changes (City of Eureka General Plan Update Mobility Policy Paper (<http://www.eureka2040gpu.com/Links/pdfs/Mobility%20Policy%20Paper%203-23-15.pdf>)).

Analysis of Relevant General Plan Update Policies

The General Plan Update Circulation Element includes the following policy relating to a minimum LOS standard on U.S. 101: C-P5, Level of Service Criteria, which directs that the County shall strive to maintain a LOS "C" on all roadway segments and intersections, except for any portion of U.S. 101, where LOS "D" would be acceptable. This policy further states that Level of Service improvements for automobiles should not adversely affect Level of Service and/or Quality of Service for other modes of transportation, if possible. See Impact 3.5.3.12.c-1 above, for a discussion of how Policies C-P6 Jurisdictional Coordination and Integration, and C-P7 Joint Use of Traffic Model, lessen potential impacts.

Conclusion

The traffic model projects that buildout of the General Plan Update, in conjunction with the implementation of city general plans within the County, would result in traffic levels that would reduce the LOS of the U.S. 101 Broadway corridor at or below "D," which is the General Plan update LOS standard and the LOS concept established by Caltrans for this facility. Therefore, this would be a potentially significant impact.

Mitigation

Mitigation Measure 3.5.3.2.d. A Circulation Element policy shall be added to direct the County to participate in joint planning for the Broadway corridor:

C-Px, U.S. 101/Broadway Corridor. The County shall participate in joint planning for capacity improvements relating to the U.S. 101/Broadway corridor with HCAOG, Caltrans, and the City of Eureka.

Level of Significance after Mitigation

Based on the forecasts of the 2028 and 2040 travel demand model, the LOS on this section of US 101 will reach LOS D as a result of the implementation of city general plans within the County. The benefits to LOS of future Caltrans capacity improvements to U.S 101 cannot be definitively determined or tested at this time and no funding source has been identified. However, with implementation of Mitigation Measure 3.5.3.1.d, impacts related to the future capacity of U.S 101 would be reduced and LOS D is considered acceptable on U.S. 101. This impact is **less than significant**.

Impact 3.5.3.2.-3: Unacceptable LOS on Main St, Between 7th St and 13th Street, Fortuna

Implementation of the General Plan Update will result in increased traffic that will cause Main Street between 7th Street and 13th Street to operate at LOS D in 2028 and 2040.

Main Street and Fortuna Boulevard (North and South) in Fortuna are the former alignment of U.S. 101, prior to the construction of the freeway along the western edge of the City. The segment of Main Street between 7th St and 16th Street comprises the downtown portion of Fortuna and has been upgraded to provide bulbouts and other features that improve the pedestrian experience and provide protected parking areas. This section of Main Street will slightly exceed the County's LOS C standard but is not a candidate for improved capacity. The City of Fortuna General Plan Draft EIR determined that no additional lanes would be needed in this area, however it states that the 9th Street and Main Street and 12th Street and Main Street intersections will drop to F in 2030, and includes a mitigation measure for a signalized new left-turn land to east and west approaches to the 9th Street and Main Street intersection. Intersection improvements at 12th and Main also required. After mitigation, these intersections will drop to D. Policy TC-1.2 says LOS D is acceptable on Main Street.

Analysis of Relevant General Plan Update Policies

See the discussion of Impact 3.5.3.2.-4 above for a discussion of General Plan Update Circulation Element policies relating to minimum LOS standards and jurisdictional coordination.

Conclusion

Based on the travel demand model, growth projected to occur during General Plan Update planning period in conjunction with the growth in the cities within the County would reduce the LOS of the segments of Main Street in Fortuna, between 7th Street and 13th Street to LOS D. However, any mitigation involving capacity improvements, typically include the addition of travel lanes, and this would mean adding lanes to areas that are largely built out, leaving little available space to create new lanes without taking land from adjacent properties. or degrade the desired downtown amenities in the area. Therefore, this impact would be **significant and unavoidable**.

Impact 3.5.3.2-4: Unacceptable LOS on Kenmar Road between U.S. 101 NB Ramps and S. Fortuna Blvd, Fortuna

Growth projected to occur during the General Plan Update planning period in conjunction with the growth in the cities within the County will result in increased traffic that will cause Kenmar Road between U.S. 101 NB ramps and S. Fortuna Blvd. to operate at LOS D or below in 2028 and 2040. The minimum acceptable LOS on U.S. 101 in urban areas in Caltrans District 1 is LOS D.

