



Willow Creek Community Services District
Downtown Wastewater Development Project
Draft Environmental Impact Report

SCH #2015012014

June 2015

Draft Environmental Impact Report for the
Downtown Wastewater Development Project

SCH #2015012014

Prepared for:

Willow Creek Community Services District
P.O. Box 8
Willow Creek, CA 95573

Attention: Lonnie Danel
General Manager
(530) 629-2136

Prepared by:

GHD Inc.
718 Third Street
Eureka, CA 95501

Contact: Pat Kaspari
Project Manager
(707) 443-8326

Project Ref#: 12057-8410746

June 2015

Table of contents

Acronymns and Abbreviations	iv
1 Introduction	1-1
2 Project Description.....	2-1
3 Environmental Setting, Impacts and Mitigation Measures.....	3-1
3.1 Aesthetics	3.1-1
3.2 Agriculture and Forest Resources	3.2-1
3.3 Air Quality and Odor	3.3-1
3.4 Biological Resources	3.4-1
3.5 Cultural Resources	3.5-1
3.6 Geology and Soils.....	3.6-1
3.7 Greenhoue Gas Emissions.....	3.7-1
3.8 Hazards and Hazardous Materials	3.8-1
3.9 Hydrology and Water Quality.....	3.9-1
3.10 Land Use and Planning	3.10-1
3.11 Noise.....	3.11-1
3.12 Transportation.....	3.12-1
4 Alternatives Description and Analysis.....	4-1
5 Other CEQA Required Sections	5-1
6 List of Preparers.....	6-1

Table index

Table 1-1: Summary of Impacts and Mitigation Measures	1-4
Table 3.3-1 Relevant California and National Ambient Air Quality Standards and Attainment Status	3.3-2
Table 3.3-2 Highest Measured Criteria Air Pollutant Concentrations in North Coast Air Basin	3.3-5
Table 3.4-1 Score Value Ranges for NatureServe Conservation Status Ranks	3.4-2
Table 3.8-1 Sites with Potential Impacted Soil and Groundwater.....	3.8-2
Table 3.8-2 Federal Laws and Regulations Related to Hazardous Materials Management	3.8-5
Table 3.12-1 Definitions of Acoustical Terms	3.12-2
Table 3.12-2 Construction Equipment Reference Noise Levels Measured at 50'	3.12-7
Table 3.12-3 Vibration Source Levels for Project Construction Equipment.....	3.12-8
Table 4-1 Comparison of Alternatives to the Project, as Mitigated.....	4-6

Image index

Image 2-1: General flow diagram of recirculating gravel filter system	2-5
Image 3.1-1: Looking east from Willow Glen Road (proposed 6" line)	3.1-2
Image 3.1-2: Looking northeast from intersection of Hwy. 96 and Mayfair St. (proposed pump station)	3.1-3
Image 3.1-3: Looking northeast from parking lot off Country Club Drive (directional drilling location)	3.1-3
Image 3.1-4: Looking south from Roth Road (proposed 6" line)	3.1-4
Image 3.1-5: Looking west along Highway 299 from Roth Road (proposed 6" line)	3.1-4
Image 3.1-6: Looking east along Highway 299 (proposed 6" line)	3.1-5
Image 3.1-7: Looking east at the proposed infiltration disposal site (Mill Site)	3.1-5
Image 3.1-8: Looking east at the alternative infiltration disposal site (Stockel Site)	3.1-6
Image 3.1-9: View of water treatment plant	3.1-9

Figure index (figures located after chapter)

Figure 2-1: Project Planning Area	2-11
Figure 2-2: Sewered Area Boundary	2-13
Figure 2-3: Collection, Treatment, and Disposal System	2-15
Figure 2-4: Potential Service Area Topography	2-17
Figure 3.1-1: Viewpoint Locations	3.1-11
Figure 3.8-1: Sites of Interest and Hazard Ranks	3.8-15
Figure 3.9-1: FEMA 100yr Floodplain Boundary	3.9-15
Figure 3.10-1: Existing Land Use Map	3.10-5
Figure 3.10-2: Existing Zoning Map	3.10-7

Appendices

Appendix A - Notice of Preparation
Appendix B - Letters in Response to Notice of Preparation
Appendix C - Botanical Memo
Appendix D - Plant Species Table
Appendix E - Animal Species Table
Appendix F - Hazardous Materials Corridor Study
Appendix G - Geotechnical Report
Appendix H - Groundwater Anti-degradation Analysis

Acronyms and Abbreviations

AAI	all appropriate inquiries
AB	Assembly Bill
AB32	Global Warming Solutions Act of 2006
ADT	average daily traffic
APE	area of potential effect
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BGS	below ground surface
BLM	Bureau of Land Management
BMPs	Best Management Practices
BOD	biochemical oxygen demand
B.P.	before present
BTEX	benzene, toluene, ethylbenzene, and xylene
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Cal/EPA	California Environmental Protection Agency
CalFire	California Department of Forestry and Fire Protection
Cal/OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CDPH	California Department of Public Health
CDPR	California Department of Parks and Recreation
CEC	California Energy Commission
CERCLA	Comprehensive Environmental Response, Compensation and Liability
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGF	California Fish and Game Code
CFR	Code of Federal Regulations
CGS	California Geological Survey
CHP	California Highway Patrol
CHSC	California Health and Safety Code
CH ₄	methane
CIWMB	California Integrated Waste Management Board
CMU	concrete masonry unit
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPPA	California Native Plant Protection Act
CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel

dba	A-weighted sound level
DHS	California Department of Health Services
DOC	California Department of Conservation
DOT	U.S. Department of Transportation
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
EDR	Environmental Data Resources
EIR	Environmental Impact Report
EOC	County Emergency Operations Center
EOP	Humboldt County Emergency Operations Plan
EPA	Environmental Protection Agency
ESA	Federal Endangered Species Act
Fed/OSHA	Federal Occupational Safety and Health Administration
FEMA	Federal Emergency Management Agency
FMMP	Farmland Mapping and Monitoring Program
FPD	Fire Protection District
ft/sec	feet per second
g	gravity
GHG	Greenhouse Gas
gpd	gallons per day
gpm	gallons per minute
HAZWOPER	Hazardous Waste Operations and Emergency Response
HCAOG	Humboldt County Association of Governments
HCDEH	Humboldt County Division of Environmental Health
HDD	horizontal directional drilling
HDPE	high-density polyethylene
HP	horsepower
H ₂ O	water vapor
K-t NeT	Klamath Trinity Non-Emergency Transportation
kWh	kilowatt-hours
Ldn	Day/Night Average Sound Level
Leq	equivalent noise level
Lmax	maximum A-weighted noise level
Lmin	minimum A-weighted noise level
LOP	Local Oversight Program
LOS	Level of Service
MAR	marine
MBR	membrane bioreactors
MBTA	Migratory Bird Treaty Act
MGD	million gallons per day
MG/L	Milligrams Per Liter
ml	milliliter
MMT	million metric tons
MtBE	methyl tertiary butyl ether
MUN	municipal supply
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCRWQCB	North Coast Regional Water Quality Control Board
NCUAQMD	North Coast Unified Air Quality Management District
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
N ₂ O	nitrous oxide
NOP	Notice of Preparation
NOX	nitrogen oxides
NO ₂	nitrogen dioxide

NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NSR	New Source Review
NTU	nephelometric turbidity unit
OB	optical brighteners
OES	Office of Emergency Services
OMR	Office of Mine Reclamation
OWTS	onsite wastewater treatment systems
O ₃	ozone
PAHs	polycyclic aromatic hydrocarbons
PGA	peak ground acceleration
PG&E	Pacific Gas & Electric
PM	particulate matter
PM ₁₀	particulate matter 10 microns or less in diameter
PM _{2.5}	particulate matter 2.5 microns or less in diameter
Ppm	parts per million
PPV	Peak Particle Velocity
PRC	Public Resources Code
PS-1	pump station 1
PSD	Prevention of Significant Deterioration
RGF	recirculating gravel filter
RMS	Root Mean Square
ROG	reactive organic gases
ROW	right of way
RTPA	Regional Transportation Planning Agency
RWD	Report of Waste Discharge
RWQCB	Regional Water Quality Control Board
SAA	Stream Alteration Agreement
SAL	saline
SARA	Superfund Amendment and Reauthorization Act
SBR	sequencing batch reactor
SF	square feet
SMARA	Surface Mining and Reclamation Act
SMGB	California Department of Conservation State Mining and Geology Board
SRA	State Responsibility Areas
STED	septic treatment effluent discharge
STEP	septic tank effluent pumping
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	Toxic Air Contaminants
TDH	total dynamic head
TMDLs	total maximum daily loads
TPZ	Timberland Production Zone
TSS	total suspended solids
TVES	Trinity Valley Elementary School
UBC	Uniform Building Code
µg/m ³	micrograms per cubic meter
USACE	U.S. Army Corps of Engineers
USA North	Underground Service Alert North
U.S. EPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
WCCSD	Willow Creek Community Services District
WDP	Waste Discharge Permit
WDR	Waste Discharge Requirements
Willow Creek CAP	Willow Creek Community Action Plan

1. Introduction and Summary

1.1 California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires that discretionary decisions by public agencies be subject to environmental review. The purpose of an environmental impact report (EIR) is to identify the significant effects of the project on the environment, to identify alternatives to the project, and to indicate the manner in which those significant effects can be mitigated or avoided (Section 21002.1[a]). Each public agency is required to mitigate or avoid the significant effects on the environment of projects it approves or carries out whenever it is feasible.

This Draft EIR has been prepared by the Willow Creek Community Services District (WCCSD) for the proposed Downtown Wastewater Development Project (project) pursuant to CEQA (Public Resources Code Section 21000 et seq.) and the CEQA Guidelines (California Code of Regulations Section 15000 et seq.). Environmental effects of the project that must be addressed include the significant effects of the project, growth-inducing effects of the project, and significant cumulative effects of past, present, and reasonably anticipated future projects. The purpose of an EIR is not to recommend either approval or denial of a project. CEQA requires decision-makers to balance the benefits of a project against its unavoidable environmental effects in deciding whether to carry out a project. The lead agency will consider the Draft EIR, comments received on the Draft EIR, and responses to those comments before making a final decision. If significant environmental effects are identified, the lead agency must adopt “Findings” indicating whether feasible mitigation measures or alternatives exist that can avoid or reduce those effects. If significant environmental impacts are identified as unavoidable after proposed mitigation, the lead agency may still approve the project if it determines that the social, economic, or other benefits outweigh the unavoidable impacts. The lead agency would then be required to prepare a “Statement of Overriding Considerations” that discusses the specific reasons for approving the project, based on information in the EIR and other information in the administrative record.

1.2 Type of EIR

The Downtown Wastewater Development EIR is a Project EIR, pursuant to CEQA Guidelines Section 15161. A project EIR examines the environmental impacts of a specific development and focuses on the changes in the environment that would result from the construction, development, and ultimate operation of the project.

1.3 Intended Uses of the EIR

The purpose of an EIR is to provide a clear understanding of the environmental impacts associated with the construction and operation of a project and the EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the Notice of Preparation (NOP) is published, from both a local and regional perspective. This environmental setting normally constitutes the baseline physical conditions by which the lead agency determines whether an impact is significant. The lead agency (WCCSD) is the decision-making body that will ultimately certify the adequacy of the EIR and approve the implementation of the project.

In addition to the lead agency, other responsible and trustee agencies may need to use this EIR in approving permits or providing recommendations for the project. These agencies include, but are not limited to:

- County of Humboldt (Encroachment Permit)
- California Department of Transportation (Encroachment Permit)
- North Coast Regional Water Quality Control Board (National Pollutant Discharge Elimination System Permit, Report of Waste Discharge)

1.4 Public Scoping Process

On January 9, 2015, the NOP for the WCCSD Downtown Wastewater Development Project EIR was distributed (included in Appendix A). The NOP was mailed to the State Clearinghouse and the reviewing State agencies, as well as local and regional agencies, triggering the start of a 30-day scoping period. A public notice on the NOP was also mailed to property owners within the Sewered Area. On January 22, 2015 a public scoping meeting was held at WCCSD's Board Room located at 135 Willow Road, in Willow Creek, to solicit input regarding the issues that should be addressed in the EIR. The scoping period ended on February 7, 2015. One letter was received during the scoping period, from the State Water Resources Control Board and is included in Appendix B.

1.5 Availability of the Draft EIR and Public Comment Period

The Draft EIR will be circulated for 45 days, from June 15, 2015 to July 29, 2015, to allow interested individuals and public agencies to review and comment on the document. Written comments on the Draft EIR will be accepted by WCCSD until 5:00 pm on July 29, 2015. Public agencies, interested organizations and individuals are encouraged to submit comments on the Draft EIR to:

Willow Creek Community Services District
Attention: Lonnie Danel, General Manager
P.O. Box 8
Willow Creek, CA 95573
Fax: 530-629-2137
Email: <http://willowcreekcsd.com/contact-us>

To facilitate understanding of the comments, please provide a separate sentence or paragraph for each comment, and note the page and chapter/section of the Draft EIR to which the comment is directed.

The Draft EIR is available for review at WCCSD's office located at 135 Willow Road in Willow Creek, California. It is available in downloadable Adobe Acrobat format on the WCCSD's website at <http://www.willowcreekcsd.com/>.

At the end of the public review period, written responses will be prepared for comments received on the Draft EIR. The comments and responses will be included in the Final EIR and will be considered by the WCCSD prior to consideration of the adequacy of the EIR. Prior to approval of the project, WCCSD must certify that the EIR has been completed in compliance with CEQA.

1.6 Organization of this EIR

This Draft EIR is organized into chapters, as identified and briefly described below. Chapters are further divided into sections (e.g., Section 3.2, Aesthetics).

- Chapter 1, Introduction and Summary. Chapter 1 describes the purpose and organization of the Draft EIR, context, and terminology used in the Draft EIR. This chapter also summarizes the project description, alternatives to the project, significant environmental impacts, and mitigation measures to reduce or eliminate those impacts.
- Chapter 2, Project Description. Chapter 2 describes the project objectives, project location, background, project characteristics, and project components.
- Chapter 3, Environmental Setting, Impacts and Mitigation Measures. For each environmental resource area, this chapter describes the existing environmental and regulatory setting, discusses the environmental impacts associated with the proposed project, identifies feasible mitigation measures to reduce or eliminate those impacts, and provides conclusions on significance.
- Chapter 4, Alternatives. This chapter describes the alternatives to the proposed project that are being considered to mitigate the project's environmental impacts while meeting most of the project's objectives.
- Chapter 5, Other CEQA Related Impacts. This chapter describes the unavoidable significant impacts, growth-inducing, and irreversible impacts.
- Chapter 6, Report Preparation. This chapter identifies the Draft EIR authors and consultants who provided analysis in support of the Draft EIR's conclusions.
- Appendices. The appendices contain various technical reports and publications that have been summarized or otherwise used for preparation of the Draft EIR.

1.7 Areas of Controversy and Key Issues to be Resolved

Section 15123 of the CEQA Guidelines requires an EIR to identify areas of controversy known to the lead agency, including issues raised by agencies and the public. The following provides a brief summary of the comments/issues raised in the SWRCB comment letter and verbal comments received on the NOP and during the public scoping meeting. The comment letter received on the NOP is included in Appendix B of this document.

- The project is subject to provisions of the Federal Endangered Species Act (ESA), and must obtain Section 7 clearance from the United States Fish and Wildlife Service (USFWS), and/or the United States Department of Commerce National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS) for any potential effects to special-status species
- Would the project involve any direct effects from construction activities, or indirect effects such as growth inducement, that may affect federally listed threatened, endangered, or candidate species that are known, or have a potential to occur in the project area
- Would the project have any impacts to cultural resources
- The project should be compliant with the Federal Clean Air Act

- The project should be evaluated for wetlands or United States waters delineation by the United States Army Corps of Engineers (USACE)
- Would the project impact any birds protected under the Migratory Bird Treaty Act
- The project should be compliant with the Flood Plain Management Act and identify whether or not the project is in a Flood Management Zone
- Would the project impact any Wild and Scenic Rivers.

1.8 Summary of Impacts and Proposed Mitigation Measures

Table 1-1 identifies, by resource category, the significant project impacts and proposed mitigation measures. Additional information about the impacts and mitigation measures can be found in Chapter 3 of this EIR, as referenced for each resource category.

Table 1-1: Summary of Impacts and Mitigation Measures

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
Aesthetics			
Impact AES-1: Would the project have a substantial adverse effect on a scenic vista.	Less than Significant	n/a	
Impact AES-2: Would the project substantially degrade the existing visual character or quality of the site and its surroundings.	Less than Significant	n/a	
Impact AES-3: Would the project create a new source of substantial light or glare which would adversely affect day or night-time views in the area.	Less than Significant	n/a	
Impact Aes-C-1: Would the project result in a cumulatively considerable contribution to a cumulative impact related to aesthetic resources.	Less than Significant	n/a	
Agriculture and Forestry Resources			
Impact AG-1: Would the project convert Important Farmland to non-agricultural use, or conflict with agricultural zoning or a Williamson Act contract, or result in the loss of agricultural or forest land.	No Impact	n/a	

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
Impact AG-C-1: Would the project result in cumulatively considerable contribution to a significant cumulative impact related to forest resources.	No Impact	n/a	
Air Quality			
Impact AQ-1: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation.	Potentially Significant	Mitigation Measure AQ-1: Implement Dust Control Measures during Construction To limit dust associated with the construction activity, the District shall include the following recommended best management practices in all construction contract specifications for the proposed Project: <ul style="list-style-type: none"> • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas and unpaved access roads) shall be watered two times per day. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered. • Limit idling times to less than 5 minutes. • All vehicle speeds on unpaved areas shall be limited to 15 miles per hour. • All paving shall be completed as soon as possible after work is finished. 	Less than Significant
Impact AQ-2: Would the project expose sensitive receptors to substantial pollutant concentrations.	Less than Significant	n/a	
Impact AQ-3: Would the project create objectionable odors affecting a substantial number of people.	Less than Significant	n/a	
Impact AQ-C-1: Would the project contribute to cumulatively considerable air quality impacts.	Less than Significant	n/a	
Biological Resources			
Impact BIO-1: Substantial Adverse Effect on Special-Status Species	Less than Significant	n/a	
Impact BIO-2: Substantial Adverse Effect on Riparian Habitat or Special-Status Plant Communities identified in local or regional plans,	No Impact	n/a	

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
policies, and regulations by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.			
Impact BIO-3: Substantial Adverse Effect on Federally Protected Wetlands.	No Impact	n/a	
Impact BIO-C-1: Would the project result in a cumulatively considerable contribution to cumulative impacts related to biological resources.	Less than Significant	n/a	
Cultural Resources			
Impact CR-1: Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.	Potentially Significant	<p>Mitigation Measure CR-1: Disturbance of Undiscovered Archaeological Resources.</p> <p>If previously unidentified cultural resources are unearthed during construction, WCCSD shall halt work in that area until a qualified archaeologist can assess the significance of the find. Prehistoric materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. If any find is determined to be significant, WCCSD and the archaeologist shall determine the appropriate avoidance measures or other appropriate mitigation. All significant cultural resources recovered shall be, as necessary and at the discretion of the consulting archaeologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards. In considering any suggested measures proposed by the consulting archaeologist in order to mitigate impacts to historical resources or unique archaeological resources, WCCSD shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and</p>	Less than Significant

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
		<p>other considerations.</p> <p>If avoidance is infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project while mitigation for historical resources or unique archaeological resources is being carried out.</p>	
Impact CR-2: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	Potentially Significant	<p>Mitigation Measure CR-2: Recovery of Buried Paleontological Resources</p> <p>In the event that paleontological resources are discovered, WCCSD shall notify a qualified paleontologist. The paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. If fossilized materials are discovered during construction, excavations within 50 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist. The paleontologist shall notify the appropriate agency to determine procedures that would be followed before construction is allowed to resume at the location of the find.</p> <p>If WCCSD determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project on the qualities that make the resource important. The plan shall be submitted to WCCSD for review and approval prior to implementation.</p>	Less than Significant
Impact CR-3: Would the project disturb any human remains, including those interred outside of formal cemeteries.	Potentially Significant	<p>Mitigation Measure CR-3: Potential to Uncover Human Remains.</p> <p>If construction activities result in the discovery of human remains during ground disturbing construction activities, in accordance with California Health and Safety Code Section 7050.5, no further disturbance shall occur until the Humboldt County Coroner (Coroner) has made a determination of origin and disposition pursuant to PRC Section 5097.98. The Coroner shall be notified of the find immediately and there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the Coroner makes the required determinations regarding the remains. If the human remains are determined to be</p>	Less than Significant

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
		prehistoric, the Coroner shall notify the NAHC, which shall determine and notify a Most Likely Descendant. The Most Likely Descendant shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and non-destructive analysis of human remains and items associated with Native American burials.	
Impact CR-C-1: Would the project result in cumulatively considerable contributions to cumulative impacts related to cultural resources.	Less than Significant	n/a	
Geology and Soils			
Impact GEO-1: Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides.	Potentially Significant	<p>Mitigation Measure GEO-1: Implement Recommendations in Geotechnical Report</p> <p>WCCSD shall ensure that site preparation and earthwork is done in accordance with the recommendations in the geotechnical report for the project (Crawford & Associates 2015). This would include performing all site preparation and earthwork activities in accordance with the recommendations listed in Section 7 – Conclusion and Recommendations, in the geotechnical report. This may include, but would not be limited to, one or more of the following measures (or equivalent measures) to meet the performance standards:</p> <p>Maintain wet optimum moisture content of clay soils where the soils will support foundations, concrete slabs, and asphalt concrete pavements, until covered with permanent construction and install moisture barriers.</p> <p>Remove organic topsoil from planned structure areas prior to construction.</p> <p>The project shall be designed and constructed in conformance with the specific recommendations contained in the geotechnical report, including recommendations for grading, ground improvement, foundations, concrete slabs and asphalt concrete pavements. The recommendations made in the geotechnical report shall be incorporated into the final plans and specifications and implemented during construction. Professional inspection of foundation and excavation, earthwork and</p>	Less than Significant

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
		other geotechnical aspects of site development shall be performed during construction in accordance with the current version of the California Green Building Standards Code.	
Impact GEO-2: Would the project result in substantial soil erosion or the loss of topsoil.	Less than Significant	n/a	
Impact GEO-3: Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.	Less than Significant	n/a	
Impact GEO-C-1: Would the project result in cumulatively considerable contribution to cumulative impacts related to geology and soils.	Less than Significant	n/a	
Greenhouse Gas Emissions			
Impact GHG-1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	Less than Significant	n/a	
Impact GHG-2: Would the project conflict with an	Less than Significant	n/a	

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.			
Impact GHG-C-1: Would the project result in a cumulatively considerable contribution to a significant cumulative impact relative to greenhouse gas emissions.	Less than Significant	n/a	
Hazards and Hazardous Materials			
Impact HAZ-1: Would the project create a significant hazard to the public or the environment through the routine transport, use, disposal, or accidental release of hazardous materials.	Potentially Significant	<p>Mitigation Measure HAZ-1: Preparation of Hazardous Substance Control and Emergency Response Plan</p> <p>The WCCSD shall ensure that an environmental training program is established to communicate environmental concerns and appropriate work practices, including spill prevention, emergency response measures, and proper BMPs implementation, to all field personnel. The training program shall emphasize site-specific physical conditions to improve hazard prevention (e.g., identification of potentially hazardous substances) and shall include a review of all site-specific plans.</p> <p>A Hazardous Substance Control and Emergency Response Plan shall be prepared by the contractor. This plan shall be submitted to the county along with the grading permit application for each structure or with the encroachment permit application for the construction of pipelines. The plan shall prescribe hazardous-materials handling procedures for reducing the potential for a spill during construction and shall include an emergency response program to ensure quick and safe cleanup of accidental spills.</p> <p>Furthermore, the plan shall identify areas where refueling and vehicle maintenance activities and storage of hazardous materials, if any, shall be permitted. These directions and requirements shall also be included in the project's SWPPP.</p> <p>Mitigation Measure HAZ-2: Control of Minor Releases</p> <p>Oil-absorbent material, tarps, and storage drums shall be used to contain and control any</p>	Less than Significant

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
		<p>minor releases in construction areas. Emergency spill supplies and equipment shall be kept adjacent to all areas of work and in staging areas, and shall be clearly marked. Detailed information for responding to accidental spills and for handling any resulting hazardous materials shall be provided in the project's Hazardous Substances Control and Emergency Response Plan.</p> <p>Mitigation Measure HAZ-3: Preparation of Hazardous Materials Business Plan</p> <p>The WCCSD shall prepare a Hazardous Materials Business Plan for the wastewater treatment facility that would address handling and storage of all hazardous chemicals that would be used during the treatment process. The plan shall address containment, site layout, and emergency response and notification procedures for a spill or release.</p>	
Impact HAZ-2: Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.	Less than Significant	n/a	
Impact HAZ-C-1: Would the project result in a cumulatively considerable contribution to a significant cumulative impact related to hazards or hazardous materials.	Less than Significant	n/a	
Hydrology and Water Quality			
Impact HYD-1: Would the project violate any water quality standards, substantially degrade water quality, or waste discharge requirements.	Less than Significant	n/a	
Impact HYD-2: Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net	Less than Significant	n/a	

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
deficit in aquifer volume or a lowering of the local groundwater table (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).			
Impact HYD-3: Would the project substantially alter the existing drainage pattern of the site or area or create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems.	Less than Significant	n/a	
Impact HYD-4: Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.	Less than Significant	n/a	
Impact HYD-C-1: Would the project result in a cumulatively considerable contribution to cumulative impacts related to hydrology and water quality.	Less than Significant	n/a	
Land Use and Planning			
Impact LU-1: Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.	No Impact	n/a	
Impact LU-C-1: Would the project result in cumulatively considerable contribution to a significant cumulative impact related to land use and	Less than Significant	n/a	

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
planning.			
Mineral Resources			
Impact ME-1: Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.	Less than Significant	n/a	
Impact ME-2: Would the project result in inefficient, wasteful, or unnecessary consumption of fuels or other energy resources, especially fossil fuels such as coal, natural gas, and oil.	Less than Significant	n/a	
Impact ME-C-1: Would the project result in cumulatively considerable contribution to mineral or energy resources impacts.	Less than Significant	n/a	
Noise			
Impact NOI-1: Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	Potentially Significant	<p>Mitigation Measure NOI-1: Reduce Construction-Related Noise</p> <p>The WCCSD shall ensure that the contractor(s) implement construction noise control measures during daytime construction activities. Noise control measures shall include, but would not be limited to the following:</p> <p>All equipment driven by internal combustion engines shall be equipped with mufflers which are in good condition and appropriate for the equipment.</p> <p>The construction contractor shall utilize “quiet” models of air compressors and other stationary noise sources where technology exists.</p> <p>Unnecessary idling of internal combustion engines shall be prohibited.</p> <p>At all times during project grading and construction, stationary noise-generating equipment shall be located as far as</p>	Less than Significant

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
		<p>practicable from sensitive receptors.</p> <p>The construction staging area shall be located the greatest distance away as feasible between construction-related noise sources and noise-sensitive receptors during project construction.</p> <p>The construction contractor shall designate a “noise disturbance coordinator” who will be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and institute reasonable measures as warranted to correct the problem (e.g., to ensure that the measures above are implemented). A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.</p>	
Impact NOI-2: Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.	Less than Significant	n/a	
Impact NOI-3: Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	Less than Significant	n/a	
Impact NOI-4: Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	Potentially Significant	Mitigation Measure NOI-1: Reduce Construction-Related Noise (above).	Less than Significant
Impact NOI-C-1: Would the project contribute to cumulatively considerable noise impacts.	Less than Significant	n/a	
Population and Housing			
Impact PH-1: Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for	Less than Significant	n/a	

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
example, through extension of roads or other infrastructure).			
Impact PH-C-1: Would the project result in a cumulatively considerable contribution to cumulative impacts related to population and housing.	No Impact	n/a	
Public Services			
Impact PS-1: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection and police protection.	Less than Significant	n/a	
Impact PS-C-1: Would the project result in a cumulatively considerable contribution to cumulative impacts related to public services.	Less than Significant	n/a	
Recreation			
Impact REC-C-1: Would the project result in a cumulatively considerable impact to recreational resources.	No Impact	n/a	
Transportation/Traffic			
Impact TRA-1: Would the project 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	Less than Significant	n/a	

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.			
Impact TRA-2: Would the project substantially increase hazards due to a design feature or incompatible use.	Less than Significant	n/a	
Impact TRA-3: Would the project result in inadequate emergency access.	Less than Significant	n/a	
Impact TRA-4: Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	Potentially Significant	Mitigation Measure TR-1: Avoid or Temporarily Relocate Affected Bus Stop The District shall coordinate with the Humboldt Transit Authority Redwood Transit System prior to construction of project components that may affect the multi-line bus stop near the junction of Highways 96 and 299. The District shall notify the Humboldt Transit Authority as to the timing, location, and duration of construction activities near the multi-line bus stop. Work shall be completed at a time that would avoid direct impacts to the multi-line bus stop, to the extent feasible. If construction activities cannot avoid impacts to the bus stop, then the District shall coordinate with the Humboldt Transit Authority to temporarily relocate a bus stop in an acceptable location that minimizes effects to bus users and meets safety requirements.	Less than Significant
Impact TRA-C-1: Would the project result in cumulatively considerable contributions to cumulative impacts related to transportation.	Less than Significant	n/a	
Utilities and Service Systems			
Impact UTI-1: Would the project exceed the wastewater treatment requirements of the applicable Regional Water Quality Control Board.	Less than Significant	n/a	
Impact UTI-2: Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing	Less than Significant	n/a	

Impact	Project Significance	Mitigation Measure	After-Mitigation Significance
facilities, the construction of which could cause significant environmental effects.			
Impact UTI-3: Would the project 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.	Less than Significant	n/a	
Impact UTI-4: Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.	Less than Significant	n/a	
Impact UTI-5: Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	Less than Significant	n/a	
Impact UTI-6: Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.	Less than Significant	n/a	
Impact UTI-7: Would the project comply with federal, state, and local statutes and regulations related to solid waste.	Less than Significant	n/a	
Impact UTI-C-1: Would the project result in a cumulatively considerable contribution to cumulative impacts related to utilities.	Less than Significant	n/a	

This page intentionally left blank

2. Project Description

2.1 WCCSD Background and Project Location

The unincorporated community of Willow Creek is located in Humboldt County approximately 320 miles north of San Francisco and 45 miles northeast of Eureka, California (Figure 2-1). Willow Creek's business center (downtown) is located along State Highway 299 on both sides of the junction with State Highway 96. Willow Creek is situated along the Trinity River, which is part of the Klamath River Basin. The Willow Creek Community Services District (WCCSD or District) service area or district boundary is shown on Figure 2-1 and primarily consists of properties along State Highways 299 and 96. The District currently provides potable water service to this service area and also provides park services, recreation facilities, and street lighting. The WCCSD operates Camp Kimtu campground and beach area, Veteran's Park, Creekside Park, and the Community Commons area at the China Flat Museum. The District also maintains the downtown corridor and public restrooms at the park facilities.

2.2 Wastewater Sewered Area

The majority of the properties within the WCCSD service area are rural properties with onsite septic systems. Available land and reserve leachfields are generally sufficient for the majority of these properties. The exception to this is the downtown core, consisting of the properties along Highway 299, near the intersection of Highway 96. This area is relatively densely populated and is located on a bedrock terrace above the Trinity River, with shallow soil depths that limit the amount of treatment available for on-site septic systems. Many of the existing septic systems and leachfields in this area are also old and failing. With limited developable land area, development has occurred over the top of many of them, leading to buildings constructed over septic tanks and development over leachfields. With this development, there is no longer any suitable reserve leachfield area within Willow Creek's downtown area. Further development or expansion of businesses within this area is precluded by the lack of sufficient wastewater facilities. Therefore, the District's Wastewater Committee recommended, and the District Board approved, an initial collection system/sewer service area be constructed to serve the downtown core. The District further divided the service area into two sub-service areas referred to as the Core and Expanded service areas. However, the Core and Expanded service areas have since been combined into what is now called the "Sewered Area" (Figure 2-2).

The proposed Sewered Area includes all properties within the Willow Creek downtown area that are primarily zoned commercial, and a few residential properties, which are located such that only minimal additional collection piping, all by gravity flow, would be needed to service these properties. The proposed Sewered Area consists of 103 total connections (some parcels would have more than one service connection), 57 of which are commercial and 46 are residential.

2.3 Project Description

2.3.1 Overall Concept

The proposed project includes the following elements (Figure 2-3):

- Collection system: Gravity wastewater collection system with up to two pump stations (based on final design)
- Treatment system: A recirculating gravel filter treatment system located at the Mill/Stockel site
- Disposal: Subsurface disposal (leachfield) at the Mill/Stockel site
- Solids treatment: Onsite dewatering using a polymer injection system and a roll-off style dewatering container

Raw wastewater would ultimately be conveyed via an 8-inch gravity main to the Mill/Stockel Site. It is anticipated that this gravity main would be installed to the treatment facilities using directional drilling through a hill between Sewered Area and the treatment facilities. The final design phase would include geotechnical investigations to confirm the feasibility and cost effectiveness of directional drilling. If the subsurface conditions show that this method would not be feasible or cost effective, then up to two pump stations and standard force main would be constructed to convey the raw wastewater to the treatment plant. A recirculating gravel filter system would be used for treatment, and a leachfield would be used for subsurface infiltration disposal of the treated water. Solids accumulated during the treatment process would be dewatered onsite and hauled to either an appropriately permitted landfill or composting operation via truck (five cubic yard). The project is described in more detail below.

2.3.2 Project Design

2.3.2.1 Collection System

The collection system would be laid out to include connections to residences and businesses in the proposed Sewered Area. The majority of the system would be designed to be gravity, but up to two pump stations could be necessary in two locations based on final design to convey wastewater to the Mill/Stockel Site. Per the project's Preliminary Engineering Report (GHD 2014), the design average dry weather flow for this project is 38,000 gallons per day (gpd). This flow would account for both current conditions and future expansion. A peaking factor of three was used to arrive at a peak wet weather flow (highest hourly flow during the wet season) of 114,000 gpd.

A SewerCAD model was developed to assist in the design process. This model was used to determine feasible pipe slopes, trench depths, flow rates, velocities for individual sections of the system, and pumping requirements. Preliminary designs were generated to determine physical constraints and assist in cost estimating. Pressure pipes in the system would all be sized to be 4 inches. This would allow for the conveyance of 3-inch solids, while minimizing head loss in the pipes, thereby reducing pumping requirements. All main line gravity pipes in the system would be sized to be at least 6 inches to adequately convey solids and prevent clogging within the system. Laterals were assumed to be 4 inches in diameter. In sizing gravity pipes, important considerations included velocity and capacity. With low contributing flows, pipes should be smaller so that adequate velocities are achieved to convey solids. However, gravity pipes also need to be large enough to have the capacity to convey peak wet weather flows. Most gravity pipes in the proposed system were sized to be 6 inches, while those that would have higher flows were sized to be 8 inches (see Figure 2-3 for pipe size information).

Six-inch gravity pipes in the collection system were designed to have a 0.5 percent minimum slope. At this slope, the velocity in 6-inch PVC would be 2 feet per second (ft/s), the assumed minimum self-cleaning velocity when flowing half-full. A 6-inch gravity pipe at a 0.5 percent slope would convey approximately 258,000 gpd when flowing full, and approximately 129,000 gpd when flowing half-full. The

current estimated contributing daily flow for the area under analysis is a peak wet weather flow of 114,000 gpd.

System flows would be the highest during times when the pump station is pumping. For this reason, and to allow for future expansion, all gravity pipes in the system downstream of the pump station were sized to be 8 inches. Eight-inch pipes in the collection system were designed to have a 0.5 percent minimum slope. At this slope, the velocity in 8-inch PVC would be over 2 ft/s when flowing half-full. An 8-inch gravity pipe at a 0.5 percent slope would convey approximately 556,000 gpd when flowing full, and approximately 278,000 gpd when flowing half-full.

2.3.2.2 Pumping Station

Due to the topography in the area (Figure 2-4), one pump station would be necessary in the proposed system to convey wastewater to the Mill/Stockel Site, although a second potential pump station, based on final design calculations. This pump station PS-1 would be constructed near the intersection of Highway 96 and Mayfair Street (ground elevation of 575 feet). PS-1 would pump through a force main from this intersection up-gradient to the intersection of Mayfair Street and Country Club Drive (ground elevation of 584 feet). This section of pressure pipe would be approximately 575 feet long. PS-1 could potentially be eliminated by using gravity pipe in this segment. However, to install gravity pipe in this section, the trench would be deep. Using a 0.5 percent slope over the required distance, the trench would reach a depth of over 15 feet. This would also require the connecting trenches to and from this point to be excavated down to similar depths. For these reasons, it was deemed more feasible and cost effective to include PS-1 for the proposed project.

The contributing flow to this point in the system would be approximately 10,000 gpd (30,000 gpd during peak wet weather conditions). The pump was sized so that it would provide a minimum velocity of 2.5 ft/s; this would allow for the conveyance of solids while minimizing head loss, thereby minimizing pumping requirements. To achieve a velocity of 2.5 ft/s, this pump would have to push at a rate of approximately 100 gpm (144,000 gpd) through a 4-inch force main. This provides for sufficient pump capacity to handle peak wet weather flows. PS-1 would need to deliver approximately 17 feet of total dynamic head (TDH) at the desired flow rate to convey wastewater to the end of the pressure section. This TDH figure includes head loss due to both elevation and major friction losses.

2.3.2.3 Treatment and Disposal System

The wastewater in the system would be conveyed to the Mill/Stockel Site. At this location, the raw wastewater would be treated with a recirculating gravel filter system. The effluent from this system would then be released to a leachfield for infiltration disposal.

The treatment facility (or treatment plant) would have a small control building – concrete masonry unit (CMU) with a wood truss roof and asphalt shingles. The treatment infrastructure itself would be a below grade concrete septic tank, with two approximately 80- x 80-foot gravel filters on either side. These would have approximately 3-foot concrete walls around the perimeter with gravel on the inside.

Recirculating Gravel Filter Treatment System

A recirculating gravel filter system is a non-proprietary system that utilizes a community septic tank for primary treatment. A general flow diagram of this process is illustrated in Image 2-1 below. After the initial settling of solids, the pre-treated wastewater flows into a recirculation tank. From there it is pumped and is applied uniformly to the gravel filters in small doses. This alternately rests and loads the gravel media, resulting in the development of a microbiological film. As the wastewater percolates downward through

the gravel filter, it comes into contact with this film, which oxidizes the waste by using it as a food source. The filter is designed for a low loading rate such that a minimum amount of solids slough off the media. The recirculation process is designed so that the wastewater flows through the media and retained in the recirculation tank for five cycles. This alternates the flow from being aerobic to anoxic/anaerobic, which results in very good rates of ammonia and nitrate removal. It is understood through conversations with the North Coast Regional Water Quality Control Board (NCRWQCB) that the nitrate concentration levels of the leachfield percolate would be required to be less than 10.0 mg/L at the point where the leachfield percolate reaches groundwater. The filtered wastewater – or filtrate – is contained at the bottom of the filter by an impermeable liner, and the filtrate is collected by an underdrain. The filtrate is then piped back to the recirculation tank, from which the flow is split back to the beginning of the septic tank where it is mixed with the raw sewage for denitrification. When the recirculating tank becomes full, a control valve closes and the remaining flow from the filter is discharged as effluent. This process has been implemented in the community of Weott, and the community of Miranda has a similar facility that uses sand as the media instead of pea gravel.

The septic tank and recirculation tank were each sized at 38,000 gallons. The detention time for a septic tank of this size would be 24 hours for the average daily flow and eight hours under peak wet weather flow conditions. The recirculation dosing frequency would be five minutes out of every 30 minutes. Biochemical oxygen demand (BOD) and total suspended solids (TSS) concentrations in the raw sewage influent are each assumed to be 300 mg/L. The gravel filters would be approximately 3 feet deep, with 2-inch distribution piping spaced at 3 feet on center. The design loading rate for the filters is 3 gpd/sq. ft. Using a design flow of 38,000 gpd, the required gravel filter area is about 12,700 square feet. Two 80- by 80-foot gravel filters would have an area of 12,800 square feet. Accounting for the treatment system itself, as well as area for a control building, office space, lab space, and additional components such as vacuum trucks, etc., the total required footprint area for this system would be approximately 45,000 square feet (slightly over an acre).

An operations building would be constructed and would be approximately 20 feet by 24 feet, single story and approximately 16 feet high. The operations building would house all the operations equipment, a restroom and storage.

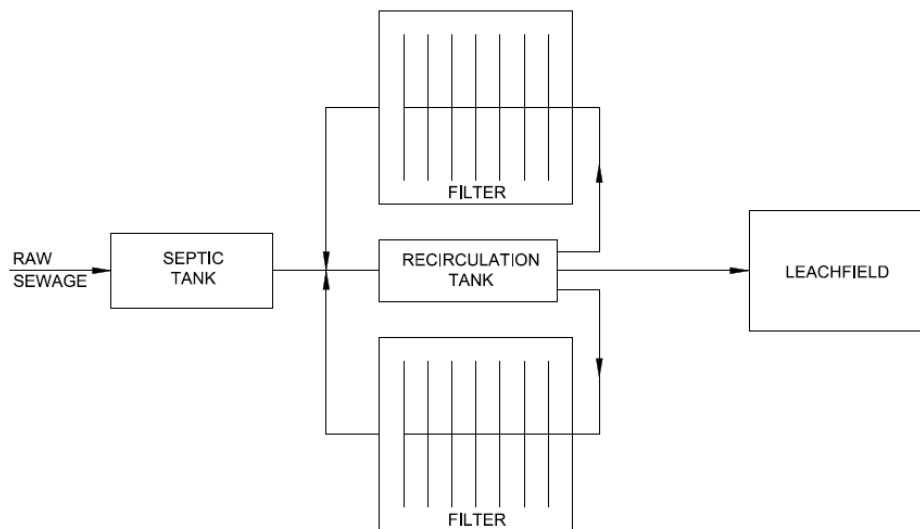


Image 2-1: General flow diagram of recirculating gravel filter system

Leachfield Disposal

Effluent from the recirculating gravel filter system would be pumped to a community leachfield that would also be located at the Mill/Stockel Site. The leachfield has been designed to handle 38,000 gpd (average dry weather flow). As described in the Soils Report in Appendix B of the Preliminary Engineering Report (GHD 2014), a clean water loading rate of 1.5 gpd per square foot of trench surface area has been used for design. A trench size of 18 inches wide, and 6 feet deep, with 1 foot of cover, results in 11.5 square feet of exposed trench area per linear foot of trench. The necessary length of leachfield trench is therefore 2,200 feet. The leachfield would be split into six areas, each with 370 linear feet of trench. Assuming the trenches are 10 feet on center, this requires an area of approximately 28,000 square feet (SF). To allow for a reserve area, as will be required by the NCRWQCB, the amount of land acquired for the leachfield should be doubled to 56,000 SF or 1.3 acres.

The leachfield trench would consist of a gravity flow system with a 3-inch main line and 1.5 inch perforated pipe 1 foot below the ground surface with 5 feet of pea gravel below the perforated pipe for infiltration purposes. There would be both groundwater monitoring wells and leachfield monitoring wells.

2.3.2.4 Solids Dewatering and Disposal

During the treatment process, solids would be separated from the liquids in the system's septic tank. The solids handling and disposal processes must be performed pursuant to 40 CFR Part 503. The solids handling process would consist of dewatering the solids using a batch process onsite and then hauling the dried solids, or "cake," to either a landfill or composting operation holding the appropriate licensure. In this process, the septic tank solids are dewatered and not stabilized further while on site. The District would periodically need to have the dried solids hauled to either a landfill or composting operation for disposal. Currently, the landfill in Anderson, California, is the nearest landfill that would accept these solids. There are also composting facilities in the Humboldt Bay area that could potentially accept these solids.

The following infrastructure would be required to integrate a dewatering system:

- Polymer injection system and mixing tank
- Sludge dewatering container
- Covered concrete holding area for dried solids
- Sludge pumps

Important design considerations include how often the septic tank would need to be pumped, how much material would need to be pumped, and how much material would need to be hauled away for disposal at an approved landfill. The following assumptions were made in determining these design elements:

- Average daily flow of 38,000 gpd
- Influent TSS concentration of 220 mg/L
- 70percent of the incoming TSS would settle out in the septic tank
- Over time, there would be 50 percent solids decomposition in the septic tank
- The sludge pumped out of the tank would contain 2 percent solids
- Sludge would be dewatered to 15-20 percent solids in a roll-off style container
- The treated solids would be stored on a concrete pad with a removable cover that would allow additional drying to occur. Further, the pad would allow the District to accumulate enough solids to fill a truck prior to disposal
- The analysis assumes that the only solids that would be handled by this system are those that are generated by the District's wastewater treatment system. However, the District could use this system to also treat septage from private septic systems in the surrounding community not connected to the project.

2.4 Construction Activities

The proposed project includes construction of the following three major components: 1) the collection/conveyance system, 2) the wastewater treatment plant, and 3) the effluent disposal leach field. The construction activities associated with each of these project components would be as follows.

2.4.1 Collection System

The construction of the collection system would generally consist of trenching within existing roadways, laying pipe in the trench, backfilling, compacting, and repaving over the trench.

Trenches would typically be 5 feet deep or less and 3 feet wide. Digging would be done with an excavator. The excavated asphalt and soil [that is unsuitable for backfill] would be hauled offsite in 10-yard dump trucks. A skid-steer would likely be used for backfilling purposes. A backhoe would be used for potholing utilities, other various digging activities, and hauling/moving backfill material. A front loader may also be used for transporting backfill material. A jumping jack, plate compactor, or similar equipment would be used for compacting backfill.

As noted above, a section of the conveyance pipe from the collection system to the treatment plant may be constructed with horizontal directional drilling (HDD) techniques. For this construction, high-density polyethylene (HDPE) pipe would be welded together and placed in a designated pipe lay-down area.

Small entry and exit pits (approximately 2 feet deep, 2 feet wide, and 5 feet long) would be excavated. A drill rig would be set up, a pilot bore would be drilled, and the pilot hole would then be reamed out to size by completing multiple passes with a cutting head. After the hole is reamed, the HDPE pipe would be pulled through.

After the collection system piping is installed and trenches are backfilled, paving would occur over the areas of paving that have been removed from excavation. A grinder would be used to grind out the section to be paved, and the spoils from this activity would be hauled offsite. A paver would be used to pave the trench section, and rollers would be used to compact the pavement that is placed.

2.4.2 Wastewater Treatment Plant

Construction of the treatment plant would generally consist of site grading, excavation, septic tank construction, recirculation tank construction, and installation of the gravel filters. Approximately 1,520 cubic yards (CY) of material would be excavated and hauled off for the construction of the septic tank, recirculation tank, and gravel filters. For construction of the septic tank, recirculation tank, and gravel filter walls, the forms would be installed for the concrete pour. An estimated 490 CY of concrete would be required to construct the tanks and gravel filter walls.

The gravel filters would be constructed with compacted Class II aggregate base on the bottom. Above this would be a liner to prevent water from percolating at this location. Above the liner would be a layer of $\frac{3}{4}$ " minus gravel, approximately 3 feet of pea gravel, and another foot of $\frac{3}{4}$ " minus gravel at the top. The filters would contain an estimated total of 850 CY of $\frac{3}{4}$ " minus gravel and 1,430 CY of pea gravel.

A solids handling area would also be constructed at the treatment site. This would include a separately manufactured dewatering sludge container, as well as a concrete holding area for storing the dried solids until there is enough to haul away to an approved landfill.

2.4.3 Leachfield

Effluent from the recirculating gravel filter system would be pumped to an adjacent community leach field. The leach field would consist of approximately 2,200 feet of trench, with trenches being 18 inches wide and 6 feet deep. Construction of the leach field would include excavating the trenches, backfilling with 5 feet of pea gravel, installing 1.5-inch perforated pipe, and replacing the top foot of each trench with topsoil.

2.5 Construction Schedule and Duration

Construction of the proposed project would take approximately nine months and is anticipated to start in March, 2017 and end in November, 2017. The anticipated construction duration for the major work components is as follows:

- Trenching – approximately eight weeks
- Laterals/Connections – approximately four weeks
- Pump Station – approximately two weeks
- Paving – approximately two weeks
- Directional Drilling – approximately three weeks

- Treatment Plant Grading/Excavation – approximately two weeks
- Tanks – approximately three weeks
- Recirculating Gravel Filters – approximately three weeks
- Leach Field – approximately three weeks
- Operations Building – approximately four weeks
- Interior of Operations Building – approximately four weeks.

2.6 Site Access and Staging

Access to the project area is primarily from Highway 299 from the east and west and Highway 96 from the north. The staging area would be located within the sewage treatment facility and infiltration disposal areas (leachfield) as shown in Figure 2-3. The APN for the staging area is 522-201-001. All staging and construction parking would occur within this parcel. Construction parking (approximately one to two vehicles) could also occur for short periods in the collection area near active construction areas.

2.7 Energy Usage

2.7.1 Collection System

The only energy consumption due to the operation of the collection system would be from the operation of the pump station at Highway 96 and Mayfair Street. A 3 horsepower (hp) pump would be required at this location to pump the wastewater up to the intersection of Mayfair Street and Country Club Road. To estimate the energy usage for this analysis, it is assumed that a submersible wet well pump typically used for this purpose would be designed to operate for approximately 2,000 hours annually. A 3 hp pump that pumps for 2,000 hours would use approximately 4,500 kilowatt-hours (kWh) of energy annually.

2.7.2 Treatment System

Energy consumption related to daily operation of the treatment system would be from pumps and blowers at the plant. A recirculating gravel filter system of the size proposed for this project would likely require an average of approximately 15 hp for daily operations. Using energy at this rate, the plant would use approximately 98,000 kWh annually.

2.8 Maintenance and Monitoring

2.8.1 Collection System

Maintenance of the collection system would include periodic line inspection and repairs, cleaning out blockages, and repair of areas where substantial infiltration is occurring. Maintenance would also include routine inspection of the pump station. Pump station maintenance consists of routine inspections, cleaning of the wet well, and replacement of worn out parts.

2.8.2 Treatment System

A wastewater discharge permit (WDP) from the North Coast Regional Water Quality Control Board (NCRWQCB) would be required for the proposed project. Under the WDP, there would be several required monitoring operations in place to protect the quality of the groundwater and surface water in the vicinity of the disposal field. Requirements would be in place for both influent and effluent monitoring. Influent parameters to be monitored would include flowrate, biochemical oxygen demand (BOD), and total suspended solids (TSS). Effluent parameters to be monitored would include the following: flowrate, BOD, TSS, pH, settleable solids, total coliforms, copper, cyanide, dichlorobromomethane, methyl tertiary butyl ether (MtBE), acute toxicity, chronic toxicity, and priority pollutants identified as Compound Nos. 1 – 126 by the California Toxics Rule at 40 CFR 131.38 (b) (1).

2.8.3 Solids Handling

Solids would accumulate in the septic tank, which would periodically need to be removed and put through a dewatering system. Sludge would be injected with polymer and mixed in a tank, and then placed into a sludge dewatering container. Dried solids would be moved from the dewatering container to a covered concrete holding area and periodically hauled offsite. See Section 2.3.2.4 (Solids Dewatering and Disposal) for permitting requirements.

2.8.4 Disposal System

Groundwater monitoring wells would be installed in the disposal field to ensure that effluent from the treatment system is not having negative impacts on the surrounding groundwater and surface water. Measurements of depth to groundwater and nitrate levels would be periodically taken to verify that requirements given in the WDP (issued by the NCRWQCB) are being met by the system.

2.9 Land Use and Zoning

Most of the land within the project Sewered Area has a General Plan land use designation of Commercial Services (CS) and a zoning designation of Community Commercial (C-2). North of the Sewered Area, several parcels are zoned Heavy Industrial. There are also small areas zoned for residential single family and agricultural uses. Public and Quasi-Public uses, such as the proposed project, as defined in Sections 314-58-1 and 314-85.1, respectively, are permitted in any zone without the necessity of first obtaining a Use Permit.

2.10 Permits and Approvals

This EIR is intended to provide the information and environmental analysis necessary to assist public agency decision-makers in considering all of the approvals necessary for the planning, development, construction, operation, and maintenance of the proposed project.

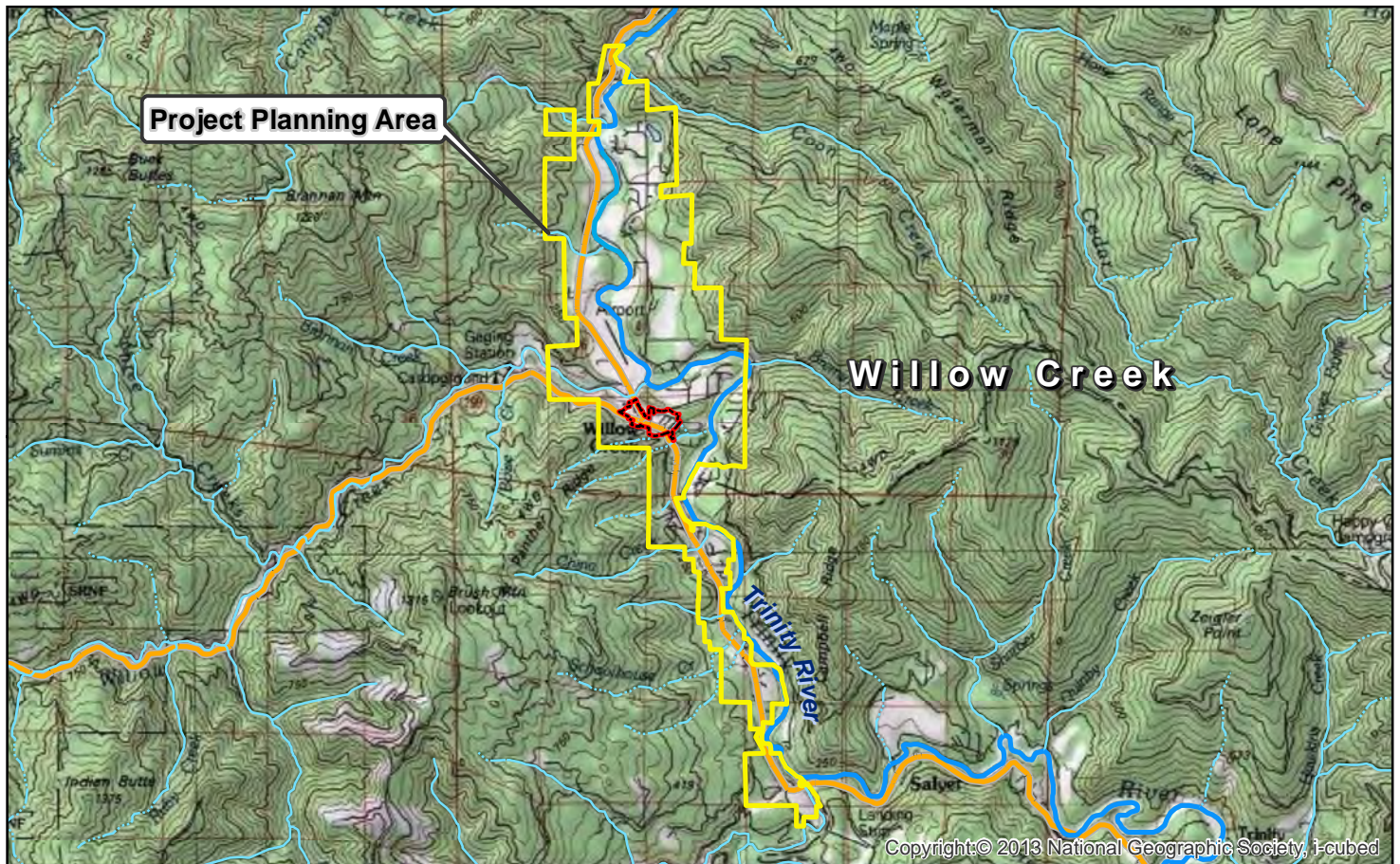
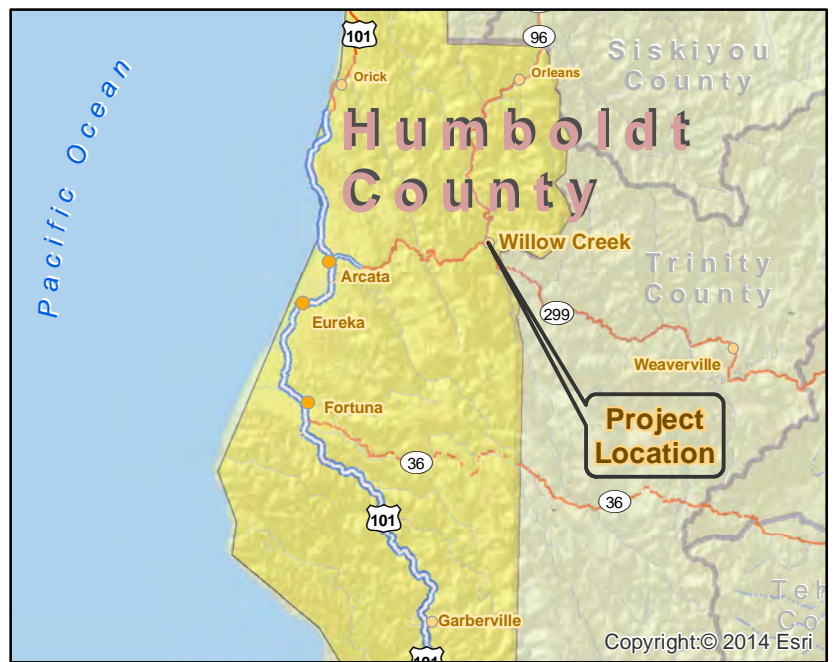
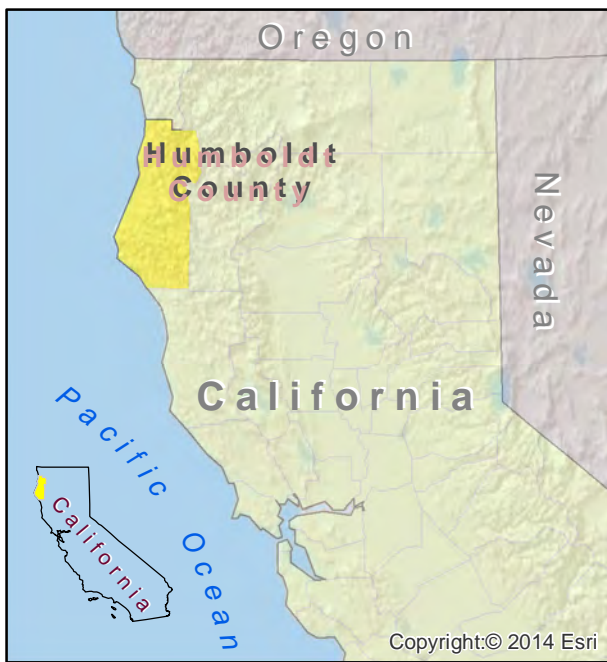
WCCSD is the lead agency for the project under CEQA. As lead agency, the District is responsible for reviewing and certifying the adequacy of this EIR. The District will use the EIR in its decisions concerning the proposed project.

Approvals that would be required include:

- Encroachment Permit – Humboldt County
- Encroachment Permit – Caltrans
- National Pollutant Discharge Elimination System, Report of Waste Discharge – North Coast Regional Water Quality Control Board
- Authority to Construct/Permit to Operate – North Coast Unified Air Quality Management District
- Additional approvals may be required from other agencies such as the California Department of Fish and Wildlife (CDFW), and the U.S. Army Corps of Engineers (USACE).

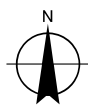
2.11 References

GHD, 2014, Willow Creek Community Services District Downtown Wastewater Development Preliminary Engineering Report - Wastewater Facilities, prepared for Willow Creek Community Services District, November.



- | | | |
|--|--|---|
|  U.S. Highway |  Sewered Area |  Perennial Stream |
|  California State Highway |  WCCSD Boundary |  Intermittent Stream |
| | |  Trinity River |

Paper Size 8.5" x 11" (ANSI A)
 0 0.5 1 1.5 2 2.5 3
 Miles
 Map Projection: Mercator Auxiliary Sphere
 Horizontal Datum: WGS 1984
 Grid: WGS 1984 Web Mercator Auxiliary Sphere



Willow Creek Community Services District
 Downtown Wastewater Development Project
 Environmental Impact Report

Job Number 8410746.05
 Revision A
 Date 01 Dec 2014

Project Planning Area

Figure 2-1

718 Third Street Eureka CA 95501 USA T 707 443 8326 F 707 444 8330 E eureka@ghd.com W www.ghd.com

G:\12057 WillowCreekCSD\8410746 WCCSD-WWTP Planning\08-GIS\Map\Figures\EIR\F2-1_LocationMap.mxd

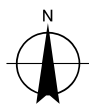
© 2013. While every care has been taken to prepare this map, GHD and the Willow Creek Community Services District make no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and cannot accept liability and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred by any party as a result of the map being inaccurate, incomplete or unsuitable in any way and for any reason.

Data source: ESRI Street Map. Created by: jrousseau

This page intentionally left blank



Paper Size ANSI A
 0 100 200 300 400 500
 Feet
 Map Projection: Lambert Conformal Conic
 Horizontal Datum: North American 1983
 Grid: NAD 1983 StatePlane California 1 FIPS 0401 Feet



Service Area
 Sewered Area

Willow Creek Community Services District HQ



Willow Creek Community Services District
 Downtown Wastewater Development Project
 Environmental Impact Report

Job Number	8410746.05
Revision	A
Date	08 Dec 2014

Sewered Area Boundary

Figure 2-2

\\ghdnet\ghd\US\Eureka\Projects\Legacy\Projects\12057 WillowCreekCSD\8410746 WCCSD-WWTP Planning\08-GIS\Maps\Figures\EIR\F2-2_Sewered_Area.mxd

180 Lonsdale Street Melbourne VIC 3000 Australia T 61 3 8687 8000 F 61 3 8687 8111 E mel@mail@ghd.com W www.ghd.com

© 2014. While every care has been taken to prepare this map, GHD and Willow Creek Community Services District make no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and cannot accept liability and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred by any party as a result of the map being inaccurate, incomplete or unsuitable in any way and for any reason.

Data source: Aerial NAIP 2012, 1 m resolution. Created by:jrousseau

This page intentionally left blank



Paper Size ANSI A
0 100 200 300 400 500
Feet
Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



Willow Creek Community Services District
Downtown Wastewater Development Project
Notice of Preparation

Job Number | 8410746.05
Revision | A
Date | 15 Dec 2014

Collection, Treatment, and
Disposal System

Figure 2-3

\\ghdnet\ghd\US\Eureka\Projects\Legacy\Projects\12057 WillowCreekCSD\8410746 WCCSD-WWTP Planning\08-GIS\Maps\Figures\EIR\F2-3_CollectionTreatmentSystem.mxd

180 Lonsdale Street Melbourne VIC 3000 Australia T 61 3 8687 8000 F 61 3 8687 8111 E melmail@ghd.com W www.ghd.com

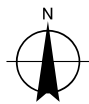
© 2014. While every care has been taken to prepare this map, GHD and Willow Creek Community Services District make no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and cannot accept liability and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred by any party as a result of the map being inaccurate, incomplete or unsuitable in any way and for any reason.

Data source: Data Custodian, Data Set Name/Title, Version/Date. Created by:jrousseau

This page intentionally left blank



Paper Size ANSI A
 0 100 200 300 400 500
 Feet
 Map Projection: Lambert Conformal Conic
 Horizontal Datum: North American 1983
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



Sewered Area
● Willow Creek Community Services District HQ

~ 10ft Contours
~ 50ft Contours



Willow Creek Community Services District
 Downtown Wastewater Development Project
 Environmental Impact Report

Job Number	8410746.05
Revision	A
Date	15 Dec 2014

Potential Service Area
 Topography

Figure 2-4

\\ghdnet\ghd\US\Eureka\Projects\Legacy\Projects\12057 WillowCreekCSD\8410746 WCCSD-WWTP Planning\08-GIS\Maps\Figures\EIR\F2-4_Topography.mxd

180 Lonsdale Street Melbourne VIC 3000 Australia T 61 3 8687 8000 F 61 3 8687 8111 E mel@mail@ghd.com W www.ghd.com

© 2013. While every care has been taken to prepare this map, GHD and Willow Creek Community Services District make no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and cannot accept liability and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred by any party as a result of the map being inaccurate, incomplete or unsuitable in any way and for any reason.

Data source: Aerial NAIP 2012, 1 m resolution. Created by:jrousseau

This page intentionally left blank

3. Environmental Setting, Impacts, and Mitigation Measures

Scope of Analysis

This Draft EIR analyzes the potential effects of the proposed project on the environment under the applicable environmental resource topics listed in the CEQA Initial Study Checklist (Appendix G of the CEQA Guidelines).

Each environmental resource area potentially impacted by the project is addressed in the following sections numbered as follows:

- 3.1 Aesthetics
- 3.2 Agriculture and Forestry Resources
- 3.3 Air Quality
- 3.4 Biological Resources
- 3.5 Cultural Resources
- 3.6 Geology and Soils
- 3.7 Greenhouse Gas Emissions
- 3.8 Hazards and Hazardous Materials
- 3.8 Hydrology and Water Quality
- 3.10 Land Use and Planning
- 3.11 Mineral Resources
- 3.12 Noise
- 3.13 Population and Housing
- 3.14 Public Services
- 3.15 Recreation
- 3.16 Transportation/Traffic
- 3.17 Utilities and Service Systems

Each section of Chapter 3 contains the following elements:

Existing Setting. This subsection presents a description of the existing physical environmental conditions in the project area with respect to each resource area at an appropriate level of detail to understand the impact analysis. It describes existing conditions and provides a baseline by which to compare the potential impacts of the proposed project.

Regulatory Framework. This subsection provides a brief discussion of federal, State, and local regulations and policies that are relevant to the resource.

Significance Thresholds. This subsection provides the significance thresholds for evaluation of environmental impacts. The significance thresholds are based on State CEQA Guidelines Appendix G.

Methodology. The methodology subsection discusses the approach to the analysis.

Impacts and Mitigation Measures. This subsection evaluates the potential for the project to significantly affect the physical environment described in the setting. Potential impacts are identified and characterized, and where feasible, mitigation measures are identified to avoid or reduce significant impacts to a less-than-significant level.

Cumulative Impacts and Mitigation Measures. Cumulative impacts are discussed in each environmental resource section following the description of the project-level impacts and mitigation measures. The cumulative impact analysis is based on the same setting, regulatory framework, and significance thresholds presented in each resource topic section. Additional mitigation measures are identified if the analysis determines that the project's contribution to an adverse cumulative impact would be cumulatively considerable and, therefore, significant.

Significance Determinations

The significance thresholds for each environmental resource topic are presented in each section of Chapter 3. For the impact analyses, the following categories are used to identify impact significance:

No Impact. This determination is made if a resource is absent or if a resource exists within the project area, but there is no potential that the project could affect the resource.

Less-than-Significant Impact. This determination applies if there is a potential for some limited impact on a resource, but the impact is not significant under the significance threshold.

Less-than-Significant Impact after Mitigation Incorporated. This determination applies if there is the potential for a substantial adverse effect in accordance with the significance threshold, but mitigation is available to reduce the impact to a less-than-significant level.

Significant and Unavoidable Impact. This determination applies to impacts that are significant, and mitigation has been incorporated, but the mitigation does not reduce the impact to less-than-significant and there appears to be no additional feasible mitigation available to reduce the impact to a less-than-significant level.

Environmental impacts are numbered throughout this EIR, using the section number followed by sequentially numbered impacts. Mitigation measures are numbered to correspond to the impact numbers; for example, Mitigation Measure 3.1-1 would address Aesthetics Impact 3.1-1. Where more than one mitigation measure is included to mitigate one impact the sequence of "a", "b," etc. is added (for example: Mitigation Measure 3.1-1a and Mitigation Measure 3.1-1b both apply to Impact 3.1-1).

Cumulative Impacts

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

The cumulative impact analysis for each environmental resource topic is described in the appropriate subsections of this Chapter, following the description of direct project impacts and identified mitigation measures.

Approach to Cumulative Impact Analysis

Two approaches to the definition of the cumulative project scenario are discussed in CEQA Guidelines Section 15130(b). The first approach is a list of past, present, and probable future projects producing related or cumulative impacts. The second approach is a summary of projections contained in an adopted local, regional or statewide plan, such as a general plan or related planning document, or in an adopted or certified environmental document, which describes or evaluates conditions contributing to cumulative effects.

An information request (IR-15-008) was submitted to the County of Humboldt for a list of any past, present, and reasonably foreseeable future projects within and near the project area. The county provided a list of all projects within five miles of Willow Creek. The projects on that list included small scale uses and land use entitlements with negligible cumulative effects such as a minor subdivision to divide two parcels, a Special Permit for a second dwelling unit, a lot line adjustment, a Conditional Use Permit for the construction of four individual motel units, a General Plan Amendment and Zone Reclassification, etc. Therefore, there are no projects in the project vicinity to add to the cumulative projects list.

This page intentionally left blank

3.1 Aesthetics

This section evaluates the potential impacts related to aesthetics and visual resources during construction and operation of the project. To provide the basis for this evaluation, the Setting section describes the existing scenic resources and visual character for the project area and the Regulatory Framework section describes the regulatory background that applies to the project. The impacts and mitigation measures section establishes the thresholds of significance, evaluates aesthetic and visual impacts, and identifies the significance of impacts. Where appropriate, mitigation measures are presented to reduce impacts to less than significant.

3.1.1 Setting

The descriptions of existing conditions are accompanied by photographs of representative views taken during a site visit on November 24, 2014. The locations and viewpoints of each image are shown in Figure 3.1-1.

3.1.1.1 Visual Character of the Project Sites

The dominant visual character in the Sewered Area consists of commercial and residential uses. Uses along Highway 299 and 96 within the downtown core are primarily commercial with residential uses along the other streets in the Sewered Area. Highway 299 provides access to the project sites and runs in a predominantly east-west direction connecting the communities of Arcata to the west and Weaverville and Redding to the east. Highway 299 has one lane in each direction in the project vicinity with parking on both sides. Highway 96 runs north of Willow Creek connecting Willow Creek to the community of Hoopa. Highway 96 has one lane in each direction in the project vicinity with limited shoulder.