Kenmar Road is located in the City of Fortuna and extends from South Riverwalk Drive to Rohnerville Road. The portion of Kenmar Road from U.S. 101 to South Fortuna Boulevard currently operates at a LOS "D" according to the travel demand model. Based on the Fortuna General Plan EIR, the intersection with Eel River Drive currently operates at a LOS "C", and the southbound 101 off-ramp to Kenmar is currently at an LOS "E". By 2028 and 2040, the travel demand model projects that the Kenmar Road from U.S. 101 to South Fortuna Boulevard road segment will degrade to LOS "D".

The Fortuna General Plan EIR identifies the following mitigation programs that will improve the operation of this segment and related intersections: South Fortuna Boulevard-Ross Hill Road/Kenmar Road - implement right-turn overlap phasing on both Kenmar Road approaches; Kenmar Road/Eel River Drive - the northbound Eel River Drive approach will need to be widened to provide a right-turn lane; Kenmar Road/U.S. 101 North Ramps - signalize and operate with permitted left-turn phasing (no additional lanes would be needed); Kenmar Road/U.S. 101 South Ramps - signalize, add a right-turn lane on the eastbound approach and operate with permitted left-turn phasing. Upon implementation of these improvements this segments and associated intersections would operate at LOS "C" or better.

Analysis of Relevant General Plan Update Policies

See the discussion of Impact 3.5.3.2.-4 above for a discussion of General Plan Update Circulation Element policies relating to minimum LOS standards and jurisdictional coordination. In particular, the General Plan Update Circulation Element includes the following policy relating to minimum LOS standards, C-P5, Level of Service Criteria, which strives to maintain a LOS "C" on all roadway segments, except for any portion of U.S. 101, where Level of Service D would be acceptable. See Impact 3.5.3.12.c-1 above, for a discussion of how Policies C-P6 Jurisdictional Coordination and Integration, and C-P7 Joint Use of Traffic Model, lessen potential impacts.

Conclusion

Based on the travel demand model, the 2028 and 2040 forecasts of growth projected to occur during the General Plan Update planning period in conjunction with the growth in the cities within the County indicate that, the LOS on this section of Kenmar Road would be reduced to LOS D. The City of Fortuna General Plan identifies a series of mitigations intended to improve the future operation of the Kenmar Road/Eel River Drive, Kenmar Road/U.S. 101 North Ramps, and Kenmar Road/U.S. 101 South Ramps to LOS "C". LOS benefits resulting from mitigation measures contained in the City of Fortuna General Plan Update DEIR cannot be definitively determined or tested at this time; impacts related to the future capacity of Kenmar Road would be reduced, but not necessarily to a less-than-significant level. Therefore, as the full implementation of these mitigation measures may not be sufficiently effective, and implementation of the mitigation is the jurisdiction of the City of Fortuna and not Humboldt County, this impact would be **significant and unavoidable**

Impact 3.5.3.3 Regional Level of Service Standard

Implementation of the General Plan Update would generate levels of development that result in increased traffic volumes on roads within the County that could Conflict with an applicable regional level of service standard.

This impact analysis addresses item “b” of the significance standards listed in Appendix G of the CEQA Guidelines as provided in Section 3.5.2 above. Pursuant to these criteria, the proposed County General Plan Update would have a significant impact if it would:

- c) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

The Humboldt County Association of Governments (HCAOG) is the Regional Transportation Planning Agency for Humboldt County. There is no regional congestion management agency in Humboldt County. The HCOAG Regional Transportation Plan (RTP) was adopted in 2014, The RTP does not establish level of service standards for roadway or multi-modal facilities.

The HCAOG Regional Transportation Plan (Variety in Rural Options of Mobility, HCAOG 20-Year Regional Transportation Plan 2014 Update, http://hcaog.net/sites/default/files/vroom_adopted_w_8.5x11_maps_0.pdf) Policy HR-11 states that level of service (LOS) standards are to be used to measure the performance of all regionally significant roadways that contribute to the regional transportation network. Objectives that are intended to carry out this policy call for the development and maintenance of a list of regionally significant roadways with established minimum acceptable LOS for each, and periodic traffic volume counts to determine whether minimum LOS levels are being maintained. A second objective calls for the traffic volume LOS to be coordinated with other bicycle and pedestrian LOS to achieve balanced multi-modal use of roadways.