The views for both eastbound and westbound travellers on Highway 299 as they approach the project area include primarily commercial uses throughout the downtown core. Highway 299 throughout the downtown core includes a landscape strip with street trees on both sides. Views throughout the Sewered Area consist of commercial and residential uses. Views along Country Club Drive heading north to the proposed sewage treatment facility consist of vegetation including a variety of shrubs, trees and grasses.

3.1.1.2 Visual Character of the Surrounding Area

The dominant visual character in the immediate project area consists of forest land in all directions. The Trinity River, which obtained Wild and Scenic River status in 1974, provides a prominent visual feature in the project area, as does Willow Creek (a tributary to the Trinity River). The views for both eastbound and westbound travellers on Highway 299 as they approach the project area includes primarily coniferous forest coming from the west and a mix commercial and residential uses and coniferous forest from the east.

3.1.2 Regulatory Framework

3.1.2.1 Federal

There are no federal regulations that apply to the proposed project related to visual resources in Humboldt County.

3.1.2.2 State

California Scenic Highway Program

The California Department of Transportation (Caltrans) manages the California Scenic Highway Program to preserve and protect scenic highway corridors from change which would diminish the aesthetic value of lands adjacent to highways. No State-designated scenic highways are located in the project vicinity (Caltrans 2011). Highway 299 and 96 are both Eligible State Scenic Highways though not officially designated.

Site Photographs



Image 3.1-1: Looking east from Willow Glen Road (proposed 6" line)



Image 3.1-2: Looking northeast from intersection of Hwy. 96 and Mayfair St. (proposed pump station)



Image 3.1-3: Looking northeast from parking lot off Country Club Drive (directional drilling location)



Image 3.1-4: Looking south from Roth Road (proposed 6" line)



Image 3.1-5: Looking west along Highway 299 from Roth Road (proposed 6" line)



Image 3.1-6: Looking east along Highway 299 (proposed 6" line)



Image 3.1-7: Looking east at the proposed infiltration disposal site (Mill Site)



Image 3.1-8: Looking east at the alternative infiltration disposal site (Stockel Site)

3.1.2.3 *Regional and Local*

Humboldt County General Plan

Scenic Highway Element

The Scenic Highway Element attempts to accomplish numerous goals, including to establish a system of scenic routes and to conserve scenic views observable from the routes. While Highways 299 and 96 are not officially designated State scenic highways, they are eligible for designation under the State Scenic Highways Program for their entire lengths within the county. The nearest designated State scenic highway in Humboldt County is north of Orick on Highway 101.

Willow Creek Community Action Plan

The Willow Creek Community Action Plan (Willow Creek CAP) is a strategic planning document and implementation guide that sets community improvement goals and identifies the necessary steps for achieving those goals. The 2003 CAP reviewed the goals and accomplishments of the 1997 CAP, identified next steps, and was used as a springboard for community improvement projects and future community planning processes. Section VI (Community Ideas and Opportunities) of the CAP includes a Downtown Landscaping/Beautification Program to slow traffic through town, encourage travelers to visit Willow Creek and enhance the quality of life offered to residents.

3.1.3 Evaluation Criteria and Significance Thresholds

The project would cause a significant impact related to aesthetic resources, as defined by the CEQA Guidelines (Appendix G), if it would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light or glare which would adversely affect day or night-time views in the area.

3.1.3.1 *Areas of No Project Impact*

As explained below, construction and operation of the project would not result in impacts related to one of the significance criteria identified in Appendix G of the current CEQA Guidelines as mentioned above. The following significance criterion is not discussed further in the impact analysis, for the following reasons:

- **Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a State scenic highway.** There are no officially designated State scenic highways within Humboldt County (Caltrans 2014). Highways 299 and 96 within Humboldt County are eligible, but not officially designated. Therefore, the significance criterion related to substantially damaging scenic resources within a State scenic highway is not applicable to the proposed project.

3.1.4 Methodology

The visual impact analysis below evaluates the physical changes that would occur at the project sites using the standards of quality and consistency typically used for a visual assessment. The potential for changes to views from visually sensitive land uses also is evaluated. The visual impacts are compared against the thresholds of significance discussed above.

3.1.5 Impacts and Mitigation Measures

Impact: AES-1: Would the project have a substantial adverse effect on a scenic vista.

Construction

A scenic vista is generally defined as a view that has remarkable scenery or a broad or outstanding view of the natural landscape. These conditions do exist in the project area with views of the surrounding mountains, Trinity River, and numerous creeks (Willow Creek, Victor Creek, Bloody Nose Creek). Views of the surrounding mountains may be temporarily altered by construction equipment, staging and moving of materials, and workers during active construction in any given area of the collection system. The changes to the views would be minor, temporary, and would generally be visible only to the public in the immediate vicinity of the active portion of construction of the collection system. Upon completion of the project, there would not be any readily discernible alterations to the visual nature of the Sewered Area or

any obstructions to scenic vistas. All roadways would be repaved and striped consistent with their existing conditions.

Treatment Facility

The sewage treatment facility and pump station(s) (located primarily underground) would be the only portion of the project readily visible after construction. The sewage treatment facility would be located north of the downtown core area of Willow Creek, approximately 0.3 mile north of the intersection of Highway 299 and Country Club Drive off Flower McNeil Road (APN 522-01-001) (Figure 2-3). The treatment facility would have a small control building, constructed out of CMU with a wood truss roof and asphalt shingles. The treatment infrastructure itself would be a below grade concrete septic tank, with two approximately 80- by 80-foot gravel filters on either side. These would have approximately three foot concrete walls around the perimeter with gravel on the inside. The treatment facility could be visible to drivers on Country Club Drive; however, the trees and vegetation along this roadway do partially block views to the north and the treatment facility would be substantially lower in elevation than Country Club Drive. Therefore, development of the treatment facility would not have a substantial adverse effect on a scenic vista. The impact to scenic vistas would be less than significant.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

Impact: **AES-2: Would the project substantially degrade the existing visual character or quality of the site and its surroundings.**

As noted under Impact AES-1 above, construction impacts would be minor and temporary and upon completion there would not be any readily discernible alterations to the visual nature of the Sewered Area. The project area is surrounded by forest land in all directions at varying distances from the Sewered Area. The treatment facility and infiltration disposal sites would be located north of downtown Willow Creek as shown in Figure 2-3. At buildout, the treatment facility would include the following facilities: a small control building, a below grade concrete septic tank, with two approximately 80- by 80-foot gravel filters on either side. The aesthetic characteristics of the proposed facility would be public facility in nature, similar to the water treatment plant that was completed in 2007 (see Image 9).

The conversion of the site to a treatment facility would alter the site's visual character by introducing one building, two approximately 80- by 80-foot gravel filters, paved areas, fencing, and intermittent automobile traffic when in operation. However, as noted above under Impact AES-1, the treatment facility could be visible to drivers on Country Club Drive; however, the trees and vegetation along this roadway partially block views to the north and the treatment facility would be substantially lower in elevation than Country Club Drive. Views of the treatment facility would be shielded by trees, vegetation, and topography, from off-site views. The impact to the visual character of the site and surroundings would not be substantial and therefore would be less than significant.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

Impact: **AES-3: Would the project create a new source of substantial light or glare which would adversely affect day or night-time views in the area.**

Under current conditions, the Sewered Area includes lighting typical of commercial and residential areas including street lighting and lighting of buildings and parking lots. No lighting is anticipated during construction of the collection system as construction work would take place during the day. Lighting at the

treatment facility would include security lighting, pole lighting, and lighting on the exterior façade of the control building (manually operated). Lighting would be appropriately shielded and directed downward to avoid glare and light trespass and would not exceed a 60 watt light bulb level of illumination. The treatment facility is not expected to produce any perceived glare because neither the building itself nor the gravel filters would include any reflective surfaces, and any exterior lighting would be shielded and downcast. Light poles would not be taller than necessary to provide appropriate lighting for security and safety. Additionally, the two residences to the east that are within a couple hundred feet of the proposed treatment facility are partially shielded by trees and vegetation, and lighting associated with the proposed treatment facility would not be any more intense than residential lighting in the vicinity. Thus, the project would not produce significant new light or glare-related impacts and the impact would be less than significant.

Mitigation: No mitigation is necessary.

Significance: Less than significant.



Image 3.1-9: View of water treatment plant

3.1.6 Cumulative Impacts

Impact: **AES-C-1: Would the project result in a cumulatively considerable contribution to a cumulative impact related to aesthetic resources.**

The impacts to scenic vistas, visual character, and light/glare are not cumulatively considerable, because there are no cumulative projects located in the same viewshed as the project. Additionally, impacts to a scenic vista or visual character would be dependent upon project- and site-specific variables, including proximity to visually sensitive receptors, the visual sensitivity of the respective development sites, and the operational characteristics of each development site. The potential impacts of other projects on a scenic vista or visual character of a development site and its surroundings would be evaluated on a project-by-project basis. It is assumed that cumulative development would progress in accordance with the Zoning/Development Code of the respective jurisdiction. Each project would be analyzed in order to ensure the construction-related Zoning/Development Code restrictions are consistently upheld. Cumulative impacts to a scenic vista or visual character would not be cumulatively considerable.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

3.1.7 References

California Department of Transportation (Caltrans), 2011, California Scenic Highway Program, Accessed website on November 13, 2014 at: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm.



This page is intentionally left blank

3.2 Agriculture and Forestry Resources

This section evaluates the potential impacts related to agriculture and forest resources with implementation of the project. The Setting section describes the existing environmental setting as it relates to agricultural and forest resources. The Regulatory Framework section describes the applicable regulations at the federal, State and local level. The Impacts and Mitigation Measures section establishes the thresholds of significance, evaluates potential impacts to agriculture and forest resources, and identifies the significance of impacts. Where appropriate, mitigation is presented to reduce impacts to less-than-significant levels.

3.2.1 Setting

3.2.1.1 Agricultural Resources

The land within the Sewered Area and proposed sewage treatment facility and leach field areas are not in agricultural production nor are they under Williamson Act contract. The collection area is primarily designated Commercial Services and the treatment plant site is designated Industrial General (see Section 3.10 – Land Use and Planning, for more detailed information on land use and zoning). Outside the project area, however, agriculture is an important land resource in the Willow Creek area. Sun Valley Floral Farms operates 40 acres of nursery production, and there are other agricultural resources in the area including row crops and fruit and nut crops. Humboldt County has not yet been mapped by the California Department of Conservation's (DOC's) Farmland Mapping and Monitoring Program (FMMP); therefore, lands in the county have not been rated as to its agricultural importance.

3.2.1.2 Forestry Resources

There are 1.2 million acres of private forested land and 0.3 million acres of public forested land in Humboldt County, covering more than 80 percent of the county's land area. Roughly 990,000 acres are zoned Timber Production Zone (TPZ), two-thirds of which are held by timber companies. Dedicated timber management of these lands and unique growing conditions have consistently made Humboldt County the State's leading timber producer, contributing more than 20 percent of the State's total since 2000. (Humboldt County 2012)

The Sewered Area and proposed sewage treatment facility and leach field areas are not in forest land and are not in a TPZ. The majority of the Sewered Area is developed and zoned Commercial Services and Community Commercial.

3.2.2 Regulatory Framework

3.2.2.1 Federal

There are no federal regulations associated with agriculture and forest resources that are applicable to the proposed project or the Sewered Area.

3.2.2.2 State

Forest Land

Forest land is defined in the California Public Resources Code as land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for

management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits (Public Resources Code Section 12220(g)).

California Timberland Productivity Act of 1982

Under the Timberland Productivity Act, "timberland" means privately owned land, or land acquired for State forest purposes, which is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, and which is capable of growing an average annual volume of wood fiber of at least 15 cubic feet per acre.

TPZ means an area that has been zoned pursuant to Government Code section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses. With respect to the general plans of cities and counties, "timberland preserve zone" means "timberland production zone."

Z'berg-Nejedly Forest Practice Act of 1973

Under the Forest Practice Act, "timberland" means land, other than land owned by the federal government or land designated as experimental forest land, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the board on a district basis after consultation with the district committees and others.

The Forest Practice Act was enacted in 1973 to ensure that logging is done in a manner that will preserve and protect fish, wildlife, forests and streams. Additional rules enacted by the State Board of Forestry and Fire Protection are also enforced to protect these resources. The California Department of Forestry and Fire Protection (CAL FIRE) ensures that private landowners abide by these laws when harvesting trees. Although there are specific exemptions in some cases, compliance with the Forest Practice Act and Board rules apply to all commercial harvesting operations for landowners of small parcels, to ranchers owning hundreds of acres, and large timber companies with thousands of acres.

3.2.2.3 *Regional and Local*

Humboldt County General Plan

The Humboldt County General Plan includes a number of goals and policies related to agricultural and forest resources, however, none of them are directly applicable to the proposed project, as the project area contains nor agricultural or forested lands. The Willow Creek CAP (see Section 3.1.2.3) also does not have any directly applicable goals or policies to the proposed project.

3.2.3 Evaluation Criteria and Significance Thresholds

The project would cause a significant impact related to agricultural and forest resources, as defined by the CEQA Guidelines (Appendix G), if it would:

- Convert prime farmland, unique farmland, or farmland of statewide importance, as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use;
- Conflict with existing zoning for agricultural use or a Williamson Act contract;

- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g));
- Result in the loss of forest land or conversion of forest land to non-forest use; or
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

3.2.4 Methodology

Potential impacts related to agricultural and forest resources are based on an examination of the proposed project's consistency with the policies of Humboldt County's General Plan, land use and zoning, and the conversion of agricultural or forest land to non-agricultural or non-forest use.

3.2.5 Impacts and Mitigation Measures

Impact: AG-1: Would the project convert Important Farmland to non-agricultural use, or conflict with agricultural zoning or a Williamson Act contract, or result in the loss of agricultural or forest land.

The project sites are not located on prime farmland, unique farmland, or farmland of statewide importance as the DOC has not yet mapped Humboldt County in the FMMP. The project sites are located in primarily commercial and residential zoned areas (C-2, S-1-B-4), the unclassified zone (right-of-way), in addition to lands zoned Heavy Industrial north of Country Club Road. Therefore, the significance criterion related to converting agricultural land to non-agricultural uses is not applicable to the proposed project and is not discussed further.

According to Humboldt County's GIS Portal, the project sites are not located on land zoned for agricultural uses, or under Williamson Act contract or forest or timberland (Humboldt County 2014). Therefore, the significance criterion related to conflicting with existing zoning for agricultural use or a Williamson Act contract, or land zoned for forest land or timberland is not applicable to the proposed project and is not discussed further.

Mitigation: No mitigation is necessary.

Significance: No impact.

3.2.6 Cumulative Impacts

Impact: AG-C-1: Would the project result in cumulatively considerable contribution to a significant cumulative impact related to forest resources.

As noted in Section 3.0, there are no cumulative projects in the project vicinity with which to compare the proposed project. The proposed project would not result in the loss of agricultural, forest or timberland and would not convert agricultural, forest or timberland to another use. Therefore, the proposed project would not contribute to a cumulative impact on agricultural, forest, or timberland resources in Humboldt County.

Mitigation: No mitigation is necessary.

Significance: No impact.

3.2.7 References

Humboldt County, 2003, *Willow Creek Community Action Plan*, prepared by Humboldt County Department of Community Development Services, July.

Humboldt County, 2012, Humboldt County General Plan Update Planning Commission Approved Draft, March 19.

Humboldt County, 2014, Humboldt GIS Portal, website accessed at:
<http://gis.co.humboldt.ca.us/Freeance/Client/PublicAccess1/index.html?appconfig=podgis4>

3.3 Air Quality

This section evaluates the potential impacts related to air quality during construction and operation of the project. To provide the basis for this evaluation, the Setting section describes existing air quality conditions in the project area and the Regulatory Framework section describes the regulatory background that applies to the project. The impacts and mitigation measures section establishes the thresholds of significance, evaluates potential air quality impacts, and identifies the significance of impacts. Where appropriate, mitigation is presented to reduce impacts to less-than-significant levels.

3.3.1 Setting

3.3.1.1 *Existing Topography and Climate*

The proposed project would be located in Humboldt County in the North Coast Air Basin (Air Basin). The county covers 3,570 square miles and is bounded on the west by the Pacific Ocean and on the east by mountains that separate the North Coast and Sacramento River Air Basins. The county's east-west width varies from approximately 15 to 46 miles, and its north-south length is approximately 101 miles. Moving inland, the Coast Range Mountains rise quickly and dominate most of the county's interior and include the Eel, Van Duzen, Mattole, and Mad River drainages in the central and southern areas, and the Redwood Creek drainage in the northwest. In the furthest northeastern reaches of the county, the Klamath Mountains represent some of the higher elevations, with steep slopes that feed the Klamath and Trinity rivers. The proposed project is located approximately 41 miles east of Arcata and 101 miles west of Redding.

In general, the climate of northern coastal California is characterized by cool summers and mild winters with frequent fog and significant amounts of rain. In coastal areas, the ocean helps to moderate temperatures year-round. In the project area, summers are hotter and drier and the winters colder and more snowy. At higher elevations in inland areas, it is cooler in the summers and snowier in the winter. The average annual rainfall in the county ranges from 38 inches in Eureka to 141 inches in Honeydew. Approximately 90 percent of the annual precipitation falls between October and April. The dry season is between May and September. (Humboldt County 2012)

Average temperatures on the coast in Eureka range from the low 60s in the summer to the low 40s during the winter. Average temperatures at inland locations, such as in Willow Creek, range from the 90s to the 30s. On the coast, summer fog is common when inland temperatures rise. (Humboldt County 2012)

Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to drive the movement and dispersal of air pollutants. Winds control the rate and dispersion of local pollutant emissions. In the North Coast Air Basin, dominant winds exhibit a seasonal pattern, especially in coastal areas. In the summer months, strong north to northwesterly winds are common during the winter, storms from the South Pacific increase the percentage of days that winds are from southerly quadrants. Wind direction often assumes a daily pattern in the river canyons that empty into the Pacific. In the morning hours, cool air from higher elevations flows down the valleys while later in the day as the lower elevation air heats up this pattern is reversed and the airflow heads up the canyon. These airflows are often quite strong. Offshore and onshore flows are also common along the coast and are associated with pressure systems in the area. Onshore flows frequently bring foggy cool weather to the coast, while offshore flows often blow fog away from the coast and bring sunny warm days. (Humboldt County 2012)

3.3.1.2 *Ambient Air Quality*

Criteria Air Pollutants

Air pollutant levels are typically described in terms of “concentrations,” which refers to the amount of pollutant material per volumetric unit of air. Concentrations are measured in parts per million (ppm) or micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). The federal and California Clean Air Acts (CAA) have established ambient air quality standards for different pollutants. National Ambient Air Quality Standards (NAAQS) were established by the federal Clean Air Act for six criteria pollutants including carbon monoxide (CO), ozone, nitrogen dioxide (NO_2), small particulate matter (PM_{10} and $\text{PM}_{2.5}$), sulfur dioxide and lead. Pollutants regulated under the California Clean Air Act are similar to those regulated under the federal Clean Air Act. In many cases, the California Ambient Air Quality Standards (CAAQS) are more stringent than the corresponding federal standards. Ambient air quality standards are shown in Table 3.3-1.

Areas that do not violate ambient air quality standards are considered to be “in attainment” of federal and/or State standard. Areas that violate the ambient air quality standards are considered to be in “non-attainment.” Violations of ambient air quality standards are based on air pollutant monitoring data and are judged for each air pollutant, using the most recent three years of monitoring data.

The Air Basin as a whole does not meet State ambient air quality standards for PM_{10} . The Air Basin is considered in attainment or unclassified for all other criteria air pollutants (CARB 2014b). Unclassified typically means the region does not have concentrations of that pollutant that exceed ambient air quality standards.

Table 3.3-1 Relevant California and National Ambient Air Quality Standards and Attainment Status

Pollutant	Averaging Time	California Standards	California Attainment Status	National Standards	National Attainment Status
Ozone	8-hour	0.070 ppm (137 $\mu\text{g}/\text{m}^3$)	Attainment	0.075 ppm (147 $\mu\text{g}/\text{m}^3$)	Unclassified/ Attainment
	1-hour	0.09 ppm (180 $\mu\text{g}/\text{m}^3$)	Attainment	None	NA
Carbon Monoxide	1-hour	20 ppm (23 mg/m^3)	Attainment	35 ppm (40 mg/m^3)	Unclassified/ Attainment
	8-hour	9.0 ppm (10 mg/m^3)	Attainment	9 ppm (10 mg/m^3)	
Nitrogen Dioxide	1-hour	0.18 ppm (339 $\mu\text{g}/\text{m}^3$)	Attainment	0.100 ppm (188 $\mu\text{g}/\text{m}^3$)	Unclassified/ Attainment
	Annual	0.030 ppm (57 $\mu\text{g}/\text{m}^3$)	Status not reported	0.053 ppm (100 $\mu\text{g}/\text{m}^3$)	
Sulfur Dioxide	1-hour	0.25 ppm (655 $\mu\text{g}/\text{m}^3$)	Attainment	0.075 ppm (196 $\mu\text{g}/\text{m}^3$)	Unclassified

Pollutant	Averaging Time	California Standards	California Attainment Status	National Standards	National Attainment Status
	24-hour	0.04 ppm (105 µg/m ³)	Attainment	0.14 ppm (365 µg/m ³)	
	Annual	None	NA	0.03 ppm (56 µg/m ³)	
Respirable Particulate Matter (PM ₁₀)	24-hour	50 µg/m ³	Nonattainment	150 µg/m ³	Unclassified
	Annual	20 µg/m ³	Nonattainment	None	
Fine Particulate Matter (PM _{2.5})	24-hour	None	NA	35 µg/m ³	Unclassified/ Attainment
	Annual	12 µg/m ³	Attainment	12 µg/m ³	

Source: CARB (2014a)

Notes:

ppm = parts per million

mg/m³ = milligrams per cubic meterµg/m³ = micrograms per cubic meter

Among the pollutants that may be generated by the proposed project, those of greatest concern are emitted by motor vehicles, primarily during construction. These pollutants include small particulate matter, PM_{2.5} and PM₁₀. Other pollutants that are less problematic to the Air Basin include Carbon Monoxide (CO), and ozone precursors such as nitrogen oxides (NO_x) and reactive organic gases (ROG). Criteria air pollutants with federal and State ambient air quality standards are described below.

Particulate Matter

Particulate matter is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials such as metals, soot, soil, and dust. Particles 10 microns or less in diameter are defined as respirable particulate matter or PM₁₀. Particles 2.5 microns or less in diameter, or PM_{2.5}, are also respirable and can contribute significantly to regional haze and reduction of visibility. Inhalable particulates come from smoke, dust, aerosols, and metallic oxides. Although particulates are found naturally in the air, most particulate matter found in the vicinity of the project site is emitted either directly or indirectly by motor vehicles, industry, construction, agricultural activities, and wind erosion of disturbed areas. Most PM_{2.5} is comprised of combustion products such as smoke. Extended exposure to PM can increase the risk of chronic respiratory disease (BAAQMD 2011). PM exposure is also associated with increased risk of premature deaths, especially in the elderly and people with pre-existing cardiopulmonary disease.

Ozone

Ground-level ozone is the principal component of smog. Ozone is not directly emitted into the atmosphere, but instead forms through a photochemical reaction of ROG and nitrogen oxides, which are known as ozone precursors. Ozone levels are highest from late spring through autumn when precursor emissions are high and meteorological conditions are warm and stagnant. Motor vehicles create the majority of ROG and NO_x emissions in California. Exposure to levels of ozone above current ambient air

quality standards can lead to human health effects such as lung inflammation and tissue damage and impaired lung functioning. Ozone exposure is also associated with symptoms such as coughing, chest tightness, shortness of breath, and the worsening of asthma symptoms (BAAQMD 2011). The greatest risk for harmful health effects belongs to outdoor workers, athletes, children, and others who spend greater amounts of time outdoors during periods of high ozone levels.

Carbon Monoxide

CO is a public health concern because it combines readily with hemoglobin in the bloodstream, reducing the amount of oxygen transported by blood. State and federal CO standards have been set for both 1-hour and 8-hour averaging times. The State 1-hour standard is 20 ppm by volume, and the federal 1-hour standard is 35 ppm. Both the State and federal standards are 9 ppm for the 8-hour averaging period. Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter, when light winds combine with ground-level temperature inversions (typically between evening and early morning). These conditions result in reduced dispersion of vehicle emissions. Also, motor vehicles emit CO at higher rates when air temperatures are low.

Nitrogen Dioxide

NO₂ is an essential ingredient in the formation of ground-level ozone pollution. NO₂ is one of the NO_x emitted from high-temperature combustion processes, such as those occurring in trucks, cars, and power plants. Home heaters and gas stoves also produce NO₂ in indoor settings. Besides causing adverse health effects, NO₂ is responsible for the visibility reducing reddish-brown tinge seen in smoggy air in California. NO₂ is a reactive, oxidizing gas capable of damaging cells lining the respiratory tract. Studies suggest that NO₂ exposure can increase the risk of acute and chronic respiratory disease (BAAQMD 2011). Due to potential health effects at or near the current air quality standard, the California Air Resources Board (CARB) recently revised the State ambient air quality standard for NO₂. The U.S. EPA recently adopted a new 1-hour NO₂ standard of 0.10 ppm.

Sulfur Dioxide

Sulfur dioxide is a colorless gas with a strong odor. It can damage materials through acid deposition. It is produced by the combustion of sulfur-containing fuels, such as oil and coal. Refineries, chemical plants, and pulp mills are the primary industrial sources of sulfur dioxide emissions. Sulfur dioxide concentrations in the Bay Area are well below the ambient standards. Adverse health effects associated with exposure to high levels of sulfur dioxide include irritation of lung tissue, as well as increased risk of acute and chronic respiratory illness (BAAQMD 2011).

Lead

Lead occurs in the atmosphere as particulate matter. It was primarily emitted by gasoline-powered motor vehicles, although the use of lead in fuel has been virtually eliminated. As a result, levels throughout the State have dropped dramatically.

Measured Criteria Air Pollutant Concentrations

Table 3.3-2 summarizes measured air quality data for monitoring stations in the North Coast Air Basin. There are no monitoring stations within close proximity to Willow Creek, therefore, representative air quality data for the entire air basin was used. The table includes data for the years 2011 to 2013 (2013 representing the most recent data available).

As shown in Table 3.3-2, air quality standards were not exceeded for ozone during the 2011 to 2013 period. The 24-hour State average for PM₁₀ was exceeded in 2011 and 2013, and the 24-hour national standard for PM_{2.5} was exceeded in 2011 (exceedances are shown in **bold**). Carbon monoxide, nitrogen dioxide, sulphur dioxide, and lead are not measured in air basin due to the lack of emission sources. These pollutants have been measured at very low levels in the past.

Table 3.3-2 Highest Measured Criteria Air Pollutant Concentrations in North Coast Air Basin

Criteria Air Pollutant	Average Time	Measured Concentration		
		2011	2012	2013
Ozone	8-Hour ¹	0.065 ppm	0.063 ppm	0.063 ppm
	1-Hour ²	0.073 ppm	0.073 ppm	0.069 ppm
Respirable Particulate Matter (PM ₁₀)	24-Hour ³	65.2 µg/m ³	48.9 µg/m ³	66.7 µg/m ³
	Annual ⁴	20.3 µg/m ³	16.8 µg/m ³	19.7 µg/m ³
Fine Particulate Matter (PM _{2.5})	24-Hour ⁵	37.6 µg/m ³	24.4 µg/m ³	28.1 µg/m ³
	Annual ⁶	7.6 µg/m ³	7.1 µg/m ³	6.7 µg/m ³

Source: CARB 2014c

Notes:

¹Highest State 8-Hour Average

²Highest 1-Hour Observation

³High State 24-Hour Average

⁴State Annual Average

⁵High State 24-Hour Average

⁶State Annual Average

Toxic Air Contaminants

Toxic Air Contaminants (TACs) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer or serious illness) and include, but are not limited to, the criteria air pollutants listed above. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level. The identification, regulation, and monitoring of TACs is relatively new compared to that for criteria air pollutants that have established ambient air quality standards. TACs are regulated or evaluated on the basis of risk to human health rather than comparison to an ambient air quality standard or emission-based threshold.

Diesel exhaust is the predominant TAC in urban air with the potential to cause cancer. It is estimated to represent about two-thirds of the cancer risk from TACs (based on the statewide average). According to the CARB, diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as

TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the federal Hazardous Air Pollutants programs. California has adopted a comprehensive diesel risk reduction program. The CARB recently adopted new regulations requiring the retrofit and/or replacement of construction equipment, on-highway diesel trucks, and diesel buses in order to lower PM_{2.5} emissions and reduce statewide cancer risk from diesel exhaust.

3.3.1.3 Sensitive Receptors

Sensitive receptors are people who are particularly susceptible to the adverse effects of air pollution. The CARB has identified the following people who are most likely to be affected by air pollution: children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases. Residential areas are considered sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, day care facilities, hospitals, and schools.

3.3.1.4 Odors

Odors are generally regarded as a nuisance or annoyance rather than a health hazard, although individuals can have a strong physical response to specific odors. Odor intensity depends on the concentration of the substance in the air. The ability to detect odors varies considerably among the population. The detection of odors is subject, where some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. Reactions to odors vary significantly as well.

3.3.2 Regulatory Framework

The federal Clean Air Act of 1977 (CAA) governs air quality in the United States. In addition to being subject to federal requirements, air quality in California is also governed by more stringent regulations under the California Clean Air Act. At the federal level, the U.S. EPA administers the CAA. The California Clean Air Act is administered by the CARB and by the Air Quality Management Districts at the regional and local levels.

3.3.2.1 Federal

Clean Air Act

The U.S. EPA is responsible for enforcing the federal CAA. The U.S. EPA is also responsible for establishing the NAAQS. The NAAQS are required under the CAA and subsequent amendments. The U.S. EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships and certain types of locomotives. The U.S. EPA has jurisdiction over emission sources outside State waters (e.g., beyond the outer continental shelf) and establishes various emission standards, including those for vehicles sold in states other than California (automobiles sold in California must meet the stricter emission standards established by the CARB).

3.3.2.2 State

California Clean Air Act

In California, the CARB, which is part of the California Environmental Protection Agency, is responsible for meeting the State requirements of the federal CAA, administering the California Clean Air Act, and establishing the California Ambient Air Quality Standards (CAAQS). The California Clean Air Act, as

amended in 1992, requires all 35 air districts in the state to endeavor to achieve and maintain the CAAQS. The CARB regulates mobile air pollution sources, such as motor vehicles. It is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. The CARB established passenger vehicle fuel specifications, which became effective in March 1996. It oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county level.

3.3.2.3 *Regional and Local*

North Coast Unified Air Quality Management District

The North Coast Unified Air Quality Management District (Air District), one of 35 air districts in California, has jurisdiction over Humboldt, Del Norte, and Trinity counties. The District's primary responsibility is for controlling air pollution from stationary sources and is committed to achieving and maintaining healthful air quality throughout the tri-county jurisdiction. The Air District has permit authority over most types of stationary emission sources and can require stationary sources to obtain permits, impose emission limits, set fuel or material specifications, or establish operational limits to reduce air emissions. The Air District monitors air quality; enforces local, State and federal air quality regulations for counties within its jurisdiction; inventories and assess the health risks of TACs, and adopts rules that limit pollution.

As noted earlier, the Air District is listed as "attainment" or "unclassified" for all the federal and state ambient air quality standards except for the state 24-hour particulate (PM₁₀) standard. In 1995, the District provided a study to identify the contributors of PM₁₀ which is summarized in the Particulate Matter PM₁₀ Attainment Plan draft report. The Air District's website cautions the reader when referencing the report as it "is not a document that is required in order for the District to come into attainment for the state standard" and that the Air District is planning to update the document.

In general, construction activities that last for less than one year, and use standard quantities and types of construction equipment, are not required to be quantified and are assumed to have a less than significant impact (NCUAQMD 2015).

For operational activities, Rule 110 - New Source Review (NSR) And Prevention of Significant Deterioration establishes the pre-construction review requirements for new and modified stationary sources of air pollution and to provide mechanisms by which authorities to construct for such sources may be granted without interfering with the attainment or maintenance of ambient air quality standards.

Humboldt County General Plan

There are no applicable goals or policies in the Humboldt County General Plan with regard to air quality that would be applicable to the project.

3.3.3 Evaluation Criteria and Significance Thresholds

The project would cause a significant impact related to air quality, as defined by the CEQA Guidelines (Appendix G), if it would:

Conflict with or obstruct implementation of the applicable air quality plan;

Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

Expose sensitive receptors to substantial pollutant concentrations; or

Create objectionable odors affecting a substantial number of people.

The Air District has not formally adopted significance thresholds that would result from projects such as the proposed project. For construction emissions, the Air District has indicated that construction emissions are not considered regionally significant for projects whose construction will be of relatively short duration (less than one year) (NCUAQMD 2015).

3.3.3.1 Areas of No Project Impact

For the reasons presented below, the following evaluation criteria are not applicable to the Project:

- Conflict with or obstruct implementation of the applicable air quality plan. As discussed previously, the Air Basin published the Particulate Matter Attainment Plan in 1995, representing the most current applicable air quality plan for the county. Consistency with this plan is the basis for determining whether the proposed project would conflict with or obstruct implementation of an applicable air quality plan. The plan includes measures dealing with such topics as transportation, land use strategies, open burning, and wood burning stoves. The plan does not include measures that would apply directly to the project. Implementation of the project would not result in impacts related to conflicts with an applicable air quality plan.

3.3.4 Methodology

As noted earlier, the NCUAQMD considers construction activities that last for less than one year to have a less than significant impact (NCUAQMD 2015). Due to the limited nature of the construction activities, construction related emissions are discussed qualitatively. Impacts related to construction dust are considered significant if dust is allowed to leave the site (NCUAQMD 2015). Impacts from operational emissions are discussed in the context of compliance with the air district regulations for new source emissions.

Wastewater treatment facilities can produce odors. Odors are generally considered an annoyance rather than a health hazard. The ability to detect and respond to odors varies considerably among the population and is quite subjective. The receptors nearest the site are residences to the east. Odors are analysed qualitatively, based on the potential for the project to generate objectionable odors off-site and wind patterns in the area.

3.3.5 Impacts and Mitigation Measures

Impact: AQ-1: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Construction

Project construction would last for seven months. The first three months would consist of installation of the collection and conveyance system, followed by four months of construction for the wastewater treatment plant and effluent disposal leach field. With regard to air quality standards, given the short

duration of construction activities (less than one year), impacts to air quality (excluding dust, see discussion below) during construction would be less than significant.

If not managed properly dust generated during construction could leave the project site creating an impact to neighboring properties, including the residences to the east. Potential impacts from dust generated during construction are considered significant.

Operation

Operation of the project would result in emissions from new on-site stationary sources (diesel generator set, etc.) and mobile sources (worker trips). Implementation of the project would add approximately three to six worker trips per week to the site. This small increase to mobile source emission is considered less than significant. The new on-site stationary sources would be regulated by Rule 110 - New Source Review and Prevention of Significant Deterioration. Under Rule 110 the NCUAQMD could not authorize the construction of a new stationary source that exceeded the established standards. If a new source did exceed a standard, either best available control technology would be applied to the source or offsets (reductions from existing emission sources) equal to the exceedance would be required. Because there is existing regulation that would prohibit the construction of new sources in exceedance of standards, or that did not provide offsets, the impact to air quality standards would be less than significant.