Table HR-1 on page HR-2 of the RTP lists regionally significant streets roadways that are identified by members of city and County staff (the list of regionally significant roads in the unincorporated area identified by County staff is presented herein under the heading Major County Roads in 3.5.1 Transportation/Traffic -Environmental Setting). Given that Policy HR-11 includes an objective to establish a list of regionally significant roadways, it is not clear if the list in Table HR-1 is the official HCOAG list or if it represents an intermediate step towards establishing such a list. In addition, the 2014 RTP does not establish a regional LOS standard. Nonetheless, it is clear from Impact 3.5.3.1 above that projected growth during the General Plan Update planning period would result in additional traffic congestion and contribute to reductions in the level of service on County roads, state highways, and city streets.

Analysis of Relevant General Plan Update Policies

The following proposed Circulation Element policies are intended to reduce roadway congestion on County roads, state highways, and city streets and to facilitate coordination with HCAOG, Caltrans, and the seven cities. Policy C-P6, Jurisdictional Coordination and Integration, directs the County to use HCOAG, formal Memorandums of Understanding, and informal project level cooperation to integrate countywide transportation planning and implementation efforts. Currently, the County and each city maintain their own roadway standards. Policy C-P7, Joint Use of Traffic Models, would direct the County to integrate transportation planning and analysis through joint use of area-wide traffic models such as the Greater Eureka Area Travel Demand

Model (GEATM). Implementation Measure C-IM4, Regional Coordination, directs the County to support and participate in joint circulation system and land use planning with HCOAG, affected cities, Caltrans, and other transportation agencies and providers.

The GPU does establish a level of service criteria for County roads. Pursuant to Policy C-P5, Level of Service Criteria, the County shall strive to maintain Level of Service C operation on all roadway segments and intersections, except for U.S. 101, where Level of Service D shall be acceptable. This policy also states that Level of Service and/or Quality of Service for automobiles should not adversely affect Level of Service and/or Quality of Service for other modes of transportation, if possible. In addition, Policy C-P4, Mitigation Measures, requires that development with potentially significant impacts as determined by CEQA review be conditioned to proportionally mitigate such impacts through payment of impact fees, construction of on-site and off-site improvements, and dedication of rights-of-way, or a combination of impact fees, improvements and dedications.

Conclusion

As noted above, the growth projected to occur during the General Plan Update planning period has the potential to exceed level of service standards for certain roads and highways. The HCAOG Regional Transportation Plan does not specify a level of service standard for designated roads or highways, nor does any other HCAOG adopted document. The policies, standards and implementation measures listed above under Impact 3.5.3.2, address this impact and would require that transportation demand measures or road improvements are implemented in a timely manner so as to avoid deterioration in levels of service. However, this EIR cannot guarantee that transportation management programs would be implemented or would be completely successful, and that capacity related roadway improvements could feasibly be constructed. Therefore, this is a **potentially significant impact**.

Mitigation

Mitigation Measure 3.5.3.2.a will add an implementation measure that involves using best available traffic information, and working with other agencies to implement a coordinated traffic management strategy to plan and prioritize transportation demand measures and roadway improvements to reduce roadway congestion along such roadways, which will help reduce this impact as well.

Level of Significance after Mitigation

Mitigation 3.5.3.2a establishes a program for congestion relief by planning cooperatively with HCAOG, Caltrans, applicable cities, HTA, or other agencies to implement a coordinated traffic management strategy to plan and prioritize transportation demand measures and roadway improvements to reduce roadway congestion along such roadways and to use of a Countywide traffic impact fee program to support project implementation. These programs have the potential to reduce future congestion. However, potential congestion relief projects have not been identified, and coordination between affected agencies has not yet occurred. Therefore, the benefits to LOS of future capacity improvements cannot be definitively determined or tested at this time; therefore, with implementation of these mitigation measures, future capacity related impacts would be reduced, but not necessarily to a less-than-significant level. This impact would remain **significant and unavoidable**.

Impact 3.5.3.4: Air Traffic

Implementation of the general plan would allow new development and associated traffic that could pose safety risks due to conflicts with airport operations or potential exposure of new development to airport hazards.

This impact analysis addresses item "c" of the significance standards listed in Appendix G of the CEQA Guidelines as provided in Section 3.5.2 above. Pursuant to these criteria, the proposed General Plan Update would have a significant impact if it would:

- c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

Humboldt County contains eight general-aviation airports (Dinsmore, Samoa, Garberville, Hoopa, Kneeland, Murray, Rohnerville, and Shelter Cove), and one commercial service primary airport. The Humboldt County Airport Land Use Commission has established airport land use compatibility plans for each airport, except Samoa Field. The plans describe the allowable land uses and development standards for each airport compatibility zone.