Mitigation: Mitigation Measure AQ-1: Implement Dust Control Measures during Construction

To limit dust associated with the construction activity, the District shall include the following recommended best management practices in all construction contract specifications for the proposed Project:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- Adjacent public roads shall be kept clean of loose dirt tracked onto the roadways from the construction sites.
- All vehicle speeds on unpaved areas shall be limited to 15 miles per hour.
- All paving shall be completed as soon as possible after work is finished.

Significance: Less than significant after mitigation.

As noted above, the Air District considers projects with construction activities of less than one year duration and using standard quantities and types of construction equipment to have a less than significant impact. Mitigation Measure AQ-1 would also implement standard BMPs to control dust on construction sites. Therefore, Impact AQ-1 would be reduced to less than significant with implementation of the Mitigation Measure AQ-1.

Impact: AQ-2: Would the project expose sensitive receptors to substantial pollutant concentrations.

Construction

Sensitive receptors are located throughout the construction area of the collection and conveyance system (including the pump station). Installation is anticipated to occur at a rate of approximately 300 feet of pipe per day, thus the construction activities would continually be shifting with exposure at any one location lasting for only a few days during the three months of construction for this part of the project. Because of

the limited construction period and the continuous shifting of the construction activities, exposure of sensitive receptors to substantial pollutant concentrations would be less than significant.

There are three sensitive receptors (residences) located adjacent to the proposed wastewater treatment plant. Two are approximately 50 to 150 feet east of the wastewater treatment plant boundary, and the third is approximately 90 feet to the north of the alternate infiltration disposal site. However, construction for this phase of the project would only last for less than four months. In addition, the construction would shift around the site and not all of the construction phases include diesel emitting activities of note. Construction of the effluent disposal leach field site would last for approximately three weeks. Construction at the wastewater treatment plant, excluding the interior building phase, would last a little over two months. Given the short construction duration, exposure from construction-related emissions is considered less than significant.

Operation

For reasons discussed in more detail under Impact AQ-1, impacts to sensitive receptors from substantial pollutant concentrations are considered less than significant as the project would be regulated under Rule 110 and would have few mobile source emissions.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

Impact: **AQ-3: Would the project create objectionable odors affecting a substantial number of people.**

The treatment and handling of wastewater has the potential to cause odors. Potential odor issues would be a function of the strength of the odors emanating from the project, combined with the distance to the receptors (i.e., residences), number of receptors, and meteorological conditions. The nearest residence is about 50 feet east of the project boundary. Wind direction often assumes a daily pattern in the river canyons that empty into the Pacific. In the morning hours, cool air from higher elevations flows down the valleys while later in the day as the lower elevation air heats up this pattern is reversed and the airflow heads up the canyon. Potential objectionable odors specific to this project could occur during maintenance of the septic tank and solids drying. During maintenance of the septic tank, this normally closed system would be open. Treated solids would be stored on a concrete pad with a removable cover that would allow additional drying to occur. However, both these activities would be infrequent, occurring once per year. Maintenance would last for one day and solids drying would last about one week, with the first day of drying being the most pungent. Also, a dry crust would form as the solids dry, which would help encapsulate odors. Because of the infrequency of these activities that could result in objectionable odors leaving the project site, the impact to odors is considered less than significant.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

3.3.6 Cumulative Impacts

Impact: **AQ-C-1: Would the project contribute to cumulatively considerable air quality impacts.**

Project emissions of criteria air pollutants or their precursors would not make a considerable contribution to cumulative air quality impacts. Air pollution, by nature, is mostly a cumulative impact. The analysis

applicable to construction and operational aspects of a project represent the levels at which a project's individual emissions of criteria pollutants and precursors would result in a cumulatively considerable contribution to the region's air quality conditions.

There are no known existing stationary sources or reasonably foreseeable projects, which would include stationary sources, within 1,000 feet of the project components that could contribute to a cumulative health risk impact. There are no other stationary sources within close proximity to the wastewater treatment site that would contribute to a cumulative health risk impact.

There are no existing or known reasonably foreseeable projects that would contribute to an odor impact.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

3.3.7 References

Bay Area Air Quality Management District (BAAQMD), 2011, *California Environmental Quality Act Air Quality Guidelines*, May.

BAAQMD, 2012, Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0, May.

California Air Resources Board (CARB), 2014a, *Ambient Air Quality Standards*. Accessed website on November 17, 2014 at: <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>.

CARB, 2014b, *Area Designations Maps / State and National*, Accessed website on November 17, 2014, at: <http://www.arb.ca.gov/desig/adm/adm.htm>.

CARB, 2014c, *iADAM*, Accessed website on November 17, 2014 at: <http://www.arb.ca.gov/adam/select8/sc8start.php>.

North Coast Unified Air Quality Management District, 2010, Rule 110 – New Source Review and Prevention of Significant Deterioration, December 9.

North Coast Unified Air Quality Management District, 2015, Personal Communication: Jason Davis, Permitting & Planning Manager, April 17.

Humboldt County, 2012, Humboldt County General Plan Update Planning Commission Approved Draft, March 19.

Humboldt County, 2012, Humboldt County General Plan Update Draft Environmental Impact Report, April 2.

This page intentionally left blank

3.4 Biological Resources

This section evaluates the potential impacts related to biological resources during construction and operation of the project. The setting section describes the existing environmental conditions for biological resources. The regulatory framework section defines the applicable regulations at the federal, state and local level. The impacts and mitigation measures section establishes the thresholds of significance, evaluates potential impacts to biological resources, and identifies the significance of impacts. Where appropriate, mitigation is presented to reduce impacts to less-than-significant levels. Information in this section is based in part on the special-status plant species surveys that were conducted by GHD in April and May, 2015.

3.4.1 Setting

The following sections describe the environmental setting for biological resources within the project area.

3.4.1.1 Regional Setting

The project area is located within the Six Rivers National Forest. The undeveloped project area generally consists of Douglas fir-tan oak forests and riparian areas along the creeks and Trinity River. The climate is typical of inland northern California with warm, dry summers, and cool, wet winters. Annual average precipitation is approximately 51 inches per year. The topography of the Sewered Area is a mildly sloping valley, generally sloping towards Highway 96. The highest point within the collection area is near the intersection of Highway 299 and Roth Road (633 feet elevation), and the lowest point is near the intersection of Highway 96 and Mayfair Street (575 feet elevation).

3.4.1.2 Vegetation Communities

Sensitive biological communities include habitats that fulfill special functions or have special values, such as streams, riparian, or wetlands habitat. These habitats may be protected under federal regulations such as the Clean Water Act; State regulations such as the Porter-Cologne Water Quality Control Act, and the California Department of Fish and Wildlife (CDFW) Streambed Alteration Program; or local ordinances or policies such as county tree ordinances. Other sensitive biological communities include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. CDFW ranks sensitive communities as "threatened" or "very threatened" and keeps records of their occurrences in its California Natural Diversity Database (CNDDDB) [CDFW 2014a]. Sensitive plant communities are also provided in list format by CDFW (2009a). CNDDDB vegetation alliances are ranked 1 through 5 based on NatureServe's (2012) methodology (see Table 3.4-1), with those alliances ranked globally (G) or statewide (S) with status of 1 through 3 considered to be of special concern as well as imperiled (CDFG 2007; CDFW 2014b).

Table 3.4-1 Score Value Ranges for NatureServe Conservation Status Ranks

Calculated Score Value Range	Calculated Status Rank	Status Description	Definition	Threat Rank
score ≤ 1.5	G1, S1	Critically Imperiled	Less than 6 elemental occurrences (EO) or less than 1,000 individuals or less than 2,000 acres	S1.1 = very threatened S1.2 = threatened S1.3 = no current threats known
$1.5 < \text{score} \leq 2.5$	G2, S2	Imperiled	6-20 EOs or 1,000-3,000 individuals or 2,000-10,000 acres	S2.1 = very threatened S2.2 = threatened S2.3 = no current threats known
$2.5 < \text{score} \leq 3.5$	G3, S3	Vulnerable	21-100 EOs or 3,000-10,000 individuals or 10,000-50,000 acres	S3.1 = very threatened S3.2 = threatened S3.3 = no current threats known
$3.5 < \text{score} \leq 4.5$	G4, S4	Apparently Secure	This rank is clearly lower than S3 but factors exist to cause some concern; i.e. there is some threat, or somewhat narrow habitat.	No threat rank
score > 4.5	G5, S5	Secure	Demonstrably secure to ineradicable	No threat rank

Compiled from: CDFG 2007; NatureServe 2012.

The application of global ranking (G#) for determination of sensitive communities is summarized in Table 3.4-1 (NatureServe 2009). Additionally, CDFW high priority natural community elements are reserved for those areas exhibiting high quality occurrences based on criterion such as:

1. Lack of invasive species;
2. No evidence of human caused disturbance such as roads or excessive livestock grazing, or high grade logging; or,
3. Evidence of reproduction present (sprouts, seedlings, adult individuals of reproductive age), and no significant insect or disease damage, etc.

Non-sensitive biological communities are those communities that are not afforded special protection under CEQA, and other state, federal, and local laws, regulations, and ordinances. These non-sensitive communities may, however, provide suitable habitat for some special-status plant or wildlife species and are part of the general existing site conditions.

Site visits were conducted to identify suitable habitats for special-status species, and map sensitive and non-sensitive habitats on April 10 and May 8, 2015. This survey effort determined that no special status species are present in the project area.

Special-Status Plant Species

A special-status plant species survey was conducted on April 10 and May 8, 2015 to determine the presence of federal, State and California Native Plant Society California Rare Plant Ranked (CRPR) plant

species. Appendix C (Botanical Memorandum of Special-Status Plant Species Survey and Mapping for the Downtown Wastewater Development Project, Willow Creek, CA) summarizes the potential for occurrence of special-status plant species that are recorded as occurring in the project area and beyond. Four plant species were determined to have a moderate potential to occur in the project area; however, none were identified and mapped at the in the collection area or sewage treatment facility. Species descriptions for the special-status plant species identified as having a moderate potential to occur in the project area are presented below. The remaining plant species are unlikely or have no potential to occur due to one or more of the following reasons:

- Hydrologic conditions (e.g. marsh habitat, perennial streams) necessary to support some specific special-status plant(s) are not present in the project sites;
- Edaphic (soil) conditions (e.g. serpentine, volcanics) necessary to support some special-status plant(s) are not present in the project sites;
- Topographic positions and landforms (e.g. north-facing, slopes) necessary to support some special-status plant(s) are not present at the project sites;
- Associated vegetation communities (e.g. chaparral, coastal prairie, coastal dune, coastal bluff) necessary to support some special-status plant(s) are not present at the project sites;
- The degree of disturbance and/or presence of extensive highly competitive, non-native plant species (e.g. dense non-native annual grassland);
- The project sites are outside of the known elevation and/or localized distribution of some special-status plant(s) (e.g. coastal, montane); and/or,
- Special-status seasonally-appropriate plant surveys were conducted within the appropriate time of year to identify species with moderate or high potential to occur at the project sites, and determined absence or presence of these species.

The four plant species with a moderate potential to occur in the project area are described below. None of these special-status plant species were identified in the project sites during the protocol-level survey in April and May, 2015.

Coast fawn lily (*Erythronium revolutum*). CRPR 2B.2. Moderate Potential (Not Present). Coast fawn lily is perennial herb usually found along shaded stream banks, river terraces, and in forest gaps of mesic woodlands. This plant is a member of the Liliaceae family that blooms from March to July. This species is located on rocky slopes of redwood forests and mesic evergreen at elevations ranging from 300 to 4600 feet (CNPS 2015, CDFW 2015). Associated species include tanoak (*Notholithocarpus densiflorus* var. *densiflorus*), Douglas fir (*Pseudotsuga menziesii* var. *menziesii*), redwood (*Sequoia sempervirens*), huckleberry (*Vaccinium ovatum*), sword fern (*Polystichum munitum*), and redwood sorrel (*Oxalis oregana*) (CDFW 2015).

There are several CNDDDB (CDFW 2015) records for coast fawn lily near the project area with the closest being approximately 3.5 miles from the project area. The nearest documented occurrence is from May 2005 in Salyer which is southeast of Willow Creek (CDFW 2015). The most recent documented occurrence is from a 2012 Board Camp Mountain population, approximately 12 miles southwest of the project area (CDFW 2015). Coast fawn lily was determined to have a moderate potential to occur at the site due to the presence of suitable habitat and associated species; however, this species was not observed during the protocol-level surveys performed in April 2015.

Small groundcone (*Kopsiopsis hookeri*). CRPR 2B.3. Moderate Potential (Not Present). Small groundcone is a parasitic, perennial rhizomatous herb in the broomrape family (Orobanchaceae) that blooms from April to August. It typically occurs in open woodlands and dry mixed conifer forests and utilizes salal (*Gaultheria shallon*), madrone (*Arbutus menziesii*) and bear-berry (*Arctostaphylos uva-ursi*) as a host plant. It may be found growing within an elevational range of 300-2900 feet (CNPS 2015). Associated species include salal (*Gaultheria shallon*), huckleberry (*Vaccinium ovatum*), tan oak (*Notholithocarpus densiflorus* var. *densiflorus*), Douglas fir (*Pseudotsuga menziesii* var. *menziesii*) and madrone (*Arbutus menziesii*).

There is only one CNDDDB record for small groundcone within the greater vicinity of the project area. The nearest documented occurrence is from 1978 occurrence from Waterman Ridge approximately 3.25 miles northeast of the project area (CNDDDB 2015). Small groundcone was determined to have a moderate potential to occur in the project area due to suitable topography and habitat as well as species present in the project area and close proximity to documented occurrences. This species was not located during the protocol-level surveys performed.

White-flowered rein orchid (*Piperia candida*). CRPR 1B.2. Moderate Potential (Not Present). White-flowered rein orchid is a perennial herb of the Orchid family (Orchidaceae) that flowers from May through September. It is typically found growing in the understory of open to shady sites of lower montane coniferous and mixed-evergreen forests as well as broadleaved upland forests in elevations of 100-4300 feet. Occasionally, white-rein orchid may be found on serpentinite. Common associated species include tan oak (*Notholithocarpus densiflorus* var. *densiflorus*), Douglas fir (*Pseudotsuga menziesii* var. *menziesii*) with an understory species consisting of pathfinder (*Adenocaulon bicolor*), California lady slipper (*Calypso bulbosa*), rattlesnake-plantain (*Goodyera oblongifolia*) and bracken fern (*Pteridium aquilinum* var. *pubescens*).

White-flowered rein orchid is known from several USGS quadrangles in Humboldt County of which five occurrences are within close proximity to the project area (Lord Ellis, Hupa Mountain and Willow Creek USGS quadrangles). The two closest documented occurrences from 2008 and 2011 are located 12 miles west of Willow Creek near Snow Camp (CDNNB 2015). White-flowered rein orchid was determined to have a moderate potential to occur on the parcel due to the presences of associated habitats. This orchid species was not observed during protocol-level rare plant surveys conducted in April 2015.

Coast sidalcea (*Sidalcea oregana* ssp. *eximia*). CRPR 1B.2. Moderate Potential (Not Present). Coast sidalcea is a perennial herbaceous plant from the mallow family (Malvaceae) that blooms from June to August. It typically occurs in wet meadows and seeps, North Coast coniferous forests and lower montane coniferous forests at elevations ranging from 15 to 4400 feet (CFDW 2015 and CNPS 2015). Typical associated species include Douglas fir (*Pseudotsuga menziesii* var. *menziesii*) and Sitka alder (*Alnus viridis* ssp. *sinuata*) with herbaceous species including rattlesnake-plantain (*Goodyera oblongifolia*), arrowleaf ragwort (*Senecio triangularis*), western bistort (*Bistorta bistortoides*) and redstem springbeauty (*Claytonia rubra* ssp. *rubra*).

Coast sidalcea is known from 12 USGS 7.5 minute quadrangles in Humboldt County. There are two documented occurrences near the project area. The first occurrence (2007) is known from Ammon Ridge approximately 11 miles southwest of the project site while the second occurrence (2010) was documented from North Trinity Mountain approximately 14.3 miles northeast of the project site (CFDW 2015, Consortium of California Herbaria 2015). Coast sidalcea has a moderate potential to occur due to the presence of suitable habitat, associated species, elevation and relative locations of documented occurrences. However, coast sidalcea was not located during the protocol-level surveys.

During the special-status plant surveys conducted on April 10 and May 8, 2015, no federal, State, or California Rare Plant Ranked plant species were present. Suitable habitat for the late-blooming coast *sidalcea* (June-August) was not located during these surveys; thus, an additional late-season botanical survey was not conducted.

3.4.1.3 Special-Status Wildlife Species

Appendix E summarizes the special-status wildlife species recorded with potential presence in the greater vicinity of the property, and evaluates the potential for each of the species to occur within the project site. No special-status wildlife species were observed on the property during the site assessment. Two special-status wildlife species have a moderate potential to occur near or within the project site. For the remaining species, the site either lacks potentially suitable habitat or the site may contain potential habitat, but the habitat is disturbed to the extent that the occurrence of special-status species is unlikely. Special-status wildlife species with a moderate potential to occur on the property are discussed below.

Del Norte salamander (*Plethodon elongates*), CDFW Species of Special Concern. Moderate Potential. (Not Present).

Per the International Union for the Conservation of Nature Red List of Threatened Species, "This species can be found in the vicinity of Port Orford, south-western Oregon, south to central Humboldt County, north-western California, USA (Petranka 1998). It occurs from sea level up to about 1,600 m. It is strongly associated with moist talus and rocky substrates in redwood or Douglas fir forests, including in riparian zones. It is usually found among moss-covered rocks, under associated bark and other forest litter, but usually not in seeps or other very wet areas. It is associated with older forests with closed, multi-storied canopy (composed of both conifers and hardwoods), with a cool, moist microclimate, and rocky substrates dominated by cobble-sized fragments, and these conditions may be optimal throughout most of the range (Welsh 1990; Welsh and Lind 1995). In coastal regions it may be common in recently harvested forest areas with no associated older forests (Diller and Wallace 1994). The eggs are laid in concealed terrestrial sites where they develop directly without a larval stage."

This species was not observed during the reconnaissance-level site visit, nor were sign of its presence observed. However, there are several documented occurrences within the Willow Creek Region (Mierzwa 2015), and the property contains Douglas fir forests and other conifer species. For these reasons, Sonoma salamander has a moderate potential to be present.

Sonoma tree vole (*Arborimus pomo*), CDFW Species of Special Concern. Moderate Potential. (Not Present). The Sonoma tree vole is distributed along the northern California coast from Sonoma County to the Oregon border. It occurs in old-growth and other forest types of Douglas fir and other conifers, including stands of Bishop pine. This species breeds year-round, but most often from February through September. Nests are constructed preferentially in tall trees, and may be situated on a whorl of limbs against the trunk, or at the outer limits of branches. Males nest most frequently in a tree nest constructed of needles, or less frequently in shallow burrows at the base of the tree, beneath litter. Females tend to spend most of their lives in trees, constructing large, domed nursery nests of needles at six to 150 feet above the ground. In young second-growth Douglas fir, nests can be placed on broken tops of trees, although old-growth Douglas fir stands likely provide the optimal structural components for nest building. The Sonoma tree vole is a coniferous needle specialist; needles and twigs are gathered primarily during the night, and may be consumed where found or brought to the nest. Needle resin ducts are removed. The remaining part is eaten, and the resin ducts may be used to line the nest cup. This unique nest lining is an identifying characteristic of this species.

This species was not observed during the reconnaissance-level site visit, nor were sign of its presence observed. However, there are several documented occurrences near the Willow Creek area, and the property contains Douglas fir forests and other conifer species. For these reasons, Sonoma tree vole has a moderate to be present.

3.4.2 Regulatory Framework

Many sensitive biological resources in California are protected and/or regulated by federal, State, and local laws and policies. Those most applicable to the proposed project are summarized below.

3.4.2.1 Federal

Federal Endangered Species Act

The federal Endangered Species Act of 1973 (ESA) recognizes that many species of fish, wildlife, and plants are in danger of or threatened with extinction and established a national policy that all federal agencies should work toward conservation of these species. The Secretary of the Interior and the Secretary of Commerce are designated in the act as responsible for identifying endangered and threatened species and their critical habitats, carrying out programs for the conservation of these species, and rendering opinions regarding the impact of proposed federal actions on endangered species. The act also outlines what constitutes unlawful taking, importation, sale, and possession of endangered species and specifies civil and criminal penalties for unlawful activities.

Biological assessments are required under Section 7(c) of the act if listed species or critical habitat may be present in the area affected by any major construction activity conducted by, or subject to issuance of a permit from, a federal agency as defined in Part 404.02. Under Section 7(a)(3) of the act every federal agency is required to consult with the U.S. Fish and Wildlife Service (USFWS) or National Oceanic and Atmospheric Administration (NOAA) Fisheries on a proposed action if the agency determines that its proposed action may affect an endangered or threatened species.

Section 9 of the ESA prohibits the “take” of any fish or wildlife species listed under the ESA as endangered or threatened. Take, as defined by the ESA, means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such action.” However, Section 10 allows for the “incidental take” of endangered and threatened species of wildlife by non-federal entities. Incidental take is defined by the ESA as take that is “incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.” Section 10(a)(2)(A) requires an applicant for an incidental take permit to submit a “conservation plan” that specifies, among other things, the impacts that are likely to result from the taking and the measures the permit applicant will undertake to minimize and mitigate such impacts. Section 10(a)(2)(B) provides statutory criteria that must be satisfied before an incidental take permit can be issued.

Clean Water Act, Section 404

Proposed discharges of dredged or fill material into waters of the U.S. require U.S. Army Corps of Engineers (USACE) authorization under Section 404 of the Clean Water Act (CWA) [33 U.S.C. 1344]. Waters of the U.S. generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), and wetlands (with the exception of isolated wetlands). Wetlands subject to the CWA Section 404 are defined as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a

prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3 [b]; 40 CFR 230.3 [t]). The USACE identifies wetlands using a "multi-parameter approach," which requires positive wetland indicators in three distinct environmental categories: hydrology, soils, and vegetation. According to the USACE Wetlands Delineation Manual, except in certain situations, all three parameters must be satisfied for an area to be considered a jurisdictional wetland. The Regional Supplement to the Corps of Engineers Wetland Delineation Manual (USACE 2010) is also utilized when conducting jurisdictional wetland determinations in areas identified within the boundaries of the arid west.

The CWA also defines the ordinary high water mark as the Section 404 jurisdictional limit in non-tidal waters. When adjacent wetlands are present, the limit of jurisdiction extends to the limit of the wetland. Field indicators of ordinary high water include clear and natural lines on opposite sides of the banks, scouring, sedimentary deposits, drift lines, exposed roots, shelving, destruction of terrestrial vegetation, and the presence of litter or debris. Typically, the width of waters corresponds to the two-year flood event.

Clean Water Act, Section 401

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

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 (50 CFR 10.13) established federal responsibilities for the protection of nearly all species of birds, their eggs and nests. A migratory bird is defined as any species or family of birds that live, reproduce or migrate within or across international borders at some point during their annual life cycle. “Take” is defined in the MBTA “to include by any means or in any manner, any attempt at hunting, pursuing, wounding, killing, possessing or transporting any migratory bird, nest, egg, or part thereof.” Only non-native species such as feral pigeon (*Columba livia*), house sparrow (*Passer domesticus*), and European starling (*Sturnus vulgaris*) are exempt from protection.

3.4.2.2 State

California Environmental Quality Act

Rare or endangered plant or wildlife species are defined in the CEQA Guidelines Section 15380; endangered means that survival and reproduction in the wild are in immediate jeopardy. Rare means that a species is either presently threatened with extinction or that it is likely to become endangered within the foreseeable future. A species of animal or plant shall be presumed to be rare or endangered if it is listed in Sections 670.2 or 670.5, Title 14, California Administrative Code; or Title 50, CFR Sections 17.11 or 17.12 pursuant to the federal ESA as threatened or endangered.

California Endangered Species Act

The California Endangered Species Act (CESA) includes provisions for the protection and management of species listed by the State of California as endangered or threatened or designated as candidates for such listing (Fish and Wildlife Code Sections 2050 through 2085). The act requires consultation “to ensure that any action authorized by a State lead agency is not likely to jeopardize the continued existence of any endangered or threatened species or results in the destruction or adverse modification of habitat essential to the continued existence of the species” (Section 2053). California plants and animals

declared to be endangered or threatened are listed at 14 California Code of Regulations (CCR) 670.2 and 14 CCR 670.5, respectively. The State prohibits the take of protected amphibians (14 CCR 41), protected reptiles (14 CCR 42), and protected furbearers (14 CCR 460). The California Department of Fish and Wildlife (CDFW) may also authorize public agencies through permits or a memorandum of understanding to import, export, take, or possess any endangered species, threatened species, or candidate species for scientific, educational, or management purposes (Section 2081[a]). The CDFW may also authorize, by permit, the take of endangered species, threatened species, and candidate species provided specific conditions are met (Section 2081[b]).

California Fish and Game Code

The CDFW enforces the California Fish and Game Code (CFGF), which provides protection for “fully protected birds” (Section 3511), “fully protected mammals” (Section 4700), “fully protected reptiles and amphibians” (Section 5050), and “fully protected fish” (Section 5515). With the exception of permitted scientific research, no take of any fully protected species is allowed.

Section 3503 of the CFGF prohibits the take, possession, or needless destruction of the nest or eggs of any bird. Subsection 3503.5 specifically prohibits the take, possession, or destruction of any birds in the orders Falconiformes (hawks and eagles) or Strigiformes (owls) and their nests. These provisions, along with the federal MBTA, essentially serve to protect nesting native birds. Non-native species, including European starling and house sparrow, are not afforded protection under the MBTA or CFGF.

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

Clean Water Act and the State of California’s Porter-Cologne Water Quality Control Act

The State Water Resources Control Board (SWRCB) regulates construction storm water discharges through SWRCB Order No. 2003-0017-DWQ, “General Waste Discharge Requirements for Dredge and Fill Discharges that Have Received State Water Quality Certification.” The State’s authority to regulate activities in wetlands and waters resides primarily with the SWRCB, which in turn has authorized the State’s nine RWQCBs, discussed below, to regulate such activities. Under Section 401 of the federal CWA, every applicant for a federal permit for any activity that may result in a discharge to a water body must obtain State Water Quality Certification that the proposed activity will comply with State water quality standards.

In the project area, the North Coast RWQCB (NCRWQCB) regulates construction in waters of the U.S. and waters of the State, including activities in wetlands, under both the CWA and the State of California's Porter-Cologne Water Quality Control Act (California Water Code, Division 7). Under the CWA, the RWQCB has regulatory authority over actions in waters of the U.S., through the issuance of water quality certifications, as required by Section 401 of the CWA, which are issued in conjunction with permits issued by the USACE under Section 404 of the CWA. The RWQCB must certify that a USACE permit action meets State water quality objectives (§401 CWA, and Title 23 CCR 3830, et seq.) before a USACE permit is issued. Activities in areas that are outside of the jurisdiction of the USACE (e.g., isolated wetlands, vernal pool, or stream banks above the ordinary high water mark) are regulated by the nine RWQCBs, under the authority of the Porter-Cologne Act, and may require the issuance of either individual or general waste discharge requirements.

The California Wetlands Conservation Policy (Executive Order W-59-93) establishes a primary objective to "ensure no overall net loss of wetlands acreage and values in California." The RWQCBs implement this policy and the Basin Plan Wetland Fill Policy, both of which require mitigation for wetland impacts.

State Species of Special Concern

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

State Species of Special Concern include those plants and wildlife species that have not been formally listed; yet are proposed or may qualify as endangered or threatened, or are candidates for such listing under the CESA. This affords protection to both listed species and species proposed for listing. In addition, CDFW Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, United States Fish and Wildlife Service (USFWS) Birds of Conservation Concern, and CDFW special-status invertebrates are considered special-status species by CDFW. Plant species included within the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (Inventory) with California Rare Plant Rank (CRPR) of 1 and 2 are also considered special-status plant species. Few Rank 3 or Rank 4 plants meet the definitions of Section 1901 Chapter 10 of the Native Plant Protection Act (see below) or Sections 2062 and 2067 of the CDFG Code that outlines the CESA. There are occasions where CRPR List 3 or 4 species might be considered of special-concern particularly for the type locality of a plant, for populations at the periphery of a species range, or in areas where the taxon is especially uncommon or has sustained heavy losses, or from populations exhibiting unusual morphology.

Also under the jurisdiction of CDFW and considered sensitive are vegetation alliances with a State ("S") ranking of S1 through S3 in the List of Vegetation Alliances (CDFG 2009a). CDFG ranks sensitive communities as "threatened" or "very threatened" and keeps records of their occurrences in its California Natural Diversity Database (CNDDB).

Native Plant Protection Act

The CDFW administers the California Native Plant Protection Act (CNPPA) (Sections 1900–1913 of the CFGC). These sections allow the California Fish and Game Commission to designate rare and endangered plant species and to notify landowners of the presence of such species. Section 1907 of the CFGC allows the Commission to regulate the "taking, possession, propagation, transportation,

exportation, importation, or sale of any endangered or rare native plants.” Section 1908 further directs that “[n]o person shall import into this state, or take, possess, or sell within this state, except as incident to the possession or sale of the real property on which the plant is growing, any native plant, or any part or product thereof, that the Commission determines to be an endangered native plant or rare native plant.”

California Species Preservation Act

The California Species Preservation Act (CFGC Sections 900–903) includes provisions for the protection and enhancement of the birds, mammals, fish, amphibians, and reptiles of California. The administering agency is the CDFW.

3.4.2.3 *Regional and Local*

Humboldt County General Plan

The Humboldt County General Plan includes goals, policies and standards for the protection and preservation of biological resources. Following are the goal and policies most applicable to biological resources for the proposed project.

3430 GOAL

To maximize where feasible, the long-term public and economic benefits from the biological resources within the County by maintaining and restoring fish and wildlife habitats.

3431 POLICIES

- 1. Maintain values of significantly important habitat areas by assuring compatible adjacent land uses, where feasible.*
- 2. Habitats for "critical species" shall be protected under provisions of NEPA and CEQA.*

3.4.3 Evaluation Criteria and Significance Thresholds

The project would cause a significant impact related to biological resources, as defined by the CEQA Guidelines (Appendix G), if it would:

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

Significance Threshold

- Loss or harm of individuals or loss of habitat for listed or candidate species or species of special concern

Loss of individuals or eggs protected under the MBTA.

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

Significance Threshold

- Imperilled Sensitive Habitats (State Rank S1 and S2 per CDFW criteria)
- Removal of more than 1 acre at project site, and
- Removal of more than 1% of regional sensitive habitat.

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

Significance Threshold

Zero (0) acres of fill in wetlands, waters of the U.S., or waters of the State

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

Significance Threshold

Creation of a barrier to movement resulting in loss or harm to native resident or migratory fish or wildlife species

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;

Significance Threshold

Removal or damage that leads to mortality of any tree species protected by a Preservation Policy or Tree Ordinance

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

Significance Threshold

Conflict with an approved habitat conservation plan

3.4.3.1 Areas of No Project Impact

As explained below, the project would not result in impacts related to one of the significance criteria identified in Appendix G of the current California Environmental Quality Act (CEQA) Guidelines. The following significance criteria are not discussed further in the impact analysis, for the following reasons:

- **Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.** The project is consistent with policies 1 and 2 above in that the project has been designed and located such that the project will have the least impact on biological resources as feasible. The project does not conflict with any local policies or ordinances protecting biological resources and is consistent with all applicable policies related to biological resources in the Humboldt County General Plan; therefore, no impact would occur and this topic is not discussed further.
- **Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.** The County of Humboldt does not have an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved conservation plan within which the project would conflict; therefore, no impact would occur and this topic is not discussed further.
- **Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.** The project sites are neither part of a migratory wildlife corridor nor part of a native wildlife nursery. The proposed project would not

interfere with the movement of any fish or wildlife species; therefore, no impact would occur and this topic is not discussed further.

3.4.4 Methodology

Potential impacts resulting from implementation of the project were evaluated based on field reconnaissance surveys performed by qualified biologists in April and May 2015, and a review of the following sources:

- Existing resource maps and aerial photographs of the Sewered Area and greater area
- Database searches for the Willow Creek, Hoopa, Tish Tang Point, Lord-Ellis Summit, Maple Creek, Hupa Mountain, Salyer, Grouse Mountain, and Hennessy Peak USGS 7.5-minute topographic quadrangles, which include the project site and vicinity, from the CNDDDB (CDFW 2014), CNPS Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2014), and USFWS (2014) databases
- Other available literature regarding the natural resources of the area, such as the List of California Vegetation Alliances, Vegetation Classification and Mapping Program (CDFG 2009a), Natural Communities – Background Information on the List of Vegetation Alliances and Associations (CDFW 2014b), and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast* (USACE 2010).

For purposes of this EIR, the analysis considered the following three principal components of the guidelines and criteria outlined above:

- Magnitude of the impact (e.g., substantial/not substantial)
- Uniqueness of the affected resource (rarity)
- Susceptibility of the affected resource to perturbation (sensitivity)

The evaluation of significance must consider the interrelationship of these three components. For example, a relatively small magnitude impact to a state or federally listed species would be considered significant because the species is very rare and is believed to be very susceptible to disturbance. Conversely, a plant community such as California annual grassland is not necessarily rare or sensitive to disturbance. Therefore, a much larger magnitude of impact would be required to result in a significant impact. Impacts are generally considered less than significant if the habitats and species affected are common and widespread in the region and the state. Impacts are considered beneficial if the action causes no detrimental impacts and results in an increase of habitat quantity and quality.

3.4.5 Impacts and Mitigation Measures

Impact BIO-1: Substantial Adverse Effect on Special-Status Species

Based on guidelines established by the CDFW and USFWS, a project could be considered to have a significant adverse impact on biological resources if it would result in substantial disruption to, or destruction of, any special-status species, its habitat, or breeding grounds. Special-status species are those that are candidates, proposed, or listed as threatened or endangered by the USFWS or the CDFW, plants that are considered sensitive species by the CNPS, or wildlife that are considered species of special concern by the CDFW. A project would also be considered to have a significant impact if it would

result in a substantial loss of important plant or animal species; would cause a change in species composition, abundance, or diversity beyond that of normal variability; would result in the direct or indirect measurable degradation of sensitive habitats; or would result in loss of a significant plant community.

The Mill/Stockel Site, where most of the facilities are proposed that are not within the road ROW, is currently undeveloped and is comprised of predominately of ruderal, non-native plant species consistent with the *Avena barbata* Semi-Natural Herbaceous Stand (Sawyer 2009). A USFWS Endangered Species Act Species List, CNDDB, and CNPS Inventory of Rare and Endangered Vascular Plants records search was conducted for the project area. A list of federal endangered, threatened and candidate species for the Willow Creek USGS quadrangle was reviewed from the USFWS Arcata Field Office in April, 2015. These queries reported a number of special-status species with potential to occur in the Willow Creek quadrangle and adjacent quadrangles (Appendices D and E); however, there are no special-status species with the likelihood of occurrence within the project study area.

Given the urban nature of the project sites, special-status species are highly unlikely to occur within the project site and were not encountered during site visits on April 10 and May 8, 2015. Therefore, the project would have a less than significant impact to special-status species.

Mitigation: No mitigation is necessary.

Significance: Less than significant.