Impact 3.7.2.5, Airport Safety Hazards, in Chapter 3.7, Hazards and Hazardous Materials, analyzes the extent to which the implementation of the General Plan Update would locate land uses within an airport land use plan or within two miles of an airport, which would result in a safety hazard for people residing or working in the project area. This safety hazards analysis described the proposed land use designations around airports and found that certain land use designations would conflict with the Airport Land Use Compatibility Plan. Impact 3.7.2.5 included several mitigation measures that would require that the proposed land use designations or allowable densities be changed in a manner consistent with the Airport Land Use Compatibility Plan, or that an overlay be applied to limit residential density and employment intensity to levels consistent with the Airport Land Use Compatibility Plan.

Residential and commercial growth during the General Plan Update planning period would likely generate additional passenger and cargo air travel within the County. However, the proposed General Plan Update does not contemplate land uses that would require any changes to air traffic patterns.

Pursuant to state and federal regulations, Humboldt County prepares an Airport Master Plan for each airport that it operates that evaluates safety risks. The Airport Master Plan is a 20-year comprehensive study that describes the short-, medium- and long-term development plans of an airport and its facilities. The master plans also contain an Airport Layout Plan that provides a graphic representation of the current conditions and the future long-term planned development for an airport as well as a capital improvement program that addresses how the master plan is to be implemented.

The Arcata-Eureka Airport Master Plan Report (September 2005) for the California Redwood Coast – Humboldt County Airport contains of future airport operations forecasts. Currently, commercial service is provided by United Express and Pen Air. The Arcata-Eureka Airport Master Plan projects that aircraft operations at the California Redwood Coast – Humboldt County Airport will increase from 49,000 in 2004 to 55,000 in 2024, a 12 percent increase. Passenger enplanements are projected to increase from 98,453 in 2004 to 167,000 in 2024. However, the slowing local economy since those projections may have an influence on future passenger travel growth rates.

Aircraft operations at the Dinsmore, Garberville, Murray Field, and Rohnerville airports are expected to increase by between 15 and 18 percent between 2010 and 2025 according to Table AS3 Aviation Activity Forecast – Annual Operations, of the Regional Transportation Plan Aviation Systems Element. Samoa Field, Hoopa Airport, and Shelter Cove Airport are not anticipated to experience increases in aircraft operations in the next 20 years. The airport master plans identify the improvements if any that may be required to accommodate future aircraft operations.

Analysis of Relevant General Plan Update Policies

The following proposed Safety Element policies are intended to ensure that implementation of the General Plan Update does not result in a change in air traffic patterns or an increase in traffic levels or a change in location that results in substantial safety risks. Safety Element Policy S-P21, Development Compatibility, encourages the ALUC to review the Airport Land Use Compatibility Plans (ALUCP) at least every five years to ensure the ALUCP accurately defines planning areas around airports, to establish land use policies and standards appropriate for the public safety and protection of airport operations, and to amend the General Plan to be consistent with changes to the ALUCP. Standard S-S14, Airport Land Use Compatibility Plan, requires that development within the jurisdiction of Airport Land Use Compatibility Plans (ALUCP) conform to the policies and standards of the ALUCP. Policy S-P22, Airport Land Use Compatibility Criteria, directs the County to regulate and plan land use around airports according to the Airport/Land Use Safety Compatibility Criteria (Safety Element Table 14-A), which is required to be consistent with the ALUCP. Policy S-P24, Airport Safety Combining Zone, indicates that airport safety combining zones are to be used within airport influence areas to ensure consistent application of the Airport Land Use Compatibility Criteria matrix. Policy S-P23, Obstruction-free Approach Surfaces, allows the maintenance of obstruction-free approach surfaces at all airports identified on the Approach and Clear Zone plans consistent with FAA requirements to be principally permitted. Also, Humboldt County Code Section 333-1 regulates building heights near airports.

Conclusion

The Safety Element policies and standards identified above along with the established airport land use compatibility plans would protect future operations of the airports and provide for the safety and compatibility of adjacent land uses. Because future land uses and development would continue to be subject to the established airport land use compatibility plans regulations and policies, this impact would be **less than significant**.

Mitigation

None required.