Impact BIO-2: Substantial Adverse Effect on Riparian Habitat or Special-Status Plant Communities identified in local or regional plans, policies, and regulations by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

The project footprint avoids impacts to riparian habitat or other sensitive plant communities as defined by CDFW and/or the USFWS. Therefore, no impacts to riparian habitat or special-status plant communities would occur as a result of this project.

Mitigation: No mitigation is necessary.

Significance: No impact.

Impact BIO-3: Substantial Adverse Effect on Federally Protected Wetlands.

The project footprint avoids impacts to state and federal jurisdictional wetlands and waters. There would be no impact to federally protected wetlands.

Mitigation: No mitigation is necessary.

Significance: No impact.

3.4.6 Cumulative Impacts

Impact: BIO-C-1: Would the project result in a cumulatively considerable contribution to cumulative impacts related to biological resources.

There are currently no other proposed projects within a five mile radius of the proposed project (reference Section 3 - Approach to Cumulative Impact Analysis) which are of substantial size that would contribute to cumulatively considerable impacts to biological resources. As noted above, the proposed project would have less than significant impacts to biological resources; therefore, the cumulative impacts of the proposed project would also be less than significant.

Mitigation: No mitigation is necessary.

Significance: Less than significant.

3.4.7 References

- CDFG, 2007, How to Read Rarefind 3 Reports, California Natural Diversity Database, Biogeographic Data Branch, California Department of Fish and Game (CDFG), accessed at: http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/RF3_Reports.pdf.
- CDFG, 2009a, List of California Vegetation Alliances, Vegetation Classification and Mapping Program, Biogeographic Data Branch, California Department of Fish and Game (CDFG), accessed at: http://www.dfg.ca.gov/biogeodata/vegcamp/pdfs/AllianceList_Dec09.pdf.
- CDFW, 2015, California Natural Diversity Database (CNDDDB), Willow Creek, Hoopa, Tish Tang Point, Lord-Ellis Summit, Maple Creek, Hupa Mountain, Salyer, Grouse Mountain, Hennessy Peak USGS Quads.
- CDFW, 2014b, Natural Communities – Background Information on the List of Vegetation Alliances and Associations, accessed at: http://www.dfg.ca.gov/biogeodata/vegcamp/natural_comm_background.asp.
- USACE, 2010, Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast, U.S. Army Corps of Engineers, accessed at: http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg_supp/west_mt_finalsupp2.pdf. May.

3.5 Cultural Resources

This section evaluates the potential impacts related to cultural resources during construction and operation of the project. To provide the basis for this evaluation, the Setting section describes the archaeological and historical setting for the project area, and the Regulatory Framework section describes the applicable federal, State and local regulations affecting the project area. Descriptions in this section are based on reviews of published information, reports, and plans regarding cultural resources. The evaluation criteria and impacts and mitigation measures sections establish the thresholds of significance, evaluate potential cultural resource impacts, and identify the significance of impacts and feasible mitigation measures if necessary.

A cultural resources study was prepared for this project (Roscoe and Associates 2015). Because archaeological and other heritage resources can be damaged or destroyed through uncontrolled public disclosure of information regarding their location, this report is confidential. The results of the study are summarized below.

3.5.1 Setting

The following sections describe the environmental setting for cultural resources within the Sewered Area. Potential impacts to cultural resources would be confined to the actual project sites, but the setting of both the project sites and immediate vicinity are described to account for uncertainties about potential locations of buried cultural and paleontological resources.

3.5.1.1 Cultural Chronology

The prehistory of the Northwest California region has a prehistoric record reaching to the early Holocene Period. Archaeological research in this general region has hypothesized a continuous prehistoric cultural chronology for the last 7,100 years before present. Oldest is the Borax Lake Pattern (8,000 to 3,000 before present [B.P.]) attributed to the earliest known prehistoric occupation for this portion of northwest California. These remains are thought to represent the activities of small, highly mobile family groups who ranged over wide areas (Fitzgerald and Hildebrandt 2001). The Middle Period (5,000 to 2,500 B.P.) is represented by the Mendocino Pattern, an adaptive orientation toward the use of low elevations, located along salmon bearing streams near acorn crops and which could be occupied by larger concentrations of people during the winter months. The late period Tuluwat (formerly Gunther) Pattern is generally dated after 1,100 years ago and presumed to represent a continuation of the Middle Archaic Period with a particular focus on coastal resources. Sites dating to this time are found throughout the western North Coast Ranges in moderate density.

3.5.1.2 Ethnographic Context

The project area is within the ethnographic territory of the Tsnungwe Tribe. They have also been referred to in the past as the Tsaningwha (Baumhoff 1958:210) and the South Fork Hupa (Wallace 1978:176). Their territory embraced the South Fork of the Trinity River, from the junction of the South Fork with the main trinity to Grouse Creek. There were at least nine villages, all situated on high benches, overlooking the canyons. At South Fork, where the river branches, stood the principal settlement, the town of Hlaidin, which figured prominently in tribal myths (Wallace 1978).

3.5.1.3 *Historic Context*

China Flat

The old settlement of China Flat is important to understanding the formation of the town of Willow Creek. Today, the area is called the intersection of Brannon Mountain Road or Big Rock and comprises the southeast quarter of section 29. It is where the Willow Creek stream enters the Trinity River, an area gently sloping to the Trinity River, on both sides, providing an excellent place to ford. This fording place, one of the best in the area, would eventually be used by the 1850 New River Trail, an important factor in the emergence of Euroamerican settlement of the area.

The ford and Willow Creek stream and a river-side Native American trail presumably also attracted the Tsnungwe (Southern Hupa) to this place. Here at the mouth of Willow Creek stream once stood the village of Xoxo:ch'e:lding (Tsnungwe Tribe Place Names 2015; cf Baumhoff 1958:311,213 site 14; Arnold and Benson 1976). Cold water from the creek afforded a good refugio for salmon making it an excellent fishing spot even to this day. Undoubtedly, the village had canoes enabling them to access resource areas on both sides of the river when the river was too high to ford. A vast inter-tribal trail and trade system connected the Tsnungwe to the Hupa villages to the north, and upriver to Hlaldin at the mouth of the South Fork of the Trinity, as well as to the South Fork Ridge trails running south as far as the San Francisco Bay area (Gates 1995).

Their way of life would soon change for Indians along the Trinity, when in 1848, Major Pierson B. Reading discovered gold on the upper Trinity. At first miners reached the Trinity from Oregon and central California following the pioneer trail system. However, in 1849 the Josiah Gregg party crossed the South Fork of the Trinity going through Hlaldin, the largest village in the region, and trekked and broke trail on their way west to rediscover Humboldt Bay, demonstrating that the gold fields might be more easily accessed from the coast.

By 1850, the New River trail connected China Flat to the coast at Union (Arcata). The trail came down the ridge to China Flat, more or less, as the Brannon Mountain Road does now. It used the ford at China Flat and continued to places which would become Happy Camp, Robber's Roost, Florence, New River City, Maysville White Rock, and Election Camp. China Flat became a transportation hub and supply point, a theme that continues throughout its history.

Soon there was a massive influx of American and European Anglos, African Americans, and Chinese miners as well as Mexican muleskinners walking down into China Flat and fanning out along the rivers, staking claims, setting up tents, and constructing shanties. The area was not as productive as had been hoped and miners moved to the New River, higher up the Trinity, and to the Klamath.

China Flat/Willow Creek emerged as an important settlement not because of its own gold fields but because it served as a hub to supply goods to more productive gold fields in Humboldt, Trinity, and Siskiyou counties. During the Great Depression a mini-gold rush supported a number of unemployed who panned and sluiced, or as it was called "sniped" for gold, and pack trains continued to the remoter areas. Gold mining, mostly hydraulic mining at the industrial level, continued in China Flat/Willow Creek until World War II, when it was stopped by the War Department because it was determined it to be a non-essential industry.

The Commercial District of downtown Willow Creek in the past sometimes also called the Forks, the area to be served by the proposed project, is not the oldest post- Native American settled area in Willow Creek. The district connects the horns of a large meander of the Trinity River, probably always providing a

short-cut for those traveling along the river even before Euroamerican-Native American contact. Permanent Native American village populations normally would be closer to the river than the commercial district, and there are no Tsnungwe ethnographic reports of villages in the area until east of the commercial district where SR 299 moves closer to the river (Baumhoff 1958; Gibbs 1852; Benson personal communication to Verwayen 2011).

The area of the present commercial district to the west of the section line dividing section 32 from section 33 was homesteaded on December 11, 1896 by John R. McNeill who homesteaded the northeast ¼ of Section 32 (BLM GLO 2015: Assession38556, doc 1220). The McNeill house stood where the Open Door Clinic is now (Wooden 2005).

No businesses other than farms existed in the commercial district until the construction of the Trinity Highway or SR 299, which today runs through the commercial district. The Trinity Highway, started in 1917 and built partly with convict labor, was completed in 1923.

Before World War II, Funds for the Trinity Highway came for the most part from Forest Aid Money. Then, post-World War II forces impacted Willow Creek as they did the rest of the nation. Demand for housing by homecoming veterans caused a timber boom. As timber boomed the returning Native American veterans—a large portion of their male population had gone to war—now had strong connections outside of their tribes with others who had served in World War II. These connections and their experience in working in complex organizations opened employment opportunities to Native Americans in the timber and lumber industries. Many local Native American families established themselves in the timber and construction industries. This and the improved highway and the timber boom meant that there was more money in the region to support additional retail and other businesses.

On December 20, 1964, a mud avalanche swept across the newly developed downtown commercial district of Willow Creek. Roads and bridges were out; Willow Creek was isolated from the rest of the county and without electric power for two weeks. Supplies flown in by helicopter were landed in an open lot where the Open Door Clinic is now. The USACE reported that they moved 400,000 yards of dirt that slid into downtown. There were no fatalities downtown; but there were several to the west of town (Hodgson 2004).

Flowers Flat

Flowers Flat is the neighborhood northeast of the commercial district and is reached today by Country Club Road, which goes over the saddle of a ridge that divides Flower's Flat from the commercial district.

In 1828 the Jedediah Smith party camped on Flowers Flat near the Veterans Hall. Originally, Flower's Flat was connected to the old settlement of China Flat at Big Rock, by McNeill Road, which ran almost to the mouth of Willow Creek stream, then headed west to connect with the 1890 County Road. Flowers Flat, before the Flowers family owned it, was for the most part homesteaded in 1909 by Alvah P. White, known to be active in hydraulic mining.

After the gold mining days, and before World War II, the area was primarily in agriculture. The Flowers farmhouse and outbuildings were located on the northern end of the present Stockel Mill site property. Also on the mill site, across from the entrance to Kimtu Road, was the baseball diamond. In the early 1900s, small towns such as Hoopa, Willow Creek, and Salyer supported competitive local baseball teams. The mill is the site of Rocklin Veneer and operated in the 1950s and 1960s. It closed in the 1970s.

3.5.1.4 Study Results

In order to assess project impacts on cultural resources, background research was conducted that included a records search at the Northwest Information Center (NWIC). The records search was conducted by James Roscoe (Roscoe and Associates) on December 10, 2014. The search included the project area of potential effect (APE) and a buffer of ½ mile radius. The purpose of the records search was to: (1) determine whether known cultural resources have been recorded within or adjacent to the project area; (2) assess the likelihood for unrecorded cultural resources to be present based on historical references and the distribution of nearby sites; and (3) develop a context for the identification and preliminary evaluation of cultural resources.

The horizontal APE is limited to the town of Willow Creek right-of-ways with a sewer line to be constructed to a treatment facility located in now vacant fields in the northeastern portion of the APE. The sewer line to the treatment facility would be constructed under a ridge using directional boring or along Country Club Road. The vertical APE for the entire project has a maximum depth of 20 feet while most of the sewer lines to be installed in the roads would be less than 15 feet in depth.

The NWIC had record of 11 previous surveys in the ½ mile buffer, but the APE had never been surveyed. No records for archaeological sites within the APE were noted; however, two sites are recorded within the ½ mile buffer. One prehistoric site is located approximately 450 meters north of the APE and a historic feature (an 1890s road) was recorded outside of, but near the westernmost portion of, the APE.

3.5.2 Regulatory Framework

3.5.2.1 Federal

National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) requires that, before beginning an undertaking, a federal agency, or those they fund or permit, must take into account the effects of the undertaking on historic properties and afford the Advisory Council on Historic Preservation and other interested parties an opportunity to comment on these actions.

Section 106 of the NHPA prescribes specific criteria for determining whether a project would adversely affect a historic property, as defined in 36 CFR 800.5. An impact is considered significant when prehistoric or historic archaeological sites, structures, or objects listed in or eligible for listing in the National Register of Historic Places (NRHP) are subjected to the following effects:

- physical destruction of or damage to all or part of the property
- alteration of a property
- removal of the property from its historic location
- change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance
- introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features
- neglect of a property that causes its deterioration
- transfer, lease, or sale of the property.

Cultural resources significance is evaluated in terms of eligibility for listing in the NRHP. NRHP significance criteria applied to evaluate the cultural resources for this project are defined in 36.CFR 60.4 as follows: The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, association, and

- A. that are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. that are associated with the lives of persons significant in our past; or
- C. that embody the distinctive characteristics of type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. that have yielded, or may be likely to yield, information important in prehistory or history.

Specific regulations regarding compliance with Section 106 state that, although the tasks necessary to comply with Section 106 may be delegated to others, the federal agency is ultimately responsible for ensuring that the Section 106 process is completed according to statute.

3.5.2.2 State

California Environmental Quality Act

Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historic, architectural, archaeological, cultural, or scientific importance. Under CEQA statutes, an impact on a cultural resource is considered significant if a project would result in an impact that may change the significance of the resource (Public Resources Code [PRC] Section 21084.1). Demolition, replacement, substantial alteration, and relocation of historic properties are actions that would change the significance of a historic resource (California Code of Regulations, Title 14, 15064.5). The following steps are normally taken in a cultural resources investigation to comply with CEQA:

- Identification of cultural resources
- Evaluate the significance of the cultural resources based on established thresholds of significance
- Evaluate the impacts of a project on cultural resources
- Develop and implement measures to mitigate the impacts of the project on significant cultural resources.

Because the project is located on non-federal land in California, it is also necessary to comply with State laws pertaining to the inadvertent discovery of human remains of Native American origin. The procedures that must be followed if burials of Native American origin are discovered on non-federal land in California are described in the Impacts and Mitigation Measures section, below.

California Public Resources Code

As part of the determination made pursuant to PRC Section 21080.1, the lead agency must determine whether a project would have a significant effect on archaeological and paleontological resources.

Several sections of the PRC protect cultural resources and PRC Section 5097.5 protects vertebrate paleontological sites located on public land. Under Section 5097.5, no person shall knowingly and willfully

excavate upon, or remove, destroy, injure, or deface, any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site (including fossilized footprints), inscriptions made by humans, rock art, or any other archaeological, paleontological, or historical feature situated on public lands, except with the express permission of the public agency that has jurisdiction over the lands. Violation of this section is a misdemeanor.

PRC Section 5097.98 states that if Native American human remains are identified within a project area, the landowner must work with the Native American Most Likely Descendant as identified by the Native American Heritage Commission (NAHC) to develop a plan for the treatment or disposition of the human remains and any items associated with Native American burials with appropriate dignity. These procedures are also addressed in Section 15046.5 of the CEQA Guidelines. Section 30244 of the PRC requires reasonable mitigation for impacts on paleontological and archaeological resources that occur as a result of development on public lands.

California Health and Safety Code

California Health and Safety Code Section 7050.5 prohibits disinterring, disturbing, or removing human remains from a location other than a dedicated cemetery. Section 7050.5 also requires that construction or excavation be stopped in the vicinity of discovered human remains until the Coroner can determine whether the remains are those of a Native American. If determined to be Native American, the Coroner must contact the California NAHC.

California Native American Historical, Cultural and Sacred Sites Act

This Act applies to both State and private lands. The Act requires that upon discovery of human remains, that construction or excavation activity cease and that the County Coroner be notified. If the remains are of a Native American, the Coroner must notify the NAHC. The NAHC then notifies those persons mostly likely to be descended from the Native American remains. The Act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

3.5.2.3 *Regional and Local*

Humboldt County General Plan

The following are the goals and policies from the Humboldt County General Plan that are most applicable to the project with regard to cultural resources.

3530 Goal. To provide for the protection and enhancement of cultural resources for the historic, scientific, educational, and social contributions they render to the present generation and to generations that follow.

3531 Policies

- 1. Cultural resources (including but not limited to archaeological, paleontological and architectural sites, grave sites and cemeteries) shall be identified where feasible, assessed as to significance, and if found to be significant, protected from loss or destruction.*
- 2. Concerned citizens, historical organizations and applicable agencies shall be consulted during project review for the identification and protection of cultural resources.*
- 3. Projects located in areas found to have cultural resources shall be conditioned and designed to avoid loss or degradation of these resources.*

4. *Expert opinions and field reconnaissance at the applicant's expense may be required during environmental assessment to determine the presence, extent, and condition of cultural resources and the likely impact upon such resources.*
5. *Archaeological and paleontological resources shall not be knowingly destroyed or lost through a discretionary action unless:*
 - A. *The site or resource has been found to be of insignificant value by relevant experts and representatives of the cultural resources community, or;*
 - B. *There is an overriding public benefit from the project, and compensating mitigation to offset the loss is made part of the project.*
6. *Mitigation measures shall be required where new development would adversely impact archaeological or paleontological resources.*

3.5.3 Evaluation Criteria and Significance Thresholds

Under criteria based on Appendix G of the CEQA Guidelines, the project would be considered to have a significant impact on cultural resources if it would result in any of the following:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- Disturb any human remains, including those interred outside of formal cemeteries.

3.5.3.1 Areas of No Project Impact

- **Cause a substantial adverse change in the significance of a historical resource.** According to the cultural resources study prepared for the project, no cultural resources were identified during the investigation and pursuant to 36 CRF Part 800.4 it is recommended that implementation of the project would result in no effects to historic properties and no adverse changes to historical resources per Public Resource Code 5020.1. Therefore, this issue is not discussed further.

3.5.4 Methodology

The impact analysis included in this section is based on the cultural resources investigation conducted for the project by Roscoe and Associates as described above. The NAHC was also contacted for a review of the Sacred Lands Inventory File and to provide a list of local Native American groups and individuals who may have interests and/or concerns with the project. Letters were sent on January 5, 2015 to:

1. Hoopa Tribe - Danielle Vigil-Masten, Chairperson
2. Tsnungwe Council - Paul Ammon, Chairperson

The analysis considers direct and indirect impacts on cultural and paleontological resources within the project sites. Potential impacts on historic resources are assessed by identifying the activities that could

affect the architectural resources that have been identified as historical resources for the purposes of CEQA. While most historic buildings and many historic-period archaeological properties are generally significant because of their association with important events, people, or styles (CRHR Criteria A, B, and C), the significance of most prehistoric and historic-period archaeological properties is usually assessed under Criterion D. This criterion stresses the importance of the potential information contained within the site rather than the resource's significance as a surviving example of a type of construction or its association with an important person or event.

As defined in PRC Section 21083.2, a "unique" archaeological resource is an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

CEQA Guidelines define a historical resource as: (1) a resource listed in CRHR; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or (3) any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

If a lead agency determines that an archaeological site is a historical resource, the provisions of PRC Section 21084.1 and CEQA Guidelines Section 15064.5 would apply. If an archaeological site does not meet the CEQA Guidelines criteria for a historical resource, then the site is to be treated in accordance with the provisions of PRC Section 21083 regarding unique archaeological resources. The CEQA Guidelines note that if a resource is neither a unique archaeological resource nor a historical resource, the effects of the project on that resource shall not be considered a significant effect on the environment (CEQA Guidelines Section 15064[c][4]).

Once a resource has been identified as significant, it must be determined whether the project would "cause a substantial adverse change in the significance" of the resource (CEQA Guidelines 15064.5[b]). A substantial adverse change in the significance of a historical resource or unique archaeological resource means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired" (CEQA Guidelines Section 15064.5[b][1]). A historical resource is materially impaired through the demolition or alteration of the historical resource's physical characteristics that convey its historical significance and that justify its inclusion in the CRHR (CEQA Guidelines Section 15064.5[b][2][A]).

3.5.5 Impacts and Mitigation Measures

Impact: **CR-1: Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.**

Geologically, the areas near the Trinity River and along Willow Creek exhibit exposed bedrock consisting of bedded slates of the Galice Formation, and Quaternary terrace gravels (Young 1978). Within the commercial district and in the area of Flowers Flat where the septic settling holding tank and leachfield are proposed, there is no evidence of bedrock types important to pre-contact Native American economies such as chert and soapstone (Eidsness 2006:2). It is along Country Club Road or through the ridge that pipe would take sewage from the commercial district to a holding tank and leachfield to be located in the field across from the turnoff to Kimtu Road.

The NWIC records search found no records for archaeological sites within the APE; however, two sites were recorded within the ½ mile buffer. One prehistoric site is located approximately 450 meters north of the APE and a historic feature (an 1890s road) was recorded outside of, but near the westernmost portion of the APE. In the unlikely event of inadvertent discovery of cultural resources during excavation during construction, the impact could be significant. However, implementation of Mitigation Measure CR-1 would reduce the impact to less than significant.

Mitigation: Mitigation Measure CR-1: Disturbance of Undiscovered Archaeological Resources.

If previously unidentified cultural resources are unearthed during construction, WCCSD shall halt work in that area until a qualified archaeologist can assess the significance of the find. Prehistoric materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (“midden”) containing heat-affected rocks, artifacts, or shellfish remains; stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. If any find is determined to be significant, WCCSD and the archaeologist shall determine the appropriate avoidance measures or other appropriate mitigation. All significant cultural resources recovered shall be, as necessary and at the discretion of the consulting archaeologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards. In considering any suggested measures proposed by the consulting archaeologist in order to mitigate impacts to historical resources or unique archaeological resources, WCCSD shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, project design, costs, and other considerations.

If avoidance is infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on other parts of the project while mitigation for historical resources or unique archaeological resources is being carried out.

Significance: Less than significant with mitigation.

Mitigation measure CR-1 would reduce potentially significant impacts on undiscovered archaeological resources to a less-than-significant level by providing a process for evaluation of any unknown resources encountered during construction, and avoidance or data recovery of resources that meet the CEQA definition of historical or unique archaeological resources.

Impact: CR-2: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

There are no known unique paleontological resources or unique geologic features within the project APE. However, project construction activities could affect unknown resources. There is a potential for fossils to be discovered and inadvertently damaged during project construction even in areas with a low likelihood of occurrence. In the unlikely event that paleontological resources are discovered, there could be a

significant impact. Implementation of Mitigation Measure CR-2 would reduce potential impacts to a less-than-significant level.

Mitigation: Mitigation Measure CR-2: Recovery of Buried Paleontological Resources.

In the event that paleontological resources are discovered, WCCSD shall notify a qualified paleontologist. The paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. If fossilized materials are discovered during construction, excavations within 50 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist. The paleontologist shall notify the appropriate agency to determine procedures that would be followed before construction is allowed to resume at the location of the find.

If WCCSD determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project on the qualities that make the resource important. The plan shall be submitted to WCCSD for review and approval prior to implementation.

Significance: Less than significant with mitigation.

Mitigation measures CR-2 would reduce potentially significant impacts on undiscovered paleontological resources to a less-than-significant level by providing a process for evaluation of any unknown resources encountered during construction, and avoidance or data recovery of resources that meet the CEQA definition of unique paleontological resources.

Impact: CR-3: Would the project disturb any human remains, including those interred outside of formal cemeteries.

While no evidence exists for the presence of historic or prehistoric burials at the project sites, this does not preclude the existence of buried subsurface human remains. If any human remains were unearthed during project construction, particularly those that were determined to be Native American, a potentially significant disturbance of human remains would occur.

Mitigation Measure CR-3: Potential to Uncover Human Remains.

If construction activities result in the discovery of human remains during ground disturbing construction activities, in accordance with California Health and Safety Code Section 7050.5, no further disturbance shall occur until the Humboldt County Coroner (Coroner) has made a determination of origin and disposition pursuant to PRC Section 5097.98. The Coroner shall be notified of the find immediately and there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the Coroner makes the required determinations regarding the remains. If the human remains are determined to be prehistoric, the Coroner shall notify the NAHC, which shall determine and notify a Most Likely Descendant. The Most Likely Descendant shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and non-destructive analysis of human remains and items associated with Native American burials.

Significance: Less than significant with mitigation.

Mitigation measures CR-3 would reduce potentially significant impacts on uncovering human remains to a less-than-significant level by providing direction on who to notify in the event human remains are found.

3.5.6 Cumulative Impacts

Impact: CR-C-1: Would the project result in cumulatively considerable contributions to cumulative impacts related to cultural resources.

As noted in Section 3.0, there are no cumulative projects in the project vicinity with which to compare the proposed project. There are no known cultural resources that would be impacted by the project. As described in this EIR, appropriate studies were undertaken to ensure that cultural resources that could be impacted by the project were identified, and that mitigation measures are put forth that would reduce the impacts to unknown cultural resources to a less-than-significant level. These measures are consistent with Humboldt County General Plan Policies 3531 and Public Resources Code 7050.5. Therefore, the project's incremental effect to cultural resources is not cumulatively considerable and would not contribute to any significant impacts to cultural resources that may be caused by other cumulative projects.

Mitigation: No mitigation is necessary.

Significance: Less than significant.

3.5.7 References

- Arnold, Barbara and Jim Benson, 1976, CA-HUM-358 (Information Sheet), on file at the North West Information Center, Sonoma State University.
- Baumhoff Martin A., 1958, Anthropological Records 16:5 California Athabaskan Groups, University of California Press Berkeley and Los Angeles.
- Benson, Robert, 2009-2015, Personal Communication. Robert Benson is a Tsnungwe elder and traditionalist, as well as an artist and retired professor of art. He has a home Bayside, California as well as in Willow Creek, California.
- BLM GLO, 2015, Homestead records are available on line at <http://www.glorerecords.blm.gov/results/default.aspx?searchCriteria=type=patent|st=CA|cty=|>.
- Fitzgerald, R.T. and W.R. Hildebrandt, 2001, Will the True Age of the Borax Lake Pattern Please Stand Up? The Archaeology of CA-HUM-573, an Early Holocene Site on the South End of Pilot Ridge, Humboldt County, California, Paper presented at the 2001 annual meeting of the Society of California Archaeology.
- Gates, T, 1995, Along the Ridgelines: A History of the Yurok Trail Systems, Ph.D. Dissertation, Department of Anthropology, University of North Carolina at Chapel Hill.
- Gibbs, George, 1852, Map (Page 235) in Martin A. Baumhoff Anthropological Records 16:5 California Athabaskan Groups, University of California Press Berkeley and Los Angeles (1958).
- Hodgson, Al, 2004, Looking Back 40 Years to the Flood. In Foot Prints in the Sands of Time (Fall 2004). A newsletter published by the Willow Creek-China Flat Museum, Willow Creek, California.
- Tsnungwe Tribe Place Names, 2015, accessed online on January 15, 2015 at: <http://www.dcn.davis.ca.us/~ammon/tsnungwe/placenames.html>.
- Wallace, William J., 1978, Hupa, Chilula, and Whilkut, Volume 8, California, Handbook of North American Indians, California, Smithsonian Institution, Washington.
- Wooden, Margaret, 2005, A Beautiful Steelhead in a Block of Ice, Foot Prints in the Sands of Time, Museum Newsletter, Willow Creek China Flat (Fall 2005).
- Young, John C., 1978, Geology of the Willow Creek Quadrangle, Humboldt and Trinity Counties, California, Map Sheet 31, Division of Mines and Geology, State of California, Sacramento.

This page intentionally left blank

3.6 Geology and Soils

This section evaluates the potential impacts related to geology and soils. The Setting section describes the existing environmental setting as it relates to geology and soils. The Regulatory Framework section describes the applicable regulations at the federal, State and local level. The impacts and mitigation measures section establishes the thresholds of significance, evaluates potential geological and soils impacts, and identifies the significance of impacts. Where appropriate, mitigation is presented to reduce impacts to less-than-significant level. Information in this section is based in part on the Geotechnical Report prepared for this project by Crawford & Associates (Appendix G) (Crawford & Associates 2015).

3.6.1 Setting

3.6.1.1 *Geologic Setting*

The topography of the project sites is a mildly sloping valley, generally sloping towards Highway 96. The highest point within the collection area is near the intersection of Highway 299 and Roth Road (633 feet elevation), and the lowest point is near the intersection of Highway 96 and Mayfair Street (575 feet elevation). The topography slopes up to the north and northeast of Willow Creek's downtown area, reaching an elevation of over 770 feet at the top of the ridge before sloping back down to the Trinity River. Surface drainage in the area generally ranges from south to southwest.

According to the geotechnical report, the project area is underlain by Upper Jurassic marine sediments of the Galice formation, described as phyllitic meta-graywacke and slate. These sediments are overlain by Quaternary river terrace deposits within much of the town limits and along lowland terraces bordering the Trinity River. Rocks consistent with Jurassic sediments are exposed within road cuts along Country Club Drive northeast of Willow Creek (leading upslope to the proposed wastewater treatment plant area). Crawford & Associates describe the rock as fractured meta-sandstone and slate/shale with minor quartz stringers. Rock layering (bedding) is measured in the cut slope to strike 25-30° northwest and dip 40-45° northeast (obliquely into the slope), consistent with the published mapping. Crawford & Associates observed the rock quality to be highly variable with relatively competent sandstone mixed with zones of thinly-bedded, sheared slate/shale. The road cuts generally stand at about 1:1 slope, with local sloughing in areas of highly weathered/decomposed rock. The river terrace deposits are present within the flatter terrain along the river margins and within the town limits. These soils are mostly unconsolidated sand, silt and gravel. (Crawford & Associates 2015)

3.6.1.2 *Soils*

According to the Preliminary Engineering Report (GHD 2014), soils in the project area consist mainly of loam soil types. Loam soil is a combination of sand, silt, and clay (more sand and silt than clay) that drains well and is also relatively easy to excavate. Parts of the service area also consist of rocky soil, which would likely be more difficult to excavate.

Soil investigations were performed at nine different locations in the Sewered Area and proposed wastewater treatment plant and infiltration disposal sites (Appendix G). Borings B1 through B6 were drilled in the collection system area. Borings B1, B2, and B5 identified loose silty sand to a depth of about 2 feet underlain by intensely-to slightly-weathered rock. The remaining borings within the collection area (borings B3, B4 and B6) generally indicated loose silty sand and sandy silt to depths of about 2 to 5 feet

underlain by stiff to very stiff sandy lean clay and clayey sand to the maximum depths explored (15.5 feet).

Borings B7 through B9 were located at the treatment plant and disposal areas north of the collection system. These soils are generally classified as sandy silt, silty sand, and clayey sand to depths of about 12 to 13 feet, underlain by poorly graded gravel to the maximum depths explored (17.2 feet). In boring B8 (proposed gravel filter area) about 4 feet of organic silt from depths of about 2 to 6 feet was encountered.

3.6.1.3 *Seismicity*

Based on the California Geologic Survey earthquake fault zone map, no known faults cross the project sites. However, some degree of ground motion resulting from seismic activity in the region is expected. The nearest known active fault is the Blue Lake Fault approximately 16 miles to the southwest.

The California Geological Survey, Probabilistic Seismic Hazards Mapping Ground Motion Page (www.conservation.ca.gov) indicates a maximum peak ground acceleration (PGA) on the order of 0.61g for a seismic event with a 10 percent probability of exceedance in 50 years (design basis earthquake).

Earthquakes on active faults in the region have the capacity to produce a range of ground shaking intensities in the project area. Ground shaking may affect areas hundreds of miles distant from an earthquake's epicenter. Ground motion during an earthquake is described by the parameters of acceleration and velocity as well as the duration of the shaking. A common measure of ground motion is the PGA. The PGA for a given component of motion is the largest value of horizontal acceleration obtained from a seismograph. PGA is expressed as the percentage of the acceleration due to gravity (g)¹. Moderate earthquake hazard areas are defined as areas with ground accelerations of less than .092g and Violent earthquake hazard areas have ground accelerations of 0.65g to 1.24g.

3.6.1.4 *Surface Fault Rupture*

Seismically induced ground rupture is defined as the physical displacement of surface deposits in response to an earthquake's seismic waves. The magnitude and nature of fault rupture can vary for different faults or even along different strands of the same fault. Surface rupture can damage or collapse buildings, cause severe damage to roads and pavement structures, and cause failure of overhead as well as underground utilities. As a result of the damage, buildings could become uninhabitable, roads could close, and utility service could be disrupted for an undetermined length of time. Ground rupture is typically confined to relatively narrow zones (a few feet to tens of feet wide) and considered more likely along active faults. The project area does not fall within an Alquist-Priolo Fault Rupture Hazard Zone Map, as designated through the Alquist-Priolo Earthquake Fault Zoning Act (CGS 2007).

3.6.1.5 *Liquefaction, Lateral Spreading and Subsidence*

Liquefaction is a phenomenon whereby unconsolidated and/or near-saturated soils lose cohesion and are converted to a fluid state as a result of severe vibratory motion. The relatively rapid loss of soil shear strength during strong earthquake shaking results in temporary, fluid-like behavior of the soil. Soil liquefaction causes ground failure that can damage roads, pipelines, underground cables and buildings with shallow foundations.

¹ Acceleration of gravity (g) = 980 centimeters per second squared. 1.0g of acceleration is a rate of increase in speed equivalent to a car traveling 328 feet from rest in 4.5 seconds.

Lateral spreading refers to landslides that commonly forms on gentle slopes and that have rapid fluid-like flow movement, like water. Subsidence (e.g., settlement) is the depression of the bearing soil when a load, such as that of a building or new fill material, is placed upon it. Subsidence could occur if loose, saturated sands near the ground liquefy during severe ground shaking.

The geotechnical report prepared for the proposed project did not identify any areas within the project area subject to liquefaction, lateral spreading or subsidence.

3.6.1.6 *Slope Failure and Landslides*

Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material, either triggered by static (i.e., gravity) or dynamic (i.e., earthquake) forces. Earthquake motions can induce significant horizontal and vertical dynamic stresses in slopes that can trigger failure. Earthquake-induced landslides can occur in areas with steep slopes that are susceptible to strong ground motion during an earthquake.

The project sites are characterized by relatively flat to gently sloping terrain; therefore, landslide hazards to the planned structures are considered to be low.

3.6.1.7 *Expansive Soils*

Expansive soils possess a “shrink-swell” characteristic. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying. Structural damage may occur over a long period of time due to expansive soils, usually the result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils. The surface and near-surface soils encountered in the test borings at the project sites are primarily composed of loose silty sand and sandy silt to very stiff sandy lean clay and clayey sand.

3.6.1.8 *Soil Erosion*

Soil erosion is a process whereby soil materials are worn away and transported to another area, either by wind or water. Areas susceptible to erosion occur where surface soils possess low-density and/or low-strength properties. Slopes are another factor in soil erosion – the greater the slope, the greater the erosion hazard, especially if the soil is bare of vegetation. As noted above, the project sites are characterized by relatively flat to gently sloping terrain.

3.6.2 Regulatory Framework

3.6.2.1 *Federal*

There are no federal policies or regulations relevant to the project for geology and soils.

3.6.2.2 *State*

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. In accordance with this act, the State Geologist established regulatory zones, called “earthquake fault zones,” around the surface traces of active faults and published maps showing these zones. Within these zones, buildings for human occupancy cannot be constructed across the surface trace of active faults. Because many active faults are complex and consist of more

than one branch, each earthquake fault zone extends approximately 200 to 500 feet on either side of the mapped fault trace.

Title 14 of the CCR, Section 3601(e), defines buildings intended for human occupancy as those that would be inhabited for more than 2,000 hours per year. The proposed project sites do not cross an Alquist-Priolo Earthquake Fault Zone (CGS 2007), and do not include buildings that meet this criterion for human occupancy. Therefore, the provisions of the act do not apply to the project.

Seismic Hazards Mapping Act

Like the Alquist-Priolo Act, the Seismic Hazards Mapping Act of 1990 (PRC Sections 2690 to 2699.6) is intended to reduce damage resulting from earthquakes. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong groundshaking, liquefaction and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Act: the state is charged with identifying and mapping areas at risk of strong groundshaking, liquefaction, landslides, and other corollary hazards, with cities and counties required to regulate development within mapped Seismic Hazard Zones.

Under the California Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Specifically, cities and counties are prohibited from issuing development permits for sites within Seismic Hazard Zones until appropriate site-specific geologic and/or geotechnical investigations have been conducted and measures to reduce potential damage have been incorporated into the development plans. The California Geological Survey has not yet evaluated the project area under the Seismic Hazards Mapping Act.

California Building Code

The State of California provides minimum standards for building design through the California Building Code (CBC). Where no other building codes apply, CBC Chapter 29 regulates excavation, foundations, and retaining walls. The CBC applies to building design and construction in the State and is based on the federal Uniform Building Code (UBC) used widely throughout the country. The CBC has been modified for California conditions with numerous more detailed and/or more stringent regulations. Specific minimum seismic safety and structural design requirements are set forth in CBC Chapter 16. The Code identifies seismic factors that must be considered in structural design. Chapter 18 of the CBC regulates the excavation of foundations and retaining walls, and Appendix Chapter A33 regulates grading activities, including drainage and erosion control, and construction on unstable soils, such as expansive soils and areas subject to liquefaction.

3.6.2.3 Regional and Local

The following are the policies from the Humboldt County General Plan that are applicable to the project.

Humboldt County General Plan

3291 Policies

1. General

- A. *Regulate land use to ensure that development in potentially hazardous areas will not preclude preserving and promoting public safety. Potentially hazardous areas include, but are not limited to, steep slopes, unstable soils areas, on active earthquake fault lines, in extreme wildland fire areas, in airport flight path zones, and in flood plains and tsunami runup areas.*

2. Geologic

A. *Provide for the identification and evaluation of existing structural hazards.*

3.6.3 Evaluation Criteria and Significance Thresholds

The project would cause a significant impact related to geology and soils, as defined by the CEQA Guidelines (Appendix G), if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides;
- Result in substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property; or
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

3.6.3.1 **Areas of No Project Impact**

- **Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?** The project would not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems. The project includes a gravity wastewater collection system for the proposed Sewered Area with one pump station (potentially two pump stations, based on final design). Therefore, this significance criterion is not applicable to the project and is not discussed further.

3.6.4 Methodology

The descriptions of geology and soils in this section rely on information gathered from the USGS, the Natural Resources Conservation Service (NRCS), the CGS, and the geotechnical report prepared for the project (Crawford & Associates 2015). This section also incorporates previous research and analyses provided in the Humboldt County General Plan and General Plan update. This information was reviewed to determine relevant information for the EIR analysis. Project improvements are evaluated for their potential to be affected by, or to increase, risks associated with identified geologic and seismic hazards. Appropriate mitigation measures are identified for impacts determined to be potentially significant.

3.6.5 Impacts and Mitigation Measures

Impact: GEO-1: Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a

known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides.

Earthquake Faulting

There are no earthquake faults delineated on Alquist Priolo Fault Zone maps within the project area. Because the project area is not traversed by a known active fault and is not within 200 feet of an active fault trace, surface fault rupture is not considered to be a significant hazard for the project area. Ground rupture and/or fault creep are/is not expected to occur at the project sites. The nearest known active fault is the Blue Lake Fault approximately 16 miles to the southwest.

Ground Shaking

The project area is located within a seismically active area of Northern California and may experience severe shaking in the future from the Blue Lake Fault and other nearby faults in the region. Hazards associated with strong ground shaking are potentially significant, but adherence to county and State seismic hazard requirements and the California Green Building Standards Code (California Code of Regulations, Title 24) would reduce potential impact to a less than significant level.

Liquefaction

None of the Sewered Area or wastewater treatment plant and infiltration disposal areas are subject to liquefaction. The possibility for facilities to be affected by liquefaction, resulting in damage to facilities, potentially including ruptured pipelines, would be potentially significant. However, design and construction of the project would incorporate appropriate engineering practices to ensure seismic stability, as required by the California Green Building Standards Code. Proper design and construction using standard techniques such as temporary construction dewatering per Cal OSHA requirements, use of horizontal thrust blocks to support and redirect piping, use of a Modulus of Subgrade Reaction, k_s (load intensity per unit of displacement), equal to 300 pounds per cubic inch to design the mat foundation for the treatment plant, etc. would be employed to reduce the potential for damage by liquefaction.

Slope Instability

Construction

Areas of slope instability (e.g., landslide, lateral spreading, subsidence) have not been identified for the project sites or wastewater treatment plant and infiltration disposal areas. While the area is relatively flat or gently sloping, and is likely stable, the project would require additional measures to confirm stability (Crawford & Associates 2015). Additionally, there is the potential for localized sloughing of near-vertical slopes and overhangs, as well as toppling of soil columns during construction, which are potentially significant impacts.

In general, the geologic and seismic hazards described above could be reduced by employing sound BMPs, such as protecting graded or disturbed areas, including slopes, in accordance with the approved erosion control plan. To minimize hazards to construction workers from unstable temporary slopes and ensure that no significant adverse impacts would occur, all earthwork and grading would be required to meet the requirements of State building and structural codes, Humboldt County permitting requirements (e.g., grading and erosion control plans), and the county's General Plan. Additionally, the project would be performed in accordance with the recommendations in the geotechnical report as identified in Mitigation Measure GEO-1 below.

Mitigation Mitigation Measure GEO-1: Implement Recommendations in Geotechnical Report

WCCSD shall ensure that site preparation and earthwork is done in accordance with the recommendations in the geotechnical report for the project (Crawford & Associates 2015). This would include performing all site preparation and earthwork activities in accordance with the recommendations listed in Section 7 – Conclusion and Recommendations, in the geotechnical report. This may include, but would not be limited to, one or more of the following measures (or equivalent measures) to meet the performance standards:

- Maintain wet optimum moisture content of clay soils where the soils will support foundations, concrete slabs, and asphalt concrete pavements, until covered with permanent construction and install moisture barriers.
- Remove organic topsoil from planned structure areas prior to construction.

The project shall be designed and constructed in conformance with the specific recommendations contained in the geotechnical report, including recommendations for grading, ground improvement, foundations, concrete slabs and asphalt concrete pavements. The recommendations made in the geotechnical report shall be incorporated into the final plans and specifications and implemented during construction. Professional inspection of foundation and excavation, earthwork and other geotechnical aspects of site development shall be performed during construction in accordance with the current version of the California Green Building Standards Code.

Implementation of Mitigation Measure GEO-1, in addition to adherence to county and State seismic hazard requirements, the California Green Building Standards Code, would reduce the risk to life or property during a seismic event to a less than significant level.

Significance: Less than significant with mitigation.

Impact: GEO-2: Would the project result in substantial soil erosion or the loss of topsoil.

Construction

Much of the disturbance limits for the project would occur within paved or otherwise previously disturbed areas with little or no vegetation. Pipelines (and pump station) would be constructed within existing roadways, and construction is not expected to result in loss of topsoil. However, at the wastewater treatment plant, any existing on-site groundcover and vegetation within the project sites' disturbed limits would be removed during construction. With the loss of this vegetation, surface soils would be exposed to wind and surface water flow, which raises the potential for erosion. Additionally, as part of construction at the wastewater treatment plant site, grading and excavation activities would result in the removal of approximately 1,520 cubic yards of material for the construction of the septic tank, recirculation tank, and gravel filters, and the project would import approximately 490 cubic yards of material. Grading and excavation would expose soils on the wastewater treatment plant site to wind and water erosion. Moreover, trenching in the roadways to install pipelines for the proposed collection system would lead to substantial soil exposure. These impacts would be potentially significant depending upon the amount and extent of erosion.

As described in Section 3.9 (Hydrology and Water Quality), any project involving grading of an area greater than one acre is required to apply for a NPDES permit from the North Coast Regional Water Quality Control Board (NCRWQCB). This permit requires the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP). A BMP program, as required by the NCRWQCB, would be prepared and implemented as part of the SWPPP. Since some construction activities would not be restricted to the dry months of the year, erosion control BMPs would be implemented to confine sediment

to the construction area and not transported off-site. Erosion control is required by the County, and NCRWQCB through the county's General Plan, implementation measures, and regulatory permits. Implementation of the county's stormwater pollution-control BMPs; compliance with adopted regulations and policies, and use of appropriate sloping, shoring, and bracing techniques, as well as covering or stabilizing topsoil stockpiles, would reduce soil erosion impacts to a less-than-significant level. The NCRWQCB's SWPPP requirements are described in Section 3.9.5 (Impact HYD-1). No mitigation beyond compliance with these measures is required.

Operations

Project operation and maintenance are not expected to result in increased erosion. Upon completion of construction, pipelines would be buried and surfaces repaved/restored to their existing conditions. The wastewater treatment plant and pump station site(s) would be paved and revegetated and BMPs as required in the SWPPP, and in the grading and erosion control plans would be incorporated to minimize any unavoidable impacts, so that ongoing erosion would not occur. Vegetated areas would be maintained and irrigated as needed to ensure that vegetation remains established. Operation is thus not expected to increase erosion or result in the loss of topsoil, and this impact would be less than significant.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

Impact: **GEO-3: Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.**

According to the geotechnical report prepared for the project (Crawford & Associates 2015), the wastewater treatment plant site, pump station site, infiltration disposal areas, and areas where pipelines would be constructed under roadways were not identified as having soils with expansive properties. Recommendations in the geotechnical report are being incorporated into the design of facilities to reduce any expansion potential. This impact would be less than significant.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

3.6.6 Cumulative Impacts

Impact: **GEO-C-1: Would the project result in cumulatively considerable contribution to cumulative impacts related to geology and soils.**

The nature of geologic impacts is largely site-specific. Therefore, geologic hazards do not accumulate as impacts on other resources do. The project would comply with state and local regulations and policies, and mitigation measures GEO-1 and HYD-1 would be implemented to reduce the risk to life and property from these geologic hazards and potential soil erosion. There would be no contribution to a cumulative impact related to geologic or soils impacts.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

3.6.7 References

California Geological Survey, 2007, *Special Publication 42, Fault-rupture Hazard Zones in California, Alquist-Priolo Fault Zoning Act with Index to Earthquake Fault Zones Maps.*

Crawford & Associates, 2015, *Draft Geotechnical Report, Wastewater Treatment System, Willow Creek, California*, April.

GHD, 2014, *Willow Creek Community Services District Downtown Wastewater Development Preliminary Engineering Report - Wastewater Facilities*, November.

U.S. Geological Survey (USGS), 2008, *The Uniform California Earthquake Rupture Forecast, Version 2* (UCERF 2).

This page intentionally left blank

3.7 Greenhouse Gas Emissions

This section evaluates the potential impacts related to greenhouse gas (GHG) emissions during construction and operation of the project. To provide the basis for this evaluation, the Setting section describes the existing setting with regard to GHG emissions for the project area and the Regulatory Framework section describes the regulatory background that applies to the project. The impacts and mitigation measures section establishes the thresholds of significance, evaluates GHG impacts, and identifies the significance of impacts. Where appropriate, mitigations are presented to reduce impacts to less than significant.

3.7.1 Setting

Gases that trap heat in the atmosphere are referred to as greenhouse gases because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse. The accumulation of GHGs has been implicated as the driving force for global climate change. The primary GHGs are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), ozone (O₃), and water vapor (H₂O).

While GHGs in the atmosphere are naturally occurring, the emission rate of CO₂, CH₄ and N₂O has been accelerated by human activities. Emissions of CO₂ are largely by-products of fossil fuel combustion, whereas CH₄ results from off-gassing associated with such activities as agricultural practices and landfills. Other GHGs include hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride, which are generated during certain industrial processes. GHGs are typically reported in “carbon-dioxide-equivalent” measures (CO₂e).

There is international scientific consensus that human-caused increases in GHGs have contributed, and will continue to contribute, to climate change. Potential climate change impacts in California may include, but are not limited to, a decrease in snowpack; sea level rise; and a greater number of extreme heat days per year, high ozone days, large forest fires, and drought years. Secondary effects are likely to include impacts on agriculture, changes in disease vectors, and changes in habitat and biodiversity.

The EPA reports U.S. GHG emissions for 2011 as 6,702 million metric tons (MMT) of CO₂e. Electricity production accounts for 33 percent, followed by the transportation sector at 28 percent and the industrial sector at 20 percent. Commercial and residential fuel use and the agricultural sector accounted for the remaining 19 percent (U.S. EPA 2013).

The CARB estimated that in 2011 California produced about 448 MMT CO₂e. The transportation sector was the highest source at 38 percent of the State's total GHGs, followed by the industrial sector at 22 percent, and electricity generation (both in-state and out-of-state) at 19 percent. Commercial and residential fuel use, recycling and waste, high global warming potential, and agricultural sectors accounted for the remaining 21 percent of the State's total GHGs (CARB 2013).

3.7.2 Regulatory Framework

3.7.2.1 Federal

There are no federal regulations that apply to this type of project as related to GHG emissions.

3.7.2.2 State

In 2006, the Governor signed AB32, the “Global Warming Solutions Act of 2006,” committing the State of California to reducing GHG emissions to 1990 levels by 2020. The statute requires CARB to track emissions through mandatory reporting, determine the 1990 emission levels, set annual emissions limits that will result in meeting the 2020 target, and design and implement regulations and other feasible and cost effective measures to ensure that statewide GHG emissions will be reduced to 1990 levels by 2020.

In December 2007, CARB approved the 2020 emissions limit at 427 MMT CO₂e. Projected business-as-usual emissions for 2020 are 507 MMT CO₂e. Therefore, a reduction of 80 MMT CO₂e is needed to meet the goal (CARB 2012).

In December 2008, pursuant to AB 32, CARB adopted the Climate Change Scoping Plan, which outlined measures to attain the 2020 GHG emissions limit. The Climate Change Scoping Plan estimated that implementation of identified measures would result in a reduction of 105.3 MMT CO₂e from various sectors including transportation, energy, forestry, and high global warming potential gas sectors (originally reported as 174 MMT CO₂e, but updated to 105.3 MMT CO₂e in the Status of Scoping Plan Recommended Measures found at the CARB website). This is 24 percent more than is needed to meet the 2020 mandate.

In May 2014, CARB released the First Update to the Climate Change Scoping Plan which describes the progress made to meet the near-term (2020) objectives of AB 32 and defines California's climate change priorities and activities for the next several years (CARB 2014). The Plan also updated the 2020 emissions limit and business-as-usual emissions for 2020. The 2020 limit is now 431 MMT CO₂e and the business-as-usual forecast is 509 MMT CO₂e. Finally, the plan provides recommendations for establishing a mid-term emissions limit that aligns with the long-term reduction goals of Executive Order S-3-05 (signed by then Governor Schwarzenegger, Executive Order S-3-05 establishes GHG reduction targets for 2050). The recommendations cover the Energy, Transportation, Agriculture, Water, Waste Management, Natural and Working Lands, Short-lived Climate Pollutants, Green Building, and Cap-and-Trade sectors.

3.7.2.3 Regional and Local

North Coast Unified Air Quality Management District

The NCUAQMD is a regional environmental regulatory agency with jurisdiction over Humboldt County. The NCUAQMD enforces local, state and federal air quality regulations and air quality permits.

The NCUAQMD has not developed CEQA guidelines or significance thresholds for use in GHG analyses. However, NCUAQMD Rule 111 (Federal Permitting Requirements for Sources of Greenhouse Gases) was adopted in 2011 to regulate GHG emissions from stationary sources. A new stationary source subject to this rule must be permitted and must implement Best Available Control Technology for greenhouse gas emissions.

Humboldt County General Plan

The Humboldt County General Plan predates current planning to address climate change and GHG emissions; therefore, there are no applicable goals and policies in the General Plan. Humboldt County is currently in the process of updating its General Plan, which may ultimately include GHG emission reduction targets, measures to reduce such emissions, and policies that are responsive to GHG reduction. Because adoption of the Humboldt County General Plan Update is not anticipated to occur

prior to certification of this project-level EIR, a consistency evaluation of the project against draft policies is not included in this EIR.

A Draft Climate Action Plan prepared in 2012 as part of the General Plan Update includes a comparison of greenhouse gas emissions from 2006 and 1990 (Humboldt County 2012). The emissions of carbon dioxide equivalents in unincorporated Humboldt County in 2006 were shown to have declined by approximately a half million metric tons when compared to 1990 levels. Such decreases may be attributed to a decline in industrial emissions in Humboldt County since 1990 related to a decline in the lumber industry and closure of several major industrial facilities related to timber processing (Humboldt County 2012).

3.7.3 Evaluation Criteria and Significance Thresholds

The project would cause a significant impact related to GHG emissions, as defined by the CEQA Guidelines (Appendix G), if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

3.7.4 Methodology

There is currently no applicable federal, State, or local significance thresholds pertaining to construction activities. Therefore, the analysis of construction-related GHG emissions uses a qualitative approach in accordance with Section 15064.4(a)(2) of the CEQA Guidelines.

For operation, per NCUAQMD Rule 111 (Federal Permitting Requirements for Sources of Greenhouse Gases), generation of GHG emissions would be considered significant if operation of the project would result in new stationary source that has the potential to emit greenhouse gas emissions greater than or equal to 100,000 tons per year of CO₂e emissions (NCUAQMD 2015).

For determining a conflict with an applicable plan, the project is evaluated for its compliance with the State's First Update Climate Change Scoping Plan (the implementing tool of AB 32) as a plan adopted for the purpose of reducing GHG emissions. There are no county-level plans that have been adopted for the purpose of reducing GHG emissions.

GHG emissions, by their nature, represent a cumulative impact. No single project could generate enough greenhouse gas emissions to noticeably change the global average temperature. Instead, GHG emissions contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change. Therefore, the project analysis is discussed in the context of the cumulative impact.

3.7.5 Impacts and Mitigation Measures

Impact: GHG-1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

Construction

Project construction activities would result in a temporary increase in GHG emissions, including exhaust emissions from on-road haul trucks, worker commute vehicles, and off-road heavy duty equipment. Emissions during construction would not be a considerable contribution to the cumulative GHG impact, given that construction would be temporary, of short duration, and would not require a large fleet of earthmoving equipment and soil off hauling beyond the normal equipment and activities related to such a project as the Downtown Wastewater Development Project.

Operation

Operation of the project would result in GHG emissions from new on-site stationary sources (diesel generator set, etc) and mobile sources (worker trips). Implementation of the project would add approximately three to six worker trips per week to the site. This small increase to mobile source emission is considered less than significant.

The new on-site stationary sources would be regulated by the NCUAQMD through Rule 111 – Federal Permitting Requirements for Sources of Greenhouse Gases. Under Rule 111 the Air Pollution Control Officer would evaluate a stationary source's compliance with the emission limits. If the source has the potential to emit GHGs above the limit, the source would need to comply with District Rule 110 (see Section 3.3 Air Quality) and install applicable BACTs to reduce emissions below the limit. Because there is existing regulation that would prohibit the construction of new sources in exceedance of standards, or that did not provide offsets, the impact to GHG emissions from operation of the project would be less than significant.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

Impact: **GHG-2: Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.**

Construction

Construction of this project would not impede implementation of AB 32 or the framework outlined in the *First Update to the Climate Change Scoping Plan* (the implementing tool for AB 32). Although project construction may benefit from implementation of some of the State-level regulations and policies that will be implemented, such as the Phase 2 heavy-duty truck greenhouse gas standards proposed to be implemented within the transportation sector, the project would not impede the State in meeting the AB 32 greenhouse gas reduction goals. Because the project would not conflict with applicable plans, there would be no impact.

Operation

The *First Update to the Climate Change Scoping Plan* includes recommended actions for the Water Sector (including wastewater). Those related to wastewater include technology and administrative goals to incent resource-recovering wastewater treatment projects and establish wastewater-to-energy goals. Operation of this small wastewater treatment project would not conflict with, or impede the State's ability to implement, these high-level policy driven recommendations. Because the project would not conflict with the applicable plan, there would be no impact.

Mitigation: No mitigation is necessary.

Significance: **No Impact.**

3.7.6 Cumulative Impacts

Impact: **GHG-C-1: Would the project result in a cumulatively considerable contribution to a significant cumulative impact relative to greenhouse gas emissions.**

Greenhouse gas emissions, by their nature, represent a cumulative impact. No single project could generate enough greenhouse gas emissions to noticeably change the global average temperature. Instead, greenhouse gas emissions contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change. Therefore, the project analysis presented above represents the cumulative analysis for impacts from greenhouse gas emissions. The project analysis above found that impacts to GHG emissions would be less than significant.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

3.7.7 References

CARB, 2012, Status of Scoping Plan Recommended Measures, Accessed website at:

http://www.arb.ca.gov/cc/scopingplan/status_of_scoping_plan_measures.pdf.

CARB, 2013, California Greenhouse Gas Inventory for 2000-2011, August.

CARB, 2014, First Update to the Climate Change Scoping Plan: Building on the Framework, May.

North Coast Unified Air Quality Management District, 2010, Rule 110 – New Source Review and Prevention of Significant Deterioration, December 9.

North Coast Unified Air Quality Management District, 2011, Rule 111 – Federal Permitting Requirements for Sources of Greenhouse Gases, January 20.

North Coast Unified Air Quality Management District, 2015, Personal Communication: Jason Davis, Permitting & Planning Manager, March 26.

U.S. Environmental Protection Agency (U.S. EPA), 2013, Inventory of U.S. Greenhouse Gas Emissions and Sinks, April.

This page intentionally left blank

3.8 Hazards and Hazardous Materials

This section evaluates the potential impacts related to hazards and hazardous materials during construction and operation of the project. The Setting section describes the existing environmental setting as it relates to hazards and hazardous materials. The Regulatory Framework section describes the applicable regulations at the federal, State and local level. The impacts and mitigation measures section establishes the thresholds of significance, evaluates potential hazard and hazardous materials impacts, and identifies the significance of impacts. Where appropriate, mitigation is presented to reduce impacts to less than significant levels. This section is based in part on information from the Downtown Wastewater Development Project Hazardous Materials Corridor Study (Corridor Study) (GHD 2015) prepared for the project (reference Appendix F).

3.8.1 Setting

The following sections describe the environmental setting for hazards and hazardous materials within the Sewered Area, which includes the project sites and adjacent areas that could be affected by use or presence of hazardous materials.

3.8.1.1 Hazardous Materials Corridor Study

Methodology

The Corridor Study included reviewing government records for properties within 1/8 of a mile (660 feet) of the Sewered Area that may have potential for environmental concern during construction. The basis for the records review was a government database search conducted by Environmental Data Resources Inc. (EDR) (Appendix F).

The EDR Report identified sites that government regulatory agencies have reported as having environmental concerns, such as releases of contaminants to the soil and/or groundwater, underground storage tanks (USTs) or use of hazardous materials. GHD further researched listed sites that have the potential to affect the Sewered Area by reviewing available records on the State Water Resources Control Board (SWRCB) GeoTracker Website, by conducting a review of available Humboldt County Division of Environmental Health (HCDEH) files and interviewing HCDEH staff.

During the course of the Corridor Study, GHD conducted field reconnaissance along the public rights-of-way (ROWs) within the Sewered Area to determine if potential sites of concern existed which were not listed in the EDR Report. Project area reconnaissance was also performed to verify the locations of listed sites.

Hazard Ranking

A number of potentially impacted sites were identified in the EDR Report. Visual observations were made of the Sewered Area for gasoline service stations or other potentially impacted sites that were not listed in the EDR Report. Gasoline service stations are considered potentially impacted whether or not they are associated with known leaking USTs since gasoline stations are typically associated with petroleum hydrocarbons, benzene, toluene, ethylbenzene, and xylene (BTEX) and MTBE releases to the environment. Evidence of current and former gas stations was observed within the Sewered Area.

The Corridor Study assigned a Hazard Rank for each of the sites that could potentially impact the project, which is defined as follows:

Hazard Rank 1: A site that will likely affect project construction. Contamination of soil and/or groundwater is confirmed to be within the project area.

Hazard Rank 2: A site with the potential to affect the project, either because of the presence of contamination that may likely migrate into the project area or because the extent of contamination is unknown.

Hazard Rank 3: A site that is not known to be contaminated, but due to current or historical use could possibly have contamination that could affect project construction.

Hazard Rank 4: A site that has little or no potential to affect the project.

The Corridor Study identified six hazard rank sites with the potential for impacted soil and groundwater as shown below in Table 3.8-1 and Figure 3.8-1. None of the sites identified were assigned a hazard rank of 1 or 2; however, six were assigned a hazard rank of 3 based on historic or current activities.

Table 3.8-1 Sites with Potential Impacted Soil and Groundwater

Site	Hazard Rank	Phase I Map Id
L&M Renner Cardlock	3	1
Former Forks Union Station	3	2
California Department of Transportation Maintenance Station	3	3
Former Bigfoot Gas Mart/Current Chevron Station	3	4
Former Willow Creek BP/Current Patriot Station	3	5
Former Pilot Lumber Company	3	6

Source: Hazardous Materials Corridor Study, GHD, 2015.

Former Pilot Lumber Mill (Mill Property, Map ID 6)

The former Pilot Lumber Mill property is the location of the proposed wastewater treatment plant and sewage treatment disposal areas. Based on review of historical aerial photography, a lumber mill operated on the site from approximately the late 1940's to the early 1980's. The SWRCB Geotracker website identifies this mill property as the former Pilot Lumber Mill with a closed LUST case that was granted no further action in September 1996 for two USTs formerly located adjacent to the current building on the property. Information regarding the use of wood preservatives in the sawmill operations is unknown.

Review of historical aerial photography indicates that there was an L-shaped log pond located adjacent to the property building. Sediments present at the bottom of log ponds used in sawmill operations have been found to be impacted by chlorinated hydrocarbons resulting from the use of wood treatment chemicals and chemically treated lumber. As the operational practices of the sawmill are unknown and it is uncertain if wood treatment chemicals or chemically treated wood were utilized by the sawmill, there is potential for chlorinated hydrocarbon impacts to soil and groundwater in the vicinity of the former log ponds.

A teepee burner is visible in the east/central portion of the property in the 1947 aerial photograph. Historically, teepee burners were used to burn wood waste generated from sawmill operations. Dioxins, furans and polycyclic aromatic hydrocarbons (PAHs) are toxic by-products of burning wood in conjunction with chlorinated compounds (wood treatment chemicals). Dioxins and furans are known to be persistent in soil and generally concentrated in close proximity to where they were generated.

The former teepee burner and log pond were located approximately 100 feet (or greater) north of the proposed effluent disposal leach field. The operational practices of the former lumber mill operations at the site are unknown and it is uncertain if wood treatment chemicals, or chemically treated wood was used at the property. As releases of petroleum and chlorinated hydrocarbons, metals, PAHs, dioxin and furans to soil, surface water and groundwater have been documented at other former sawmills in Humboldt County, there is the potential for impacted soil and groundwater beneath the property resulting from the former lumber mill operations.

Former and Current Commercial Gasoline Stations

Figure 3.8-1 shows Map IDs 1, 2, 4, and 5 which are the locations of the three current (L&M Renner Cardlock, Chevron, and Patriot) and one former (former Fork's Union Station) commercial gasoline stations within the Sewered Area. Based on review of the information available on the SWRCB Geotracker and the DTSC Envirostor websites and at the HCDEH, there are no open cases regarding impacted soil and groundwater from LUSTs or other sources located within the Sewered Area. The current Chevron and Patriot stations are former LUST cases which were subsequently granted no further action by the HCDEH. Due to the nature of underground and aboveground storage tanks, piping, and distribution systems associated with current and former commercial gasoline stations there is the potential for these systems to leak, releasing gasoline and diesel, as these systems have been documented to fail. There is the potential for petroleum hydrocarbon impacted soil and groundwater to be present in the vicinity of the current and former commercial gasoline stations located within the Sewered Area.

California Department of Transportation Maintenance Station (Map ID 3)

The California Department of Transportation (Caltrans) Maintenance Station was identified in the LUST database. Based on review of the file available at the HCDEH (Local Oversight Program [LOP] case number 12040), four former USTs were utilized on the property for the storage of gasoline, diesel, and waste oil. The USTs were removed in March 1988 at which time petroleum hydrocarbon impacted soil in the vicinity of the waste oil tank cavities was identified. Based on information available in the HCDEH file, soil and groundwater impacts associated with the former waste oil tank was limited and did not extend offsite. The HCDEH issued a Remedial Action Completion Certification in August 1999 stating that assessment and remediation for the petroleum hydrocarbon impacts to soil and groundwater at this site was complete and no further action was warranted regarding the former USTs. Caltrans currently maintains this maintenance station; however, it is unknown if it is still used for vehicle fueling. If USTs are present at the site, it is possible that soil and groundwater may be impacted due to the nature of underground storage of petroleum products and fueling operations.

3.8.1.2 Definition of Hazardous Materials

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, State, or local agency, or if it has characteristics defined as hazardous by such an agency. Factors that influence the health effects of exposure to hazardous materials include the dose to which the person is exposed, the frequency of exposure, the exposure pathway, and individual susceptibility.

The CCR defines a hazardous material as a substance that, because of physical or chemical properties, quantity, concentration, or other characteristics, may either: (1) cause an increase in mortality or an increase in serious, irreversible, or incapacitating, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of, or otherwise managed (CCR, Title 22, Division 4.5, Chapter 10, Article 2, Section 66260.10). Hazardous materials are classified according to four properties: toxicity, ignitability, corrosivity, and reactivity (CCR, Title 22, Chapter 11, Article 3), which are defined in the CCR, Title 22, Sections 66261.20-66261.24.

3.8.1.3 *Potential Receptors/Exposure*

The sensitivity of potential receptors in the areas of known or potential hazardous materials contamination is dependent on several factors, the primary factor being an individual's potential pathway for exposure. Exposure pathways include external exposure, inhalation, and ingestion of tainted air, water, or food. The magnitude, frequency, and duration of human exposure can cause a variety of health affects ranging from short-term acute symptoms or long term chronic effects. Potential health effects from exposure can be evaluated in a health risk assessment. The principle elements of exposure assessments typically include:

- Evaluation of the fate and transport processes for hazardous materials at a given site;
- Identification of potential exposure pathways;
- Identification of potential exposure scenarios;
- Calculation of representative chemical concentrations;
- Estimation of potential chemical uptake.

Schools and residences are examples of sensitive receptors that could be susceptible to significant effects from exposure to hazardous materials. There are no schools within 0.25 mile of the Sewered Area. The closest school to the Sewered Area is Trinity Valley Elementary School which is approximately 0.6 mile northwest of the Sewered Area. There are approximately 46 residential units within the Sewered Area. The potential exposure of workers, contamination of soils and groundwater, and transportation-related hazards are discussed below.

3.8.1.4 *Fire Hazards*

Fire protection in Humboldt County is provided by local districts, cities, and CalFire. The Sewered Area is within the Willow Creek Fire Protection District. CalFire identifies fire hazard severity zones in State Responsibility Areas (SRA) throughout California. The project area is located in a very high and high fire hazard severity zone within the SRA (CalFire 2007). The County of Humboldt Office of Emergency Services coordinates emergency response in Humboldt County through the Humboldt Operational Area. The Humboldt Operational Area is composed of the County of Humboldt, serving as the lead agency, and all political subdivisions (cities and Special Districts) within the county.

3.8.1.5 *Airports*

The closest airport to the project area is the Hoopa Airport north of Willow Creek approximately 7.5 miles via Highway 96. The second closest public airport (to drive to) is the Arcata/Eureka Airport in McKinleyville, approximately 25 aerial miles west of the project area. There is a private airfield at the Mercer Fraser Company Willow Creek Plant north of Willow Creek (approximately 0.6 mile north of the intersection of Highway 299 and 96) on the east side of Highway 96.

3.8.2 Regulatory Framework

Hazardous materials and hazardous wastes are subject to numerous federal, State, and local laws and regulations intended to protect public health and safety and the environment. The EPA, DOT, Cal/EPA, and DTSC are the primary agencies that enforce these regulations. The main focus of the Fed/OSHA and Cal/OSHA are to prevent work-related injuries and illnesses, including those from exposures to hazardous materials. CalFire implements fire safety regulations. In accordance with Chapter 6.11 of the California Health and Safety Code (CHSC, Section 25404, et seq.), local regulatory agencies enforce many federal and State regulatory programs through a Certified Unified Program Agency (CUPA) program, including:

- State Uniform Fire Code requirements (Section 80.103 of the Uniform Fire Code as adopted by the State Fire Marshal pursuant to Health and Safety Code Section 13143.9);
- Underground storage tanks (Chapter 6.7 of the Health and Safety Code, Sections 25280 et seq.).

The CUPA for Humboldt County is the Humboldt County Division of Environmental Health.

3.8.2.1 **Federal**

The primary federal agencies with responsibility for hazardous materials management include the US EPA, Fed/OSHA, and the DOT. Federal laws, regulations, and responsible agencies relevant to the proposed project are summarized in Table 3.8-2.

Table 3.8-2 Federal Laws and Regulations Related to Hazardous Materials Management

Classification	Law or Responsible Federal Agency	Description
Hazardous Materials Management and Soil and Groundwater Contamination	Community Right-to-Know Act of 1986 (also known as Title III of the SARA)	Imposes requirements to ensure that hazardous materials are properly handled, used, stored, and disposed of and to prevent or mitigate injury to human health or the environment in the event that such materials are accidentally released.
	Comprehensive Environmental Response, Compensation and Liability Act of 1980 (amended by SARA 1986 and Brownfields Amendments 2002)	Regulates the cleanup of sites contaminated by releases of hazardous substances.

Classification	Law or Responsible Federal Agency	Description
Hazardous Materials Transportation and Handling	U.S. Department of Transportation	Has the regulatory responsibility for the safe transportation of hazardous materials. The DOT regulations govern all means of transportation except packages shipped by mail (49 CFR).
Occupational Safety	Occupational Safety and Health Act of 1970	Fed/OSHA sets standards for safe workplaces and work practices, including the reporting of accidents and occupational injuries (29 CFR).

State and local agencies often have either parallel or more stringent regulations than federal agencies. In most cases, state law mirrors or overlaps federal law and enforcement of these laws is the responsibility of the State or of a local agency to which enforcement powers are delegated. For these reasons, the requirements of the law and its enforcement are discussed under either the State or local regulatory section.

3.8.2.2 State

Soil and Groundwater Contamination

The cleanup of sites contaminated by releases of hazardous substances is regulated primarily by the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), which was amended by the Superfund Amendment and Reauthorization Act of 1986 (SARA), the Brownfields Amendments (2002) and by similar State laws. Under CERCLA, the EPA has authority to seek the parties responsible for releasing hazardous substances and to ensure their cooperation in site remediation. CERCLA provides a defense to CERCLA liability, for those persons who could demonstrate, among other requirements, that they “did not know and had no reason to know” prior to purchasing a property that any hazardous substance that is the subject of a release or threatened release was disposed of on, in, or at the property. Such persons, to demonstrate that they had “no reason to know” must have undertaken, prior to, or on the date of acquisition of the property, “all appropriate inquiries” (AAI) into the previous ownership and uses of the property consistent with good commercial or customary standards and practices.