Impact 3.5.3.5: Road Safety

Implementation of the proposed General Plan Update would result in increased vehicle, pedestrians, and bicyclists trips on roadways within the unincorporated area, thereby increasing hazards to roadway users.

This impact analysis addresses item “d” of the significance criteria described in Section 3.5.2 above. Pursuant to these criteria, the proposed General Plan Update would have a significant impact if it would:

- d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Table 3.5-6, General Plan Update Circulation System Improvements, lists a series of additional road segments that are planned as part of the General Plan Update. The General Plan Update Circulation Diagram contains general illustrations of the proposed alignments for these roadways; however, designs have not yet been prepared. Changes in the alignment of these routes should be expected. New County roadways would be designed and constructed to meet the requirements of the Caltrans Highway Design Manual and/or AASHTO standards, which is consistent with federal highway standards. It is presumed therefore that roadway design would not create additional safety hazards. Other roads that are proposed by applicants to serve their projects would be constructed to meet County roadway standards contained in the Appendix to Title III, Division 2, of the Humboldt County Code Establishing Subdivision Design and Improvement Standards and Chapter 2, Emergency Access, of the Humboldt County Fire Safe Regulations; Title III - Land Use and Development---Division 11; the Humboldt County Design Manual; AASHTO; and the Caltrans Highway Design Manual.

Analysis of Relevant General Plan Update Policies

The General Plan Update supports a safe and efficient transportation system that accommodates automobiles, trucks, transit buses, bicycles, pedestrians, and the mobility-challenged population. Circulation Element Goal C-G1, Circulation System Safety and Functionality, defines a General Plan Update circulation system that is safe, efficient circulation system to all cities, communities, neighborhoods, recreational facilities, and adjoining regions. The Circulation Element contains policies to ensure that roadway design reduces roadway safety hazards and accommodate multi-modal users.

The Circulation Element includes policies and standards that that relate to safe circulation facilities for all transportation modes. C-P25, Multimodal Level of Service (LOS) and Quality of Service Standards (QOS), directs the County to use objective methods and criteria to formulate Level of Service (LOS) and Quality of Service (QOS) standards which consider “walkability audits” and “bikeability audits” suitable for the locality, to assess and plan the multi-modal quality and capacity of County roads and intersections. Policy C-P31, Design Standards for All Pathways, requires that design standards appropriate to urban, suburban, rural and remote character shall be used by the County Public Works Department for the design and construction of pedestrian and bicycle facilities. In addition, Policy C-P32, Traffic Calming, directs the County to use traffic calming measures, where feasible and appropriate, as a means of providing safe pedestrian and bicycle access.

Circulation Element Standard C-S5, Prioritizing Roadway Capital Expenditures, directs the County to use objective criteria to prioritize roadway capital expenditures and directs the County to develop criteria to reflect consideration of information such as accident data and traffic engineering safety analysis for safety projects, and LOS and QOS measures for congestion relief projects.

Specific policies that address existing transportation safety issues include Circulation Element Policy C-P17, Highway Improvements, which indicates that Humboldt County supports a strategy for safe and connective improvements. Policy C-P24, Investment in Improvements, requires that the County’s Capital Improvement Plan be consistent with the County-Wide Transportation Plan and that the level of service and quality of service for all users not be diminished when expanding roadway capacity for motorized circulation, and encourages road resurfacing

projects to provide improved access and safety for bicycles. Policy C-P29, Removal of Obstacles in Pathways, would require that, where feasible and consistent with the County-Wide Transportation Plan, new pathways and sidewalks be free of obstacles such as utility poles and mailboxes, and that existing sidewalks or pathways be widened or otherwise designed to provide the least amount of obstruction to users where obstacles are unavoidable. In addition, Policy C-P18, County Feedback to School Districts Regarding Transportation Planning, directs the County to provide feedback to school districts with new school site locations or other significant changes to school facilities or operations, to give advice on mitigating traffic impacts and promote multi-modal school site access.

For new development, Policy C-P4, Mitigation Measures, requires that development with potentially significant circulation impacts as determined by CEQA review be conditioned to proportionally mitigate such impacts through the payment of impact fees, construction of on-site and off-site improvements, and dedication of rights-of-way, or a combination thereof. The Land Use Element Rural Lands Chapter Policy RL-P5, Road Constraints and Rural Development, requires that rural zoning densities and subdivision approvals reflect road constraints identified by the County Public Works Department. This policy specifies that subdivisions may be allowed where roads can be feasibly improved to minimum County standards at the time of subdivision, or incrementally through road improvements from future development. Implementation measure RL-IM2, Identification of Substandard Roads, directs the County to coordinate with area emergency service providers to inventory and map road segments that do not meet subdivision road standards or State Responsibility Area Fire Safe standards. Such a measure constitutes a major undertaking and requires identification of a funding source.