The State’s Hazardous Waste and Substances Sites List (Cortese List, Government Code Section 65962.5) identifies sites with leaking underground fuel tanks, hazardous waste facilities subject to corrective actions, solid waste disposal facilities from which there is a known migration of hazardous waste, and other sites where environmental releases have occurred. Before a local agency accepts an application as complete for any development project, the applicant must certify whether or not the project site is in the Cortese List. Databases that provide information regarding the facilities or sites identified as meeting Cortese List requirements are managed by the DTSC and SWRCB. At sites where contamination is suspected or known to have occurred, the site owner is required to perform a site investigation and conduct site remediation, if necessary. There are two clean-up standards; one for residential and the

other for commercial/industrial land uses. Standards are set for soil, groundwater, soil gas, and vapor intrusion of contaminants into buildings.

Hazardous Materials Transportation

The State of California has adopted DOT regulations for the intrastate movement of hazardous materials. State regulations are contained in Title 26 of the CCR. In addition, the State of California regulates the transportation of hazardous waste originating in the State and passing through the State. Both regulatory programs apply in California. The two State agencies that have primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol (CHP) and Caltrans.

Occupational Safety

Worker health and safety is regulated at the federal level by the U.S. Department of Labor, Occupational Safety and Health Administration (Fed/OSHA). Under this jurisdiction, workers at hazardous waste sites (or workers coming into contact with hazardous wastes that might be encountered during excavation of contaminated soils) must receive specialized training and medical supervision according to the HAZWOPER regulations. Worker health and safety in California is regulated by Cal/OSHA, Fed/OSHA's counterpart. California standards for workers dealing with hazardous materials (including hazardous wastes) are contained in CCR Title 8. DTSC and the State Department of Occupational Health and Safety are the agencies that are responsible for overseeing that appropriate measures are taken to protect workers from exposure to potential soiled groundwater contaminants. At sites known or suspected to have soil or groundwater contamination, a site health and safety plan must be prepared and generally require approval by the CUPA. The health and safety plan establishes policies and procedures to protect workers and the public from exposure to potential hazards at a contaminated site.

Emergency Response

California has developed an emergency response plan to coordinate emergency services provided by federal, State, and local government, and private agencies. Responding to hazardous materials incidents is a part of this plan. The plan is administered by the State Office of Emergency Services (OES), which coordinates the responses of other agencies such as local fire and police agencies, emergency medical providers, CHP, the CDFW, and Caltrans.

Humboldt County has an adopted Humboldt County Operational Area Hazard Mitigation Plan as identified below. FEMA approved the Humboldt Operational Area Hazard Mitigation Plan on March 20, 2014.

Risk of Fires

The California PRC sets forth fire safety regulations that include the following:

- Earthmoving and portable equipment with internal combustion engines must be equipped with a spark arrestor to reduce the potential for igniting a wildland fire (PRC Section 4442)
- Appropriate fire suppression equipment must be maintained during the highest fire danger period – from April 1 to December 1 (PRC Section 4428)
- On days when a burning permit is required, flammable materials must be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame, and the construction contractor would maintain the appropriate fire suppression equipment (PRC Section 4427)

- On days when a burning permit is required, portable tools powered by gasoline-fueled internal combustion engines must not be used within 25 feet of any flammable materials (PRC Section 4431)

3.8.2.3 Regional and Local

Humboldt County Operational Area Hazard Mitigation Plan

The 2014 Humboldt County Operational Area Hazard Mitigation Plan is the county's plan to identify and reduce hazards before any type of hazard event occurs. It aims to reduce losses from future disasters such as dam failure, drought, earthquake, fish losses, flooding, landslide, severe weather, tsunami, and wildfire. The plan also includes a vulnerability analysis and identifying mitigation initiatives and implementation.

Humboldt County Emergency Operations Plan

The Humboldt County Emergency Operations Plan (EOP) addresses the planned response to extraordinary emergency situations associated with natural disasters, technological incidents, and national security emergencies in or affecting Humboldt County. The plan also addresses integration and coordination with other governmental levels when required. The EOP accomplishes the following:

- Establishes the emergency management organization required to mitigate any significant emergency or disaster affecting Humboldt County
- Identifies the policies, responsibilities, and procedures required to protect the health and safety of Humboldt County communities, public and private property, and the environmental effects of natural and technological emergencies and disasters
- Establishes the operational concepts and procedures associated with field response to emergencies, County Emergency Operations Center (EOC) activities, and the recovery process

Humboldt County General Plan

The following goals and policies from the Humboldt County General Plan applicable to the proposed project are as follows:

3290 Goals

1. *To reduce public exposure to natural and manmade hazards.*

3291 Policies

1. General

Regulate land use to ensure that development in potentially hazardous areas will not preclude preserving and promoting public safety. Potentially hazardous areas include, but are not limited to, steep slopes, unstable soils areas, on active earthquake fault lines, in extreme wildland fire areas, in airport flight path zones, and in flood plains and tsunami runoff areas.

3. Flood

- A. *The County shall participate in the Federal Flood Insurance Program to regulate land uses in flood hazard areas in order to minimize loss of life and property, and in order to minimize public flood-related expense.*

4720 Policies

1. *Proposed development shall be adequately serviced by water supplies for fire protection or shall have a letter from an appropriate fire protection agency indicating that adequate fire protection can be provided.*

3.8.3 Evaluation Criteria and Significance Thresholds

Based on Appendix G of the CEQA Guidelines, a hazards or hazardous materials impact is considered significant if implementation of the proposed project would do any of the following:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area;
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

3.8.3.1 Areas of No Project Impact

As explained below, construction and operation of the project would not result in impacts related to a few of the significance criteria identified in Appendix G of the current CEQA Guidelines. The following significance criteria are not discussed further in the impact analysis, for the following reasons:

- **Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.** No schools are located within one-quarter mile of the Sewered Area. The closest school to the Sewered Area is the Trinity Valley Elementary School which is approximately 0.6 mile northwest of the Sewered Area. Therefore, the proposed project's effects on schools will not be evaluated further in this Draft EIR.
- **Within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for**

people residing or working in the project area. The Sewered Area is not located within an airport land use plan or within two miles of a public airport. Therefore, this significance criterion is not applicable to the proposed project and is not discussed further in this Draft EIR.

- **Within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.** There is a private airfield at the Mercer Fraser Company Willow Creek Plant north of Willow Creek on the east side of Highway 96 approximately 0.6 mile north of the intersection of Highways 299 and 96. However, the proposed project would not include any activities that would result in a safety hazard for people working or residing in the area. No impact has been identified; therefore, this significance criterion is not discussed further in this Draft EIR.
- **Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.** The proposed project would not impair or interfere with the county's Operational Area Hazard Mitigation Plan or EOP and does not include development that would significantly increase the number of people exposed to potential emergencies. Construction would take place primarily within road ROWs. Lane closures would be expected during construction of the collection area with traffic control personnel directing traffic around the area. However, this would only be temporary, just during construction and would not include the closure of any roadway. Additionally, at no time would Highway 299 be closed. Emergency vehicles would be able to pass without disruption. No impact would occur.
- **Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.** The proposed project does not include any structures for human occupancy and the project components are not located in wildlands. No impact has been identified, therefore, this significance criterion is not applicable to the proposed project and is not discussed further in this Draft EIR.

3.8.4 Methodology

This analysis considers the range and nature of foreseeable hazardous materials use, storage, and disposal resulting from the proposed project and identifies the primary ways that these hazardous materials could expose the environment or individuals to health and safety risks. Local and State agencies would be expected to continue to enforce applicable regulations to the extent that they currently do.

The following reports were used in the analysis of hazardous conditions for the proposed project:

- Preliminary Engineering Report for the proposed project (GHD 2014);
- Downtown Wastewater Development Project Hazardous Materials Corridor Study (GHD 2015);
- Available literature, including documents published by county, State and federal agencies;
- Applicable elements from the Humboldt County General Plan;
- Geotechnical Investigation (Crawford & Associates 2015).

The information obtained from these sources was reviewed and summarized to establish existing conditions and to identify potential environmental effects, based on the significance thresholds in this

section. In determining the level of significance, the analysis assumes that construction and operation of the proposed project would comply with federal, State, and local regulations and ordinances.

3.8.5 Impacts and Mitigation Measures

Impact: **HAZ-1: Would the project create a significant hazard to the public or the environment through the routine transport, use, disposal, or accidental release of hazardous materials.**

Construction

Construction of the proposed project would involve the use of materials that are generally regarded as hazardous, such as gasoline, diesel fuel, hydraulic fluids, paint, and other similar materials. The risks associated with the routine transport, use, and storage of these materials during construction are anticipated to be relatively small. With appropriate handling and disposal practices, there is relatively little potential for an accidental release of hazardous materials during construction, and the likelihood is small that workers and the public would be exposed to health hazards. Storage and handling of materials during construction would employ BMPs and would be subject to provisions of the project Storm Water Pollution Prevention Plan, which is described in greater detail in Section 3.9.5 (Impact HYD-1). BMPs would include provisions for safely refueling equipment, and spill response and containment procedures. Therefore, the potential impacts due to routine transport, use, or disposal of hazardous materials during construction would be less than significant. However, the contractor would be required to implement Mitigation Measures HAZ-1 and HAZ-2 to ensure any impacts would remain less than significant.

Operation

Operation of pipelines and the pump station(s) would not require storage and regular use of hazardous materials. The proposed wastewater treatment facility, however, would use sodium hypochlorite for disinfecting equipment, etc., which is a classified hazardous substance. Sodium hypochlorite is the active ingredient in bleach; it is also used to chlorinate pools. Sodium hypochlorite would be stored in a 230-gallon tote (square reusable industrial container, approximately 4 feet on each side, designed for the transport and storage of bulk liquid and granulate substances). Small amounts of fuels and other similar materials could also be used and stored on site. Access to chemicals would be controlled to ensure safety, and appropriate secondary containment for treatment chemicals would be provided as required by the Humboldt County Fire Department. Accordingly, reasonably foreseeable upset and accident conditions are not expected to result in a significant hazard to the public or environment. However, to ensure the potential hazards would remain less than significant and operation of the facility would not subject the public to undue risks due to exposure of hazardous materials, Mitigation Measure HAZ-3, which would require preparation and implementation of a Hazardous Materials Business Plan, would be implemented. This measure would ensure proper handling and storage of hazardous materials at the proposed wastewater treatment facility.

Mitigation Mitigation Measure HAZ-1: Preparation of Hazardous Substance Control and Emergency Response Plan

The WCCSD shall ensure that an environmental training program is established to communicate environmental concerns and appropriate work practices, including spill prevention, emergency response measures, and proper BMPs implementation, to all field personnel. The training program shall emphasize site-specific physical conditions to improve hazard prevention (e.g., identification of potentially hazardous substances) and shall include a review of all site-specific plans.

A Hazardous Substance Control and Emergency Response Plan shall be prepared by the contractor. This plan shall be submitted to the county along with the grading permit application for each structure or with the encroachment permit application for the construction of pipelines. The plan shall prescribe hazardous-materials handling procedures for reducing the potential for a spill during construction and shall include an emergency response program to ensure quick and safe cleanup of accidental spills. Furthermore, the plan shall identify areas where refueling and vehicle maintenance activities and storage of hazardous materials, if any, shall be permitted. These directions and requirements shall also be included in the project's SWPPP.

Mitigation Measure HAZ-2: Control of Minor Releases

Oil-absorbent material, tarps, and storage drums shall be used to contain and control any minor releases in construction areas. Emergency spill supplies and equipment shall be kept adjacent to all areas of work and in staging areas, and shall be clearly marked. Detailed information for responding to accidental spills and for handling any resulting hazardous materials shall be provided in the project's Hazardous Substances Control and Emergency Response Plan.

Mitigation Measure HAZ-3: Preparation of Hazardous Materials Business Plan

The WCCSD shall prepare a Hazardous Materials Business Plan for the wastewater treatment facility that would address handling and storage of all hazardous chemicals that would be used during the treatment process. The plan shall address containment, site layout, and emergency response and notification procedures for a spill or release.

Implementation of Mitigation Measures HAZ-1, HAZ-2, and HAZ-3 would ensure a less than significant impact for the transport, use, or disposal of hazardous materials by providing emergency response training, hazardous materials handling procedures, and proper handling and storage of hazardous materials.

Significance: Less than significant with mitigation.

Impact: HAZ-2: Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.

The State's Hazardous Waste and Substances Sites List (Cortese List, Government Code Section 65962.5) identifies sites with leaking underground fuel tanks, hazardous waste facilities subject to corrective actions, solid waste disposal facilities from which there is a known migration of hazardous waste, and other sites where environmental releases have occurred. According to the Corridor Study and EDR Report prepared for the Corridor Study, review of the information available on the SWRCB Geotracker and the DTSC Envirostor websites and at the HCDEH there are no open cases regarding impacted soil and groundwater from LUSTs or other sources located within the project area. All cases were either remediated or closed. The project is not located on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and would not create a significant hazard to the public or the environment. The impact is less than significant.

Mitigation: No mitigation is necessary.

Significance: Less than significant.

3.8.6 Cumulative Impacts

Impact: **HAZ-C-1: Would the project result in a cumulatively considerable contribution to a significant cumulative impact related to hazards or hazardous materials.**

There are no known cumulative projects in the project vicinity with which to analyze for cumulative impacts; however, the storage, use, disposal, and transport of hazardous materials associated with the proposed project could result in potential spills and accidents. All construction activities, as well as any new future development, would be subject to compliance with existing hazardous materials regulations (as noted above). Future development would be required to evaluate their respective hazards and hazardous materials impacts on a project-by-project basis. Compliance with all federal, State, and local regulations during the construction and operation of new developments would ensure that there are no cumulatively considerable significant hazards to the public or the environment associated with the routine transportation, use, disposal or release of hazardous materials, thereby ensuring that a less than significant, cumulatively considerable, impact would occur.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

3.8.7 References

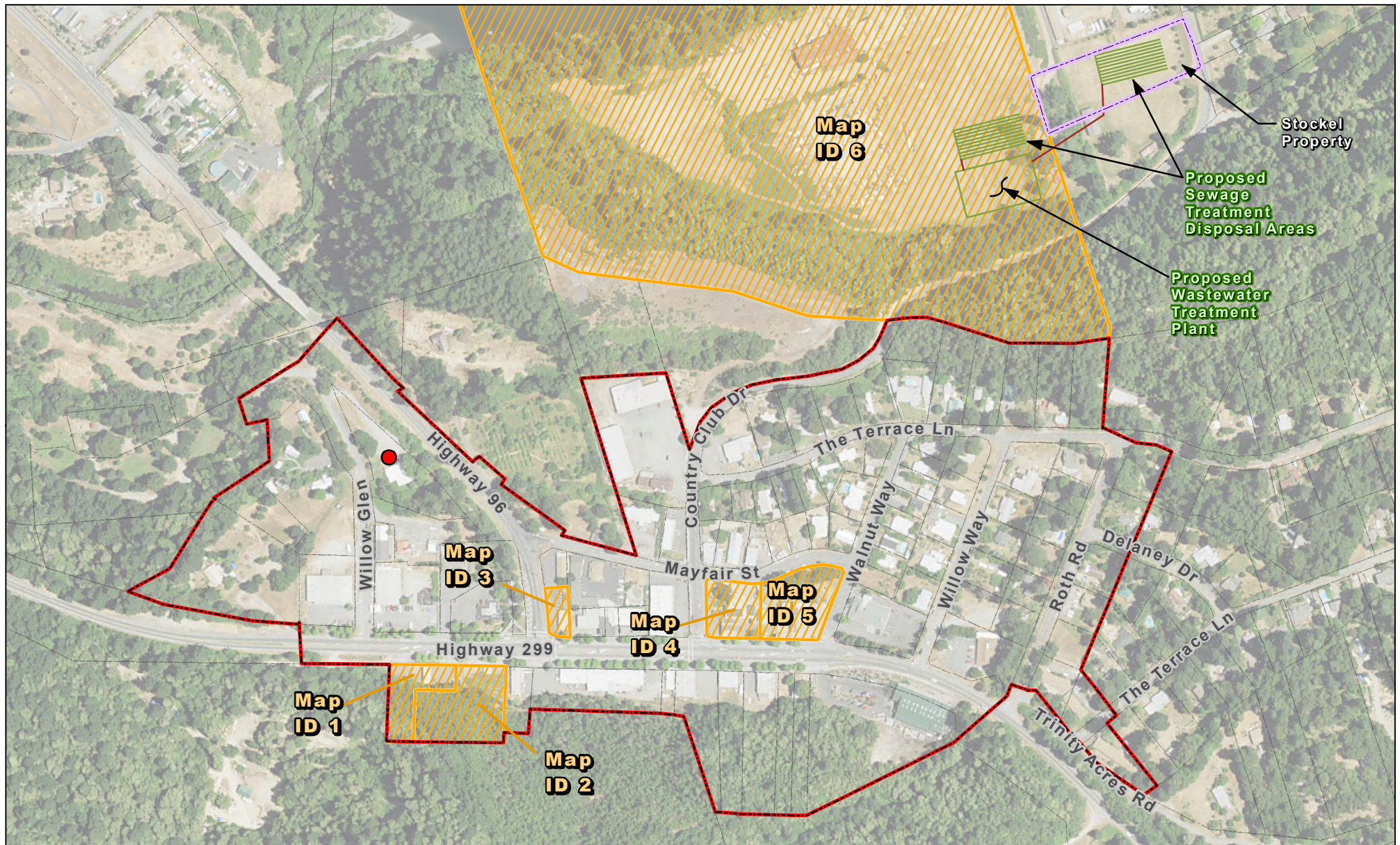
California Department of Forestry and Fire Protection (CalFire), 2007, Fire Hazard Severity Zones in SRA, November 7.

Crawford & Associates, 2015, Draft Geotechnical Report, Wastewater Treatment System, Willow Creek, California, April.

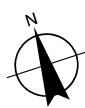
GHD, 2014, Willow Creek Community Services District Downtown Wastewater Development Preliminary Engineering Report - Wastewater Facilities, November.

GHD, 2015, Willow Creek Community Services District Downtown Wastewater Development Project Hazardous Materials Corridor Study, April.

This page intentionally left blank



Paper Size ANSI A
 0 100 200 300 400 500
 Feet
 Map Projection: Lambert Conformal Conic
 Horizontal Datum: North American 1983
 Grid: NAD 1983 StatePlane California 1 FIPS 0401 Feet



Hazard Rank 3



Stockel Property

Service Area



Sewered Area



Parcel Boundaries



Willow Creek Community
 Services District HQ



Willow Creek Community Services District
 Downtown Wastewater Development Project
 Hazardous Materials Corridor Study

Job Number	8410746.05
Revision	A
Date	03 Apr 2015

Sites of Interest and Hazard Ranks **Figure 3.8-1**

G:\12057 WillowCreekCSD\8410746 WCCSD-WWTP Planning\08-GIS\Maps\Figures\EIF\F3_8-1_Sites_of_Interest.mxd

180 Lonsdale Street Melbourne VIC 3000 Australia T 61 3 8687 8000 F 61 3 8687 8111 E melmail@ghd.com W www.ghd.com

© 2014. While every care has been taken to prepare this map, GHD and Willow Creek Community Services District make no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and cannot accept liability and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred by any party as a result of the map being inaccurate, incomplete or unsuitable in any way and for any reason.

Data source: Aerial NAIP 2012, 1 m resolution. Created by: gldavidson

This page intentionally left blank

3.9 Hydrology and Water Quality

This section evaluates the potential impacts related to hydrology and water quality during construction and operation of the proposed project. To provide the basis for this evaluation, the Setting section describes the hydrological setting for the project area, including regional and local surface water and groundwater characteristics. Descriptions in this section are based on reviews of published information, reports, and plans regarding regional and local hydrology, climate, topography, and geology. The evaluation and impacts sections establish the thresholds of significance, evaluate potential hydrology and water quality impacts, and identify the significance of impacts. Where appropriate, mitigation measures are presented to reduce potential impacts to a less-than-significant level. The Groundwater Antidegradation Analysis report (Appendix H, GHD 2015) prepared for the project was used in the analysis of potential groundwater impacts.

3.9.1 Setting

The Sewered Area in the community of Willow Creek is an area of approximately 63.5 acres encompassing downtown commercial businesses, as well as residential properties. The Sewered Area is underlain primarily by Galice Formation consisting of highly deformed, thinly bedded shale and slate. Galice Formation is part of the Western Jurassic terrain. Mesozoic ultrabasic complexes are extensive in the Klamath Mountains and appear to intrude segments of most of the major lithotectonic belts of the region. The fluvial terrace is a Quaternary river deposit consisting primarily of rounded gravels and sand. Underlying the river terrace is the Galice Formation.

3.9.1.1 Hydrology

According to information obtained from the Western Regional Climate Center, rainfall in Willow Creek is lowest in the summer months, averaging a total rainfall amount of approximately 1 inch combined in June, July, and August. In spring (March – May) and fall (September – November), average rainfall is approximately 12 inches per season; and, in winter (December – February), rainfall averages around 27 inches. Therefore, the mean annual rainfall is approximately 52 inches. Snowfall occurs during the winter season, typically above 2,000-foot elevation, with significant accumulation at elevations above 4,000 feet. Snow accumulation usually remains at higher elevations through May (TVCE 2014).

The Willow Creek community is in the Willow Creek Hydrologic Sub-area of the Lower Trinity River Hydrologic Area, located in the Trinity River Hydrologic Unit in Humboldt County. The downtown community drains into Willow Creek, a tributary to the Trinity River. The Trinity River then converges with the Klamath River approximately 40 river miles from where it ultimately discharges into the Pacific Ocean.

The Willow Creek watershed includes the entire drainage area for Willow Creek and its tributaries. Perennial tributaries include (from mouth to head) Boise Creek, Brannan Creek, Greg Creek, Three Creeks, East Fork Willow Creek, Ruby Creek, Cedar Creek, and Low Gap Creek. The Willow Creek watershed encompasses approximately 30,080 acres of land, with a majority of this area being undeveloped and forested.

3.9.1.2 Water Quality

Streamline Planning Consultants conducted a stormwater water quality sampling report in 2012 for the WCCSD to assess water quality and the environment, local onsite wastewater treatment systems

(OWTS), draft a Septic Maintenance Ordinance, and perform public education (Streamline Planning Consultants 2012). Water quality monitoring was performed to track bacterial levels and optical brighteners (OB) in creeks below the areas dependent on OWTS. Downtown Willow Creek was assessed based on certain variables: high bacterial or OB indicator levels. Results from water quality monitoring indicated that runoff from downtown Willow Creek is not substantially polluted from OWTS sources; however, OWTS cannot be ruled out as the source of at least some of the positive bacterial results.

3.9.1.3 Storm Drainage

Storm drainage in the Sewered Area consists of stormdrains, culverts and storm drainage basins interspersed throughout the community. Detention ponds collect surface runoff and water is typically present during the wet months, but is dry during the summer.

3.9.1.4 Flooding

With its close proximity to the Trinity River, Willow Creek is also close to the 100-year floodplain (Figure 3.9-1). The 100-year floodplain follows the Trinity River to the north of Willow Creek's downtown area. FEMA has not officially mapped the 100-year floodplain upstream of the confluence of Trinity River/Willow Creek, although the 100-year flood elevation that FEMA mapped at the Trinity River/Willow Creek confluence can be approximated upstream of the confluence. Such an approximation is shown in Figure 3.9-1. It is important to note that this is only an approximation and does not designate the FEMA 100-year floodplain in this area. The floodplain does not encompass any of the proposed collection, treatment or disposal areas.

3.9.2 Regulatory Framework

3.9.2.1 Federal

Clean Water Act

The federal Clean Water Act (CWA), enacted by Congress in 1972 and amended several times since, is the primary federal law regulating water quality in the U.S. and forms the basis for several State and local laws throughout the country. The CWA established the basic structure for regulating discharges of pollutants into the waters of the U.S. The CWA gave the U.S. Environmental Protection Agency (U.S. EPA) the authority to implement federal pollution control programs, such as setting water quality standards for contaminants in surface water, establishing wastewater and effluent discharge limits for various industry categories, and imposing requirements for controlling nonpoint source pollution. At the federal level, the CWA is administered by the U.S. EPA and U.S. Army Corps of Engineers. At the State and regional levels in California, the act is administered and enforced by the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs).

Section 303(d) of the CWA requires state governments to present the U.S. EPA with a list of "impaired water bodies," defined as those water bodies that do not meet water quality standards, even after point sources of pollution have been equipped with the minimum required levels of pollution control technology. The Trinity River was designated a Wild and Scenic River on January 19, 1981 from Lewiston Dam to the Klamath River confluence.

Sections 404 and 401 of the CWA require permitting and State certification for construction and/or other work conducted in "waters of the United States." Such work includes levee work, dredging, filling, grading, or any other temporary or permanent modification of wetlands, streams, or other water bodies.

National Flood Insurance Program

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA also issues Flood Insurance Rate Maps identifying which land areas are subject to flooding. The maps provide flood information and identify flood hazard zones in each community. The design standard for flood protection is established by FEMA, with the minimum level of flood protection for new development determined to be the 1-in-100 annual exceedence probability (i.e. the 100-year flood event). The FEMA 100-year floodplain does not encompass any of the proposed collection, treatment or disposal areas (Figure 3.9-1).

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established in the CWA to regulate industrial and municipal discharges to surface waters of the United States. NPDES permit regulations have been established for broad categories of discharges including point source municipal waste discharges and nonpoint source stormwater runoff.

A NPDES permit is required when proposing to, or discharging of waste into any surface water of the state. For discharges to surface waters, these requirements become a federal NPDES Permit from the RWQCB covering the project area.

Federal Antidegradation Policy

The federal antidegradation policy set forth in 40 CFR §131.12. SWRCB Order No. 68-16 incorporates the federal antidegradation policy into the state policy for water quality control and ensures consistency with federal CWA requirements. This federal regulation establishes a three-part test for determining when increases in pollutant loadings or other adverse changes in surface water quality may be permitted:

- Existing instream water use and level of water quality necessary to protect the existing uses shall be maintained and protected.
- Where the quality of the waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.
- Where high quality waters constitute an outstanding National resource, such as waters of National and State Parks and wildlife refuges and waters of exceptional recreational or ecological significance, water quality shall be maintained and protected.

The federal antidegradation policy serves as a catch-all water quality standard to be applied where other water quality standards are not specific enough for a particular waterbody or where other water quality standards do not address a particular pollutant.

National Wild and Scenic Rivers Act

The National Wild and Scenic Rivers System was created by Congress in 1968 (Public Law 90-542; 16 U.S.C. 1271 et seq.) to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. The Act is notable for safeguarding the special character of these rivers, while also recognizing the potential for their appropriate use and development. It encourages river management that crosses political boundaries and promotes public participation in developing goals for river protection. Each river is administered by either a federal or State agency. Regardless of classification, each river in the National System is administered with the goal of protecting and enhancing the values that caused it to be designated.

As noted above, the Trinity River was designated a Wild and Scenic River on January 19, 1981 from Lewiston Dam to the Klamath River confluence. The primary agencies managing the river under the Wild and Scenic Rivers Act include the California Resources Agency, Bureau of Land Management, Six Rivers National Forest, Hoopa Valley Indian Reservation and Yurok Tribe.

3.9.2.2 State

Porter Cologne Water Quality Control Act

The Porter Cologne Water Quality Control Act is the primary statute covering the quality of waters in California. Under the Act, the SWRCB has the ultimate authority over State water rights and water quality policy. The nine RWQCBs regulate water quality under this Act through the regulatory standards and objectives set forth in Water Quality Control Plans (also referred to as Basin Plans) prepared for each region.

The five-member SWRCB allocates water rights, adjudicates water right disputes, develops statewide water protection plans, establishes water quality standards, and guides the nine RWQCBs located in the major watersheds of the State. The joint authority of water allocation and water quality protection enables the SWRCB to provide comprehensive protection for California's waters. The SWRCB is responsible for implementing the Clean Water Act, issues NPDES permits to cities and counties through RWQCBs, and implements and enforces the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) (Order No. 2009-0009, as amended by Order No. 2010-0014). Order No. 2009-0009 took effect on July 1, 2010 and was amended on February 14, 2011. The Order applies to construction sites that include one or more acre of soil disturbance. Construction activities include clearing, grading, grubbing, excavation, stockpiling, and reconstruction of existing facilities involving removal or replacement.

Fish and Game Code Section 1602

The California Department of Fish and Wildlife (CDFW) is responsible for conserving, protecting, and managing California's fish, wildlife, and native plant resources. To meet this responsibility, the Fish and Game Code (Section 1602) requires an entity to notify CDFW of any proposed activity that may substantially modify a river, stream, or lake. The CDFW requires a Stream Alteration Agreement (SAA) for projects that will divert or obstruct the natural flow of water, change the bed, channel or bank of any stream, or use any material from a streambed. The SAA is a contract between the applicant and the CDFW stating what can be done in the riparian zone and stream course. The department is interested in any work undertaken in or near a river, stream, or lake that flows at least intermittently through a bed or channel. This permit is required for any work that occurs in, on, over or under a waterway, from the bed of a stream to the top of the bank, any work that will divert or obstruct the natural flow of water, change the

bed, channel, or bank of any stream, or use any material from the streambed. This permit is also required when removing exotic vegetation from a riparian area.

If CDFW determines that the activity may substantially adversely affect fish and wildlife resources, a SAA will be prepared. The SAA includes reasonable conditions necessary to protect those resources and must comply with the CEQA. The entity may proceed with the activity in accordance with the final Agreement.

3.9.2.3 *Regional and Local*

Regional Water Quality Control Board

As explained above, RWQCBs adopt and implement Water Quality Control Plans (Basin Plans) which recognize the unique characteristics of each region with regard to natural water quality, actual and potential beneficial uses, and water quality problems. The current 2011 Basin Plan prepared by the North Coast NCRWQCB (NCRWQCB) provides a definitive program of actions designed to preserve and enhance water quality and to protect beneficial uses of water in the North Coast Region.

The NCRWQCBs' planning process also includes water quality planning programs (adoption, review, and amendment of statewide and basin water quality control plans and policies), including development and adoption of total maximum daily loads (TMDLs) and implementation plans; regulatory programs (permitting and control of discharges to water through "NPDES" and WDR permits, discharge to land – "Chapter 15," and stormwater and storage tanks programs); monitoring and quality assurance programs; nonpoint source management programs, including the "Watershed Management Initiative;" and funding assistance programs, including grants and loans.

North Coast RWQCB Basin Plan

As set forth in the Basin Plan, specific beneficial uses of surface water and groundwater have been established for the Hydrologic Area in which the project is located (see Section 3.9.1, Setting). To protect these beneficial uses, the Basin Plan sets forth the following water-resource protection objectives for inland surface waters:

Color: Waters shall be free of coloration that causes nuisance or adversely affects beneficial uses.

Tastes and Odors: Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or that cause nuisance or adversely affect beneficial uses.

Floating Material: Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.

Suspended Material: Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.

Settleable Material: Waters shall not contain substances in concentrations that result in deposition of material that causes nuisance or adversely affect beneficial uses.

Oil and Grease: Waters shall not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses.

Biostimulatory Substances: Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

Sediment: The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

Turbidity: Turbidity shall not be increased more than 20 percent above naturally occurring background levels. Allowable zones of dilution within which higher percentages can be tolerated may be defined for specific discharges upon the issuance of discharge permits or waiver thereof.

pH: The pH shall conform to those limits listed in the basin plan. The pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.2 units in waters with designated marine (MAR) or saline (SAL) beneficial uses nor 0.5 units within the range specified above in fresh waters with designated COLD or WARM beneficial uses.

Dissolved Oxygen: The dissolved oxygen concentrations shall not be reduced below the following minimum levels at any time:

- Waters designated WARM, MAR, or SAL 5.0 mg/l
- Waters designated COLD 6.0 mg/l
- Waters designated SPWN 7.0 mg/l
- Waters designated SPWN during critical spawning and egg incubation periods 9.0 mg/l

Bacteria: The bacteriological quality of waters of the North Coast Region shall not be degraded beyond natural background levels. In no case shall coliform concentrations in waters of the North Coast Region exceed the following:

- In waters designated for contact recreation (REC-1), the median fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed 50/100 ml, nor shall more than 10 percent of total samples during any 30-day period exceed 400/100 ml (State Department of Health Services).
- At all areas where shellfish may be harvested for human consumption (SHELL), the fecal coliform concentration throughout the water column shall not exceed 43/100 ml for a 5-tube decimal dilution test or 49/100 ml when a three-tube decimal dilution test is used (National Shellfish Sanitation Program, Manual of Operation).

Temperature: Temperature objectives for COLD interstate waters, WARM interstate waters, and Enclosed Bays and Estuaries are as specified in the "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays of California" including any revisions thereto. In addition, the following temperature objectives apply to surface waters:

- The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses.
- At no time or place shall the temperature of any COLD water be increased by more than 5°F above natural receiving water temperature.

- At no time or place shall the temperature of WARM intrastate waters be increased more than 5°F above natural receiving water temperature.

Toxicity: All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods as specified by the RWQCB.

The survival of aquatic life in surface waters subjected to a waste discharge, or other controllable water quality factors, shall not be less than that for the same water body in areas unaffected by the waste discharge, or when necessary for other control water that is consistent with the requirements for "experimental water" as described in Standard Methods for the Examination of Water and Wastewater, 18th Edition (1992). As a minimum, compliance with this objective as stated in the previous sentence shall be evaluated with a 96-hour bioassay.

In addition, effluent limits based upon acute bioassays of effluents will be prescribed. Where appropriate, additional numerical receiving water objectives for specific toxicants will be established as sufficient data become available, and source control of toxic substances will be encouraged.

Pesticides: No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses. There shall be no bioaccumulation of pesticide concentrations found in individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses. There shall be no bioaccumulation of pesticide concentrations found in bottom sediments or aquatic life.

Waters designated for use as domestic or municipal supply shall not contain concentrations of pesticides in excess of the limiting concentrations set forth in CCR, Title 22, Division 4, Chapter 15, Article 4, Section 64444.5.

Chemical Constituents: Waters designated for use as domestic or municipal supply shall not contain concentrations of chemical constituents in excess of the limits specified in CCR, Title 22, Chapter 15, Division 4, Article 4, Section 64435.

Waters designated for use as agricultural supply shall not contain concentrations of chemical constituents in amounts which adversely affect such beneficial use.

Radioactivity: Radionuclides shall not be present in concentrations which are deleterious to human, plant, animal or aquatic life nor which result in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal, or indigenous aquatic life.

Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of radionuclides in excess of the limits specified in CCR, Title 22, Division 4, Chapter 15, Article 4, Section 64443.

Water Quality Objectives for Groundwaters

Tastes and Odors: Groundwaters shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. Numeric water quality objectives have been developed by the State Department of Health Services and U.S. EPA. These numeric objectives, as well as those available in the technical literature, are incorporated into waste discharge requirements and cleanup and abatement orders as appropriate.

Bacteria: In groundwaters used for domestic or MUN, the median of the most probable number of coliform organisms over any 7-day period shall be less than 1.1 MPN/100 ml, less than 1 colony/100 ml, or absent (State Department of Health Services).