Conclusion

The proposed General Plan Update Circulation Element has as its first goal to provide safe and efficient circulation system to all cities, communities, neighborhoods, recreational facilities, and adjoining regions, and contains policies to ensure that roadway design reduces roadway safety hazards and accommodates multi-modal users. The General Plan Update would prioritize improvements that address existing safety problems and design of new improvements to meet appropriate standards. Therefore, General Plan Update impacts relating to hazards to roadway users as a result of the General Plan Update would be **less than significant**.

Mitigation

None required.

Impact 3.5.3.6: Inadequate Emergency Access.

This impact analysis addresses item “e” of the significance criteria described in Section 3.5.2 above. Pursuant to these criteria, the proposed General Plan Update would have a significant impact if it would:

- e) Result in inadequate emergency access.

Inadequate emergency access and egress can occur as a result of an incomplete or not fully interconnected roadway network, such as inadequate roadway widths or turning radii, dead end or gated roads, one-way roads, or single ingress and egress routes. The lack of a comprehensive road network can result in traffic congestion or blocked routes which can limit the responsiveness of emergency service providers or trap residents trying to evacuate during an emergency. In addition, inadequate roadway widths and turning radii and one-way roads can

impair emergency access and cause delays in response. Gated communities can also obstruct access for emergency vehicles and hinder egress for residents evacuating in the event of an emergency such as a fire. The County also has several low water bridges or crossings that affect access in winter months.

The Humboldt County road network is comprised of highways and state routes, arterials, collectors, and local public, private, and fire access roads. Many neighborhoods and residential areas in McKinleyville and the unincorporated area surrounding the City of Eureka have been developed on cul-de-sacs or have small network of local roads that are served by a single access road. As indicated above, the lack of multiple connection points limits the ability of residents to evacuate in the event of an emergency and limits the ability of emergency responders to render prompt assistance. A major problem is gates on secondary access roads where residents may not know that there is a secondary access road since the gate is typically closed. The McKinleyville and Eureka Community Plans circulation maps identify road extensions and new connectors intended to improve circulation and that would provide better emergency access.

There are 25 roadway extensions or planned connectors that are intended to improve circulation and emergency access within the McKinleyville area. The Humboldt Hill area may be the largest unincorporated urbanized area with a single access. Approximately 2,200 people who live along Humboldt Hill Road have only one access road. The proposed Circulation Diagram contains 5 new connectors that would improve emergency access in the Humboldt Hill area, including: a connection from Loma at King Salmon Drive to London (Connector 40); the Aspen Road Extension to Loma; the Mesa Avenue Extension to Connector 40; a new connection from Humboldt Hill to Tompkins Hill (Connector 42); and a connection from the Barry Property to Connector 42.

Within rural areas, there are many communities and inhabited areas with only one access road, and sometimes old logging roads that are gated and can be used as emergency evacuation routes. Unless these roads are open at all times, such routes may not be known to all residents or emergency responders and can therefore not be relied upon for secondary access.

The Fire Safe Regulations (Title III, Land Use and Development, Division 11) apply to subdivisions and other new development within the State Responsibility Area, which covers most of the unincorporated County. The Fire Safe Regulations require that new road and street networks, whether public or private, provide for safe access for emergency wildland fire equipment and civilian evacuation, and provide unobstructed traffic circulation during a wildfire emergency. The Fire Safe Regulations specify road width, surface, grade, radii, turnouts and turnarounds, the maximum length of dead-end roads, as well as specify standards for driveways and gated entrances. Roadway standards for new development are also specified in Appendix to Title III, Division 2, of the Humboldt County Code establishing subdivision design and improvement standards. New County roadways would be designed and constructed to meet the requirements of the AASHTO standards, and/or Caltrans Highway Design Manual, which is consistent with federal highway standards.

Analysis of Relevant General Plan Update Policies

The General Plan Update includes policies, standards and implementation measures intended to ensure adequate emergency access to the new development planned under the General Plan Update. Rural Land Chapter of the Land Use Element Policy RL-P5, Road Constraints and Rural Development, requires that rural zoning densities and subdivision approvals reflect road constraints identified by the County Public Works Department and allows subdivisions where

roads can be feasibly improved to minimum County standards at the time of subdivision, or incrementally through road improvements from future development. Rural Lands Implementation Measure RL-IM2, Identification of Substandard Roads, directs the County to coordinate with area emergency service providers to inventory and map road segments that do not meet subdivision road standards or State Responsibility Area Fire Safe standards; assess the feasibility of achieving minimum standards through the Public Works Capital improvement program or through incremental road improvements provided by future development; and where adequate access cannot be achieved by these methods, place an overlay zone over the affected area restricting further residential subdivision.

Circulation Element Standard C-S1, Functional Classifications, states that roadway classifications and standards are shown in General Plan Circulation Element Table 7-B and further specified in the Subdivision Regulations. Circulation Element Implementation Measure C-IM1, Countywide Transportation Plan, directs the County to adopt a clear plan for the development and improvement of multi-modal transportation infrastructure, which will include a review and update of roadway, pedestrian, and bicycling facility standards in the Humboldt County Roadway Design Standards Manual, Title III—Land Use and Development Division 2 Subdivision Regulations, and other appropriate ordinances. This standard and implementation measure would ensure that current roadway standards continue to be implemented and are updated as needed.

Conclusion

The implementation of these General Plan Update policies, standards and implementation measures would help ensure that adequate emergency access is in place to serve planned development or that development density would be limited to a level consistent with available access. These policies, standards and programs, in concert with existing standards, would reduce the likelihood that implementation of the General Plan Update would result in inadequate emergency access below a threshold of significance. Therefore, General Plan Update impacts relating to inadequate emergency access would be **less than significant**.

Mitigation

None required.

Impact 3.5.3.7: Conflict with Multi-Modal Policies, Plans, or Programs

Implementation of the General Plan Update would result in new development and contain new policies that could conflict with regional multi-modal transportation plans, or otherwise decrease performance or safety of multi-modal facilities.

This impact analysis addresses item “f” of the significance criteria described in Section 3.5.2 above. Pursuant to these criteria, the proposed General Plan Update would have a significant impact if it would:

- f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

The HCAOG Regional Transportation Plan (RTP) would be the most appropriate multi-modal policy, plan, or program against which to compare the General Plan Update in regard to

potential conflicts. The overall goal of the RTP is to develop, operate, and maintain a well-coordinated, balanced, countywide multimodal transportation system that is safe, efficient, and provides good access to all cities, communities, and recreational facilities, and into adjoining regions. A balanced multimodal transportation system includes but is not limited to highway, public transit, aviation, marine, railroads, recreation, bicycle, pedestrian, and utility systems. The RTP establishes policies to meet this goal, which include preserving the road system, encouraging interconnectivity, linking inter-county systems, promoting a multimodal transportation system, and promoting transportation system management.

Other County multi-modal plans include the 1978 Humboldt County Trails Master Plan, which contained policies intended to develop an accessible trails network as shown on trails maps; provide safe bicycle and pedestrian trails to schools, when it is determined that inadequate access exists; encourage development of trails with varying lengths and difficulty through diverse terrain, scenery, and points of attraction; and blend trails into the natural environment to reduce environmental disruption. The County also participated in the preparation of the Manila Community Transportation Plan, 2005, that documents the technical details of existing and future traffic conditions and provides details regarding projects to address existing problems and enhance mobility for Manila.

HCAOG has also prepared the Humboldt County Coordinated Public Transit Human Services Transportation Plan, 2016, which identifies unmet transit needs and identifies strategies to address them. Other HCAOG plans that address public transit, bicycle, or pedestrian facilities include the Regional Pedestrian Needs Assessment, 2008, and the Humboldt County Regional Trails Master Plan, 2010. Each of these plans evaluates existing multi-modal transportation facility conditions and identifies and prioritizes future facility needs.

Transit service is available to portions of about two-thirds of the inland and coastal Community Planning Areas within the County, and serves up to 55 percent of the unincorporated area population. However, not all residents of these Community Planning Areas live within walking distance of bus stops. Community Planning Areas served by transit are concentrated in and around Humboldt Bay, with service also available within Community Planning Areas north and south along U.S 101 between Trinidad and Garberville, and east along S.R. 299 to Willow Creek. The Transportation-Disadvantaged Populations Report found that "there is generally good transit access to those services in the Humboldt Bay region with the exception of a few areas with concentrated populations (such as south of Eureka and between Eureka and Arcata). Another notable gap between transit access and population concentration is in the Carlotta-Hydesville area. Generally, in rural areas where transit services are more costly and challenging to provide, analysis indicates very limited service." Table 6-1, Identified Needs and Strategies/Projects, on Page 56 of the Humboldt County Coordinated Public Transit Human Services Transportation Plan, contains a series of strategies to address unserved or underserved areas, in particular: "Provide transit, or develop feeder route systems(s) that would link to main routes for the farther-out communities with low populations. Unserved communities identified: Between Eureka and Arcata along Old Arcata Road, (Freshwater, Bayside, Jacoby Creek), Samoa, Ferndale, Orick, McKinleyville, Bridgeville."

Analysis of Relevant General Plan Update Policies

The General Plan Update includes policies, standards and implementation measures intended to ensure consistency between the General Plan Update and regional multi-modal transportation plans. Circulation Element Goal C-G3, Interagency Cooperation, envisions coordinated planning between the County transportation system service providers and HCAOG for improved system design, development, operations, and maintenance.

Policy C-P2, Consideration of Land Uses in Transportation Decision Making, requires that land use and transportation decisions be based on a comprehensive planning approach that considers existing land uses, principally permitted land uses and future land development as proposed in adopted County plans and plans of other governmental agencies. Policy C-P6, Jurisdictional Coordination and Integration, directs the County to use HCOAG, formal Memorandums of Understanding, and informal project level cooperation to integrate countywide transportation planning and implementation efforts. Policy C-P22, Public Transit, requires that the County support the implementation of guiding goals, policies, and objectives of the Public Transit and Paratransit Service Element of the Regional Transportation Plan as amended, to the extent they are consistent with the General Plan. Policy C-S8, Pedestrian and Bicycle System, requires that a County adopted Pedestrian and Bicycle System Plan consistent with the RTP shall identify trails and routes considered a part of County maintained circulation system. This standard further states that development projects proposed on lands that include a County maintained trail or route may be required to dedicate easements or make improvements.

In addition to policies that require the County to coordinate its multi-modal planning and projects with the RTP, the Circulation Element contains additional policies that are intended to improve the capacity of multi-modal transportation facilities. Policy C-P23, Public Transit Service, requires the County to coordinate and integrate with public transportation providers so that a full range of travel patterns and connectivity with other modes of transportation can be supported.

Policy C-P25, Multimodal Level of Service (LOS) and Quality of Service Standards (QOS), directs the County to use objective methods and criteria to formulate Level of Service (LOS) and Quality of Service (QOS) standards which consider "walkability audits" and "bikeability audits" suitable for the locality, to assess and plan the multi-modal quality and capacity of County roads and intersections. Standard C-S7, Transit, Bicycle, and Pedestrian Quality/Level of Service Standards, requires that bicycle and pedestrian Quality of Service and Level of Service Standards be specified in county code and that Transit Level of Service standards specified in the Public Transit Service Element of the Regional Transportation Plan as amended, be utilized in land use planning. Implementation Measure C-IM12, Pedestrian and Bicycle System Plan, requires that the Public Works Department prepare a Pedestrian and Bicycle System Plan consistent with the Regional Transportation Plan and incorporate standards into the Subdivision Regulations.

Implementation Measure C- IM11, Transit Service to East, South and North County, directs the County to pursue funding and partnerships with the Humboldt Transit Authority, Native American tribes, and non-profit transportation organizations to establish and sustain transit services to rural communities. Air Quality Element Policy AQ-P1, Reduce Length and Frequency of Vehicle Trips, directs the County to reduce the length and frequency of vehicle trips through land use and transportation policies by encouraging mixed-use development, compact development patterns in areas served by public transit, and alternative modes of travel.

Conclusion

The proposed policies contained in the General Plan Update are supportive of the RTP, and encourage the consideration of transportation impacts in land use decision making and coordination with HCAOG and transportation service providers. Therefore, the General Plan Update would not conflict with policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities adopted by HCAOG.

A significant portion of planned development is outside areas served by transit providers. Approximately 200 acres of land planned for medium density residential uses is more than ¼ mile from existing transit stops, but could be served with the establishment of additional transit stops along existing nearby routes or the extension of existing routes. However, these conditions would not decrease the performance or safety of public transit, bicycle, or pedestrian facilities. Therefore, General Plan Update impacts relating to multi-modal policies, plans, or programs would be **less than significant**.

Mitigation

None required.