Radioactivity: Groundwaters used for domestic or MUN shall not contain concentrations of radionuclides in excess of the limits specified in CCR, Title 22, Division 4, Chapter 15, Article 5, Section 64443.

Chemical Constituents: Groundwaters used for domestic or MUN shall not contain concentrations of chemical constituents in excess of the limits specified in CCR, Title 22, Division 4, Chapter 15, Article 4, Section 64435 and Section 64444.5. Groundwaters used for agricultural supply shall not contain concentrations of chemical constituents in amounts that adversely affect such beneficial use.

Humboldt County General Plan

2553 Policies

- 5 *All development should be designed to minimize erosion and sedimentation.*

Goals

1. *To maintain or enhance the quality of the county's water resources and the fish and wildlife habitat utilizing those resources.*
2. *To maintain a dependable water supply, sufficient to meet existing and future domestic, agricultural, industrial needs and to assure that new development is consistent with the limitations of the local water supply.*

3361 Policies

2. *Regulate development that would pollute watershed areas.*
13. *Ensure that projects located within state designated wild, scenic or recreational river basins are consistent with the guidelines in the State Wild and Scenic Rivers Act (as amended).*

4235 Drainage

2. *Natural drainage ways shall be utilized where possible to convey drainage flows consistent with streamside management policies in the General Plan.*
3. *Drainage facilities shall be capable of passing a 10 year intensity storm without static head at entrance and passing a 100 year intensity storm without major damage. (Res. 85-81, 8/20/85)*

4530 Goals

1. *To ensure a safe means for waste disposal and protect the County's water resources for the public's health and safety.*

4531 Policies

2. *Responsible County agencies shall continue to coordinate with special districts in maintaining data on wastewater facility capacity.*
3. *Projects requiring public wastewater disposal shall receive public sewer commitments from the appropriate district or agency prior to receiving tentative approval.*

3.9.3 Evaluation Criteria and Significance Thresholds

The project would cause a significant impact related to hydrology and water quality, as defined by the CEQA Guidelines (Appendix G), if it would:

- Violate any water quality standards or waste discharge requirements;

- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Inundation by seiche, tsunami, or mudflow.

3.9.3.1 *Areas of No Project Impact*

As explained below, construction and operation of the project would not result in impacts related to a few of the significance criteria identified in Appendix G of the current CEQA Guidelines. The following significance criteria are not discussed further in the impact analysis, for the following reasons:

- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map. The proposed project does not include the construction of new housing or structures for human occupancy (Figure 3.9-1). Therefore, the significance criterion related to the placement of housing within a 100-year flood hazard zone is not applicable to the proposed project and is not discussed further.
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows. The proposed project does not include the construction of any new structures which would be located in the 100-year flood zone or which would impede or redirect flood flows (Figure 3.9-1). Therefore, the significance criterion related to the placement of structures within a 100-year flood hazard zone is not applicable to the proposed project and is not discussed further.
- Inundation by seiche, tsunami, or mudflow. The proposed project is not located near a large body of water capable of producing a seiche, is not located near the coast in a tsunami inundation area, and is not located next to steep slopes capable of a mudflow event. Therefore, the significance criterion related to the project being located in an area subject to inundation by a seiche, tsunami, or mudflow is not applicable to the proposed project and is not discussed further.

3.9.4 Methodology

Potential impacts on hydrology and water quality are analyzed based on the potential for the proposed project to result in physical hydrologic or hydrogeologic changes (e.g., flooding, erosion and siltation, changes in groundwater recharge) during construction or operation. Existing site conditions prior to construction of proposed project elements are compared to site conditions both during construction activities and after the project facilities are operational.

3.9.5 Impacts and Mitigation Measures

Impact: HYD-1: Would the project violate any water quality standards, substantially degrade water quality, or waste discharge requirements.

Construction

During the construction period, excavation and grading activities would result in exposure of soil to runoff, potentially causing entrainment of sediment in the runoff. Soil stockpiles and excavation within street ROW along the project alignment would be exposed to runoff and, if not managed properly, the runoff could cause increased sedimentation in sewers outside of the Sewered Area. The accumulation of sediment could result in blockage of flows, potentially resulting in increased localized ponding or flooding.

The potential for chemical releases is present at most construction sites. Once released, substances such as fuels, oils, paints, and solvents could be transported to nearby surface waterways and/or groundwater in stormwater runoff, wash water, and dust control water, potentially reducing the quality of the receiving waters. Also, if dewatering of excavations is necessary, the discharges from dewatering could affect surface water quality. However, potential impacts of dewatering would be addressed by treating water as needed before discharging to the storm drain system.

The WCCSD or its contractor would obtain coverage under the NPDES General Permit for Construction Activities, which would cover both runoff from the construction sites and disposal of groundwater from any dewatering (if needed) as an authorized non-stormwater discharge. The preparation and implementation of a project-specific Storm Water Pollution Prevention Plan (SWPPP) would reduce that impacts to storm water quality are less-than-significant. The County of Humboldt would require the contractor to prepare and submit a SWPPP, along with a Notice of Intent to comply with the General Construction Permit, before starting construction.

The project SWPPP would include a description of Best Management Practices (BMPs) to be applied to minimize the discharge of pollutants during construction. These BMPs would apply to all construction activities, including construction of the wastewater treatment facility, pump station(s) and pipelines. Construction-period BMPs would include, but are not limited to the following:

- Identifying all storm drains and creeks in the Sewered Area and adjacent to the wastewater treatment facility and pump station sites, and ensuring that all workers are aware of their locations to prevent pollutants from entering them.
- Developing an erosion control and sediment control plan for wind and rain.
- Developing spill response and containment procedures, and immediately cleaning up and disposing of any leaks or spills. Any leaking vehicles and heavy equipment will be repaired immediately or removed from the site. One or more spill containment kits will be placed on site,

and personnel trained in proper use and disposal methods. Use of dry cleanup methods whenever possible.

- Protecting all storm drain and catch basin inlets.
- Refueling vehicles and heavy equipment in a designated site located at least 500 feet from creeks and drainage swales.
- Washing concrete trucks, paint, equipment, or similar activities only in areas where polluted water and materials can be contained for subsequent removal from the site. Wash water will not be discharged to the storm drains, street, drainage ditches, or creeks. Areas designated for washing functions will be at least 100 feet from any storm drain, water body, or sensitive biological resources. The location(s) of the washout area(s) will be clearly noted at the construction site with signs; the applicant will designate a washout area, acceptable to the Humboldt County Planning and Building Department staff. The washout areas will be shown on the construction and/or grading and building plans and will be in place and maintained throughout construction.
- Storing construction equipment in a defined area at least 100 feet from any wetlands or water bodies.
- Separating any polluted runoff from clean site runoff through use of berms or ditches to divert surface runoff around the construction site.
- Covering exposed stockpiles of soil or other erosive material during the rainy season.
- Constructing roadwork pavement, concrete, and asphalt and apply seal coat during dry weather only.
- Covering storm drains and manholes in the construction area when paving or applying seal coat, slurry, fog seal, or other coatings.
- Inspecting active construction areas regularly to ensure that BMPs are intact.
- Conducting daily cleaning of active construction areas as needed.
- Educating employees and subcontractors about BMPs through periodic tailgate meetings.
- Regularly maintaining all BMPs at project site.

Implementation of the SWPPP, and its associated BMPs, would begin with the commencement of construction and continue through the completion of construction and would reduce any construction impacts to less than significant.

Operation

Operation and maintenance of the wastewater treatment facility and pump station(s) would not be expected to result in water quality impacts. Stormwater BMPs would be incorporated into project building and grading plans. All of the stormwater runoff within the wastewater treatment facility would be subject to the county's *Grading, Excavation, Erosion, and Sediment Control* ordinance (Title III, Division 3, Section 331-12). The ordinance regulates "...grading and related activities on private and public property, to control and reduce erosion, to reduce sediment delivery to drainages and streams, and to protect fishery habitat and other biological resources by providing best erosion control and sediment management practices. The ordinance outlines permit and fee requirements, as well as setback requirements, drainage requirements, erosion and sediment control requirements, including plan preparation and standard details for BMPs" (Winzler & Kelly, 2008).

Pump stations would be located underground and are not expected to pose a substantial risk of rupture or leakage. The likelihood of an overflow or bypass of untreated or partially treated wastewater at the treatment facility is remote because the leachfield would be located below ground and designed with excess storage capacity to meet minimum influent storage capacity requirements. Risk of leak or rupture would be minimized and reduced to acceptable levels through proper design and construction practices and through normal daily operator surveillance of the facilities. The potential for release of pollutants at the pump stations and wastewater treatment facility and resulting impacts is considered less than significant.

Mitigation: No mitigation is necessary.

Significance: Less than significant.

Impact: **HYD-2: Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).**

The purpose of the Groundwater Antidegradation Analysis (Appendix H) was to determine if that the proposed leachfield disposal at the Mill Site would result in degradation to the beneficial uses of groundwater at the site or the beneficial uses of nearby Trinity River. All of the effluent from the wastewater treatment plant would be disposed of via a subsurface leachfield. Because of this, nitrate is the key constituent of concern, and other constituents (e.g. BOD, TSS, etc.) were not considered. The analysis compared water quality objectives for nitrate with the projected nitrate concentrations in the groundwater upon mixing with infiltrated treated effluent. The degradation determination was made by comparing the projected commingled concentration of the groundwater with the most stringent water quality objectives. The analysis was also used to confirm that substantial groundwater mounding would not occur, and that an acceptable groundwater clearance beneath the system would be maintained.

Nitrate levels are anticipated to be at or below 13 mg/L coming out of the treatment plant. Further nitrate reduction occurs naturally in the soil column. By the time the wastewater percolate reaches groundwater, it can be assumed that 25 percent denitrification would occur, and the nitrate concentration in the percolate at this point would be less than 10.0 mg/L. Considering the expected leachfield loading rate and the natural long-term percolation rate at the site, significant groundwater mounding is not anticipated. The analysis documented that the proposed treatment and disposal system would not impact groundwater or the Trinity River in a manner that would be in violation with the Basin Plan (GHD 2015).

The project would not result in the depletion of groundwater supplies. While construction of the wastewater treatment facility would result in an overall increase in paved areas, the project would not result in a substantial decrease in groundwater recharge. The wastewater treatment facility and pump stations would create a minor amount of new impervious surface area in the project area, but this is not expected to have a substantial effect on groundwater recharge. The risk to groundwater is mitigated by proper design (i.e., separation from groundwater of at least five vertical feet) and operation (i.e., maintain the system so that it continues to provide the necessary level of treatment). The leachfield trench would consist of a gravity flow system with a 3-inch main line and 1.5-inch perforated pipe 1 foot below the ground surface with 5 feet of pea gravel below the perforated pipe for infiltration purposes. There would be both groundwater monitoring wells and leachfield monitoring wells. Therefore, there would be no significant impacts associated with rising groundwater levels resulting from the project, nor any impacts associated with groundwater depletion or recharge.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

Impact: **HYD-3: Would the project substantially alter the existing drainage pattern of the site or area or create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems.**

The project would alter the existing drainage patterns in the project area as a result of construction of a new wastewater treatment facility and pump station(s). New sewer pipelines would be constructed in existing roadways within the collection area and would not alter drainage patterns.

The area of construction associated with the pump station(s) would be very small. Much of these structures would be located below grade, and site grading following construction would be returned to existing conditions as much as possible (e.g., by repaving or landscaping). The additional impermeable surfaces resulting from the construction of these facilities would be just a few square feet and is not expected to significantly increase runoff that could cause flooding.

The wastewater treatment facility construction would require grading in order to prepare the site for construction, but construction activities would not be expected to increase runoff. Once operational, the treatment facility has been designed such that runoff from storm events on paved and concrete areas would be captured and routed to an infiltration basin, which would be consistent with the county's Grading, Excavation, Erosion, and Sediment Control ordinance (Title III, Division 3, Section 331-12). Storm water which lands directly on top of the recirculating gravel beds would be captured into the wastewater treatment system.

As a result of project design, the impacts associated with runoff causing flooding or exceeding the capacity of storm drains would be less than significant.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

Impact: **HYD-4: Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.**

The project does not include any levees or dams nor any structures for human occupancy. As noted previously, the project would not be located in a 100-year flood zone and would not expose people or structures to any other kind of flooding event. The Sewered Area is located within the Trinity Dam dam failure inundation area according to the Humboldt Operational Area Hazard Mitigation Plan Update (Tetra Tech 2014). However, the sewer lines within the collection area, the pump station(s), treatment facility and leachfields would not expose people or structures to a significant risk from dam failure because the probability of dam failure is low and the only project components above ground (after construction) would be the treatment facility. The National Dam Safety Program requires a periodic engineering analysis of every major dam in the country. The goal of this FEMA-monitored effort is to identify and mitigate the risk of dam failure so as to protect the lives and property of the public. No dam failures have been recorded in Humboldt County. The impact is less than significant.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

3.9.6 Cumulative Impacts

Impact: HYD-C-1: Would the project result in a cumulatively considerable contribution to cumulative impacts related to hydrology and water quality.

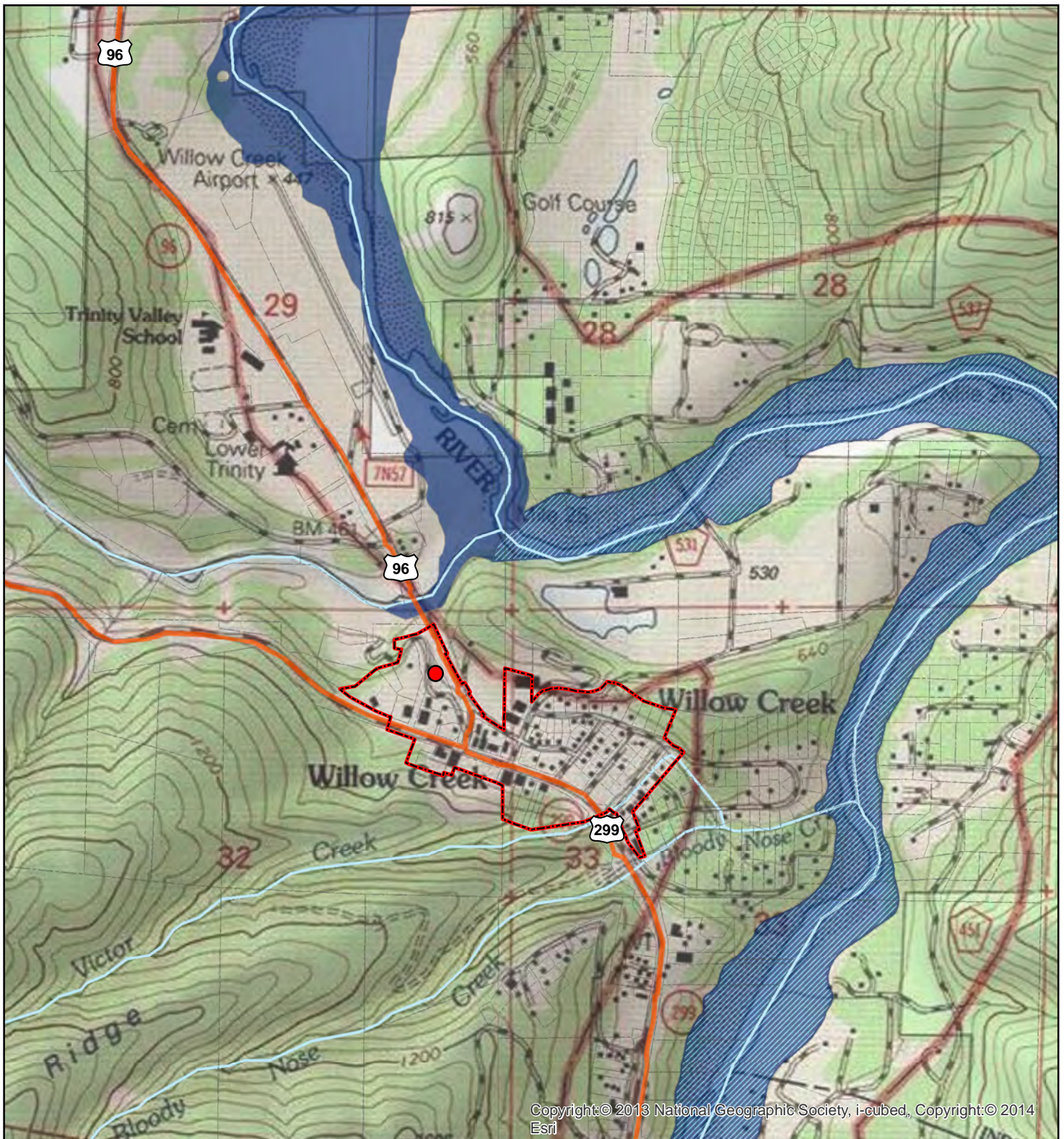
There are no cumulative projects identified in Section 3.0 which would have the potential to affect water quality and increased runoff during construction and long-term operation. Implementation of the proposed project would not result in a significant cumulative impact on hydrology and water quality. Therefore, cumulative impacts would be less than significant.

Mitigation: No mitigation is necessary.

Significance: Less than significant.

3.9.7 References

- GHD, 2015, Willow Creek Community Services District Downtown Wastewater Development Groundwater Antidegradation Analysis, prepared for Willow Creek Community Services District, May.
- Streamline Planning Consultants, 2012, Stormwater Water Quality Sampling Results from Downtown Willow Creek, CA Draft Final Report, prepared for Willow Creek Community Services District, August.
- Tetra Tech, 2014, Humboldt Operational Area Hazard Mitigation Plan Update Volume 1: Planning-Area-Wide Elements, prepared for County of Humboldt, February.
- Trinity Valley Consulting Engineers, Inc. (TVCE), 2014, Willow Creek Community Services District 2014 Updated Watershed Sanitary Survey Willow Creek Watershed, prepared for Willow Creek Community Services District, May.
- Winzler & Kelly, 2008, Community Infrastructure & Services Technical Report, prepared for County of Humboldt Community Development Services Department, July.

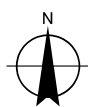


- Sewered Area
- FEMA 100 Year Floodplain
- Approximation of the 520 foot Elevation for Non-FEMA Mapped Portion of the Trinity River

- Willow Creek Community Services District HQ
- Parcel Boundaries

- Highway
- River

Paper Size ANSI A
0 500 1,000 1,500 2,000
Feet
Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



Willow Creek Community Services District
Downtown Wastewater Development Project
Environmental Impact Report

Job Number 8410746.05
Revision A
Date 01 Dec 2014

FEMA 100 Year
Floodplain Boundary

Figure 3.9-1

This page intentionally left blank

3.10 Land Use and Planning

This section contains a discussion of the existing land use and planning setting for the proposed project and surrounding area and evaluates the potential impacts related to land use and planning during construction and operation of the project. To provide the basis for this evaluation, the Setting section describes the existing land use and zoning for the project area and the Regulatory Framework section describes the regulatory background that applies to the project. The impacts and mitigation measures section establishes the thresholds of significance, evaluates potential land use and planning impacts, and identifies the significance of impacts. Where appropriate, mitigation measures are presented to reduce impacts to less-than-significant levels.

3.10.1 Setting

3.10.1.1 Existing Land Use

Existing land uses in the Sewered Area include a mix of predominantly commercial and residential land uses (Figure 2-2). Most of the commercial uses are along Highway 299. Other uses include the post office, museum, gas stations, Chamber of Commerce, and banks.

3.10.1.2 Surrounding Land Use

Land uses in the vicinity of the proposed project consist of:

- North: Undeveloped forested slopes too steep for most development; rural residential homes; the Trinity River; agriculture, and recreational uses.
- East: Single family homes, Highway 299, Bloody Nose Creek, and the Trinity River.
- South: Undeveloped forested slopes too steep for most development (Six Rivers National Forest), Victor Creek, and Bloody Nose Creek.
- West: Highway 299, undeveloped forested slopes too steep for most development (Six Rivers National Forest), Willow Creek.

3.10.1.3 General Plan Land Use and Zoning

A general plan can be described as a city/county's blueprint for future development. It has a long-term outlook, identifying the types of development that will be allowed, the spatial relationships among land uses, and the general pattern of future development and circulation. Humboldt County's General Plan (adopted in 1984) is the guiding plan for the project area and surrounding unincorporated area.

The General Plan land use designations for the Sewered Area include Commercial Services (CS), Agricultural Lands (AL), and Residential – Low Density. Zoning consists of Community Commercial (C-2), Unclassified (U), Agriculture Exclusive (AE), and Residential Suburban (allow manufactured homes) (RS-T). Public and Quasi-Public uses such as the proposed project, as defined in Sections 314-58-1 and 314-85.1, respectively, are permitted in any zone without the necessity of first obtaining a Use Permit. Reference Figure 3.10-1 for General Plan Land Use designations within the Sewered Area and parcels in the project vicinity. Reference Figure 3.10-2 for Zoning within the Sewered Area and parcels in the project vicinity.

3.10.2 Regulatory Framework

3.10.2.1 Federal

There are no federal land use plans, policies or regulations regulating local land use.

3.10.2.2 State

There are no state land use plans, policies or regulations regulating local land use.

3.10.2.3 Regional and Local

Humboldt County General Plan

The following Humboldt County General Plan policies are applicable to the proposed project.

2633 Policy

Urban Development

3. *The utilization of on-site sewage disposal systems shall not be acceptable in the urban development area, unless it can be determined that:*
 - A. *Public sewer services are not available to serve the proposed development; and*
 - B. *Mitigation measures will assure that the proposed development density will not cause adverse cumulative health or environmental impacts.*

4236 Transmission and Pipelines

2. *Extension of services, such as sewer, water, and roads should avoid traversing agricultural lands. Where such infrastructure must cross agricultural lands, they should be located in public right-of-way and provide a level of service consistent with the development density reflected in the Land Use Plan.*

Willow Creek Community Action Plan

The Willow Creek CAP is a strategic planning document and implementation guide that sets community improvement goals and identifies the necessary steps for achieving those goals. The 2003 CAP reviewed the goals and accomplishments of the 1997 CAP, identified next steps, and was used as a springboard for community improvement projects and future community planning processes. A modernized wastewater system was identified within the Willow Creek CAP as a community improvement project.

3.10.3 Evaluation Criteria and Significance Thresholds

The project would cause a significant impact related to land use and planning, as defined by the CEQA Guidelines (Appendix G), if it would:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

3.10.3.1 **Areas of No Project Impact**

Construction and operation of the project would not result in impacts related to some of the significance criterion identified in Appendix G of the current CEQA Guidelines. The following significance criteria are not discussed further in the impact analysis, for the following reason:

- **Physically divide an established community.** The project includes a gravity wastewater collection system for the proposed Sewered Area with one pump station (potentially two pump stations, based on final design). All of these project components would be below-ground. No aspect of the project would physically divide the community of Willow Creek. Therefore, this significance criterion is not applicable to the project and is not discussed further.
- **Conflict with any applicable habitat conservation plan or natural community conservation plan.** There are no habitat conservation plans or natural community conservation plans applicable to the project. Therefore, this significance criterion is not applicable to the project and is not discussed further.

3.10.4 Methodology

For the purposes of this impact analysis, a significant impact would occur if implementation of the proposed project would result in inconsistencies or conflicts with the adopted goals and policies of the Humboldt County General Plan and/or applicable rules and regulations of the Humboldt County Zoning Code.

3.10.5 Impacts and Mitigation Measures

Impact: **LU-1: Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.**

The proposed project would be consistent with the General Plan Land Use and Zoning designations for the Sewered Area and would not require a Use Permit. The Willow Creek CAP acknowledges the importance of reliable public infrastructure, “essential to the prosperity of any community are reliable roads, bridges, water, and sewer systems, and other public facilities. These are the community’s lifelines. A healthy economy depends on adequate community facilities.” Construction and operation of the downtown wastewater system development project would not conflict with applicable land use plans, policies, or regulations.

Mitigation: No mitigation is necessary.

Significance: **No impact.**

3.10.6 Cumulative Impacts

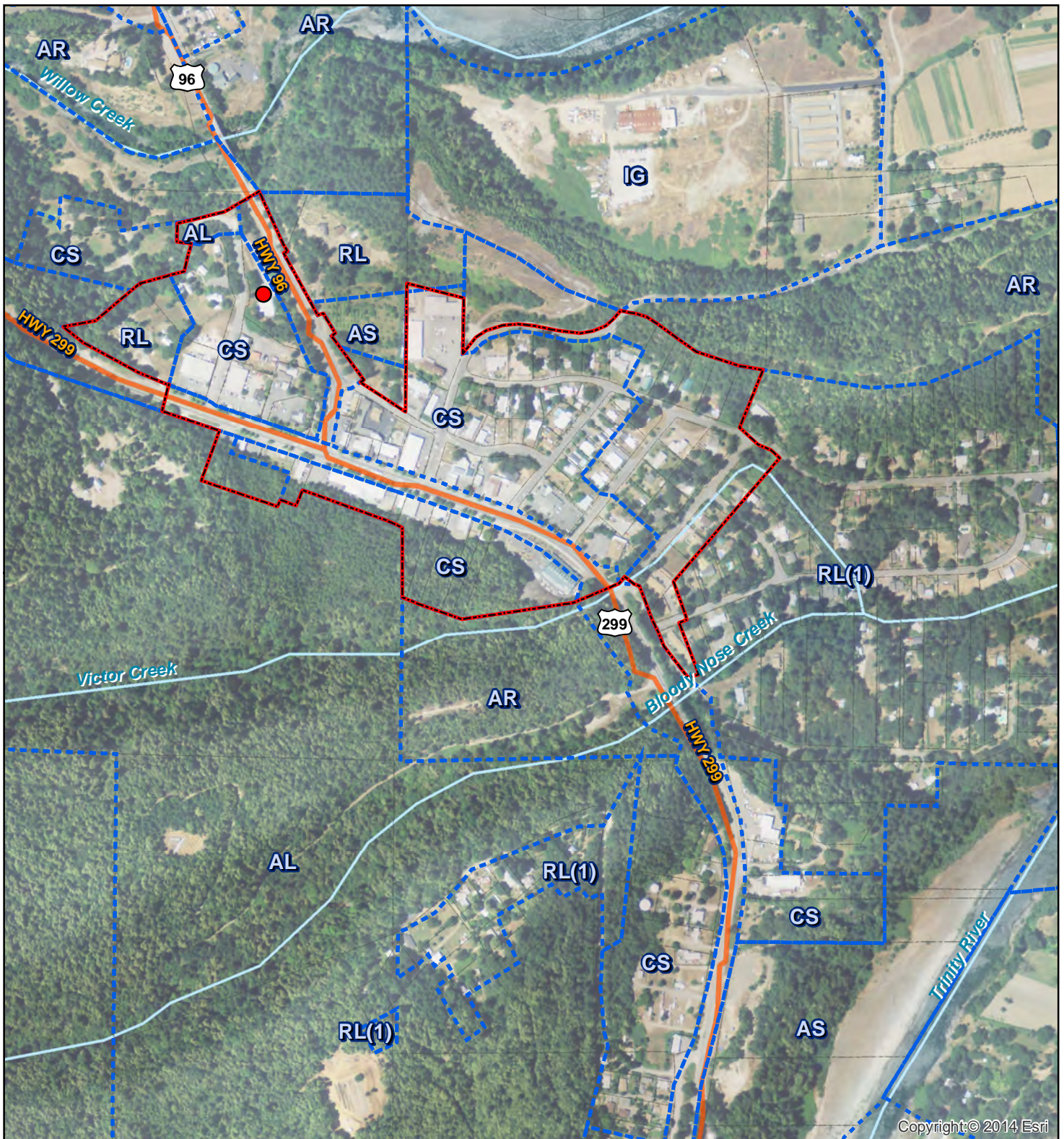
Impact: **LU-C-1: Would the project result in cumulatively considerable contribution to a significant cumulative impact related to land use and planning.**

There are no cumulative projects identified within the project area except for small scale uses and land use entitlements with negligible cumulative effects such as a minor subdivision to divide two parcels, a Special Permit for a second dwelling unit, a lot line adjustment, a Conditional Use Permit for the construction of four individual motel units, a General Plan Amendment and Zone Reclassification, etc..

Any new future projects would be evaluated on a project-by-project basis and would undergo a similar plan review process as the proposed project, in order to determine potential land use planning policy and regulation conflicts. The project was determined to have no impact with regard to conflicting with any applicable land use plans, policies, and regulations; therefore it cannot contribute to a cumulative impact.

Mitigation: No mitigation necessary.

Significance: Less than significant.



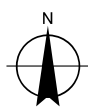
Copyright © 2014 Esri

- | | | |
|---|-------------------|---------------|
| Sewered Area | Parcel Boundaries | Highway |
| Willow Creek Community Services District HQ | Existing Land Use | River / Creek |

Land Use:

- CS: Commercial Services
 RL: Residential - Low Density
 RL(1): Residential - Low Density (1 acre minimum parcel)
 IG: Industrial General
 AR: Agricultural Rural
 AL: Agricultural Lands
 AS: Agricultural Suburban

Paper Size ANSI A
 0 200 400 600 800
 Feet
 Map Projection: Lambert Conformal Conic
 Horizontal Datum: North American 1983
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



Willow Creek Community Services District
 Downtown Wastewater Development Project
 Environmental Impact Report

Job Number 8410746.05
 Revision A
 Date 01 Dec 2014

Existing Land Use Map

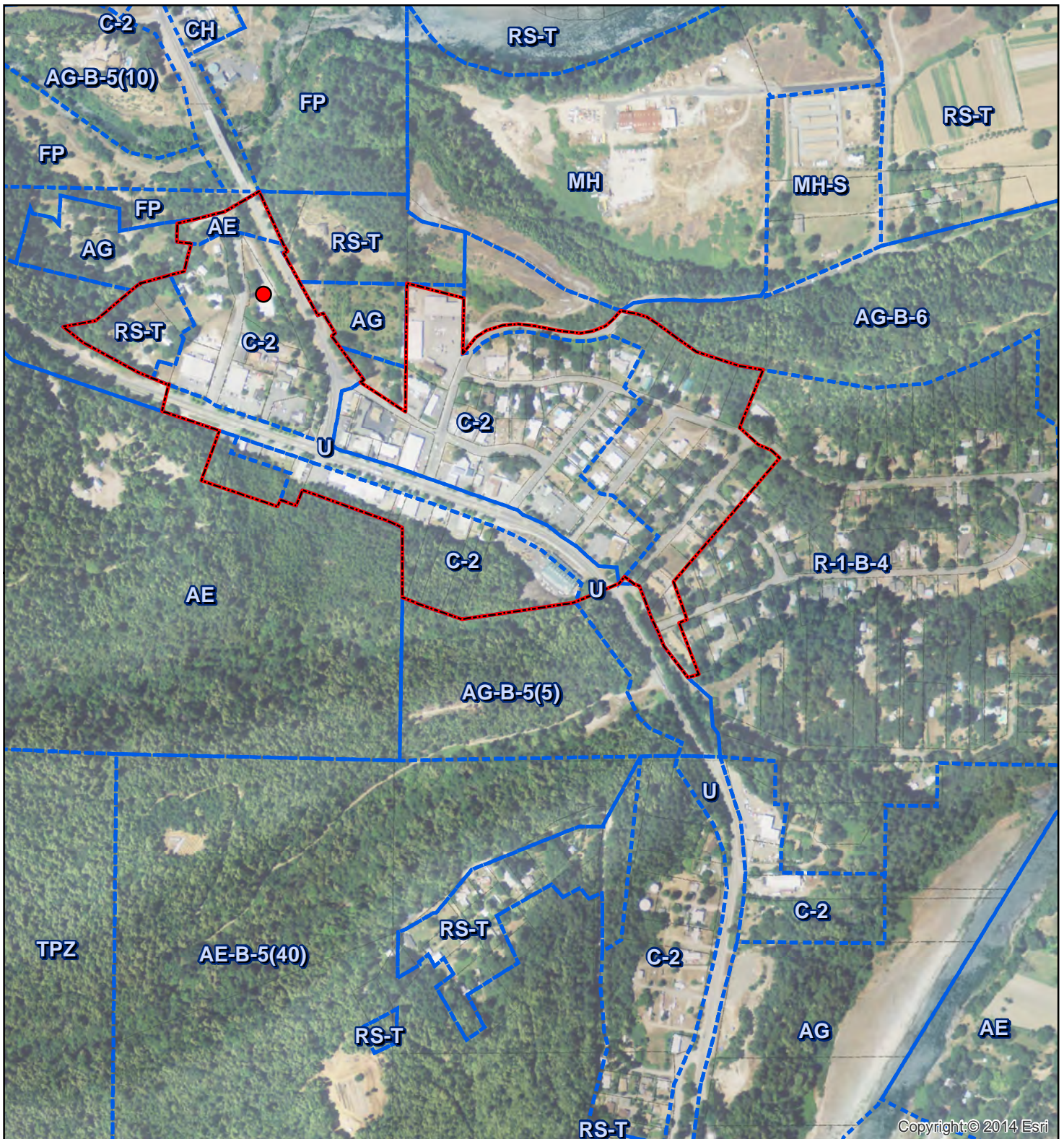
Figure 3.10-1

G:\12057 WillowCreekCSD\8410746 WCCSD-WWTP Planning\08-GIS\Maps\Figures\EIR\F3.10-1_Land Use.mxd

718 Third Street Eureka CA 95501 USA T 707 443 8326 F 707 444 8330 E eureka@ghd.com W www.ghd.com

© 2013. While every care has been taken to prepare this map, GHD and Willow Creek Community Services District make no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and cannot accept liability and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred by any party as a result of the map being inaccurate, incomplete or unsuitable in any way and for any reason.
 Data source: County of Humboldt: Parcels; Aerial NAIP 2012, 1 m resolution. Created by:jrousseau

This page intentionally left blank

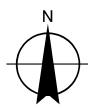
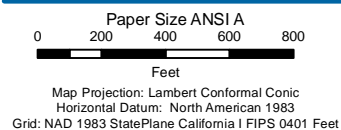


Copyright © 2014 Esri

- Sewered Area
- Parcel Boundaries
- Zoning Boundary
- Highway
- River/Creek
- Willow Creek Community Services District HQ

Existing Zoning:

- AE: Agriculture Exclusive
- AG-B-5(5): Agriculture General (5 acre min.)
- RS-T: Residential Suburban - allow manufactured homes
- R-1-B-4: Residential Single Family (1 acre min.)
- MH-S: Heavy Industrial - Development Standard
- MH: Heavy Industrial
- C-2: Community Commercial



Willow Creek Community Services District
Downtown Wastewater Development Project
Environmental Impact Report

Job Number 8410746.05
Revision A
Date 01 Dec 2014

Existing Zoning Map

Figure 3.10-2

G:\12057 WillowCreekCSD\8410746 WCCSD-WWTP Planning\08-GIS\Maps\Figures\EIR\F3.10-2_Zoning.mxd

718 Third Street Eureka CA 95501 USA T 707 443 8326 F 707 444 8330 E eureka@ghd.com W www.ghd.com

© 2013. While every care has been taken to prepare this map, GHD and Willow Creek Community Services District make no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and cannot accept liability and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred by any party as a result of the map being inaccurate, incomplete or unsuitable in any way and for any reason.

Data source: County of Humboldt: Parcels; Aerial NAIP 2012, 1 m resolution. Created by:jrousseau

This page intentionally left blank

3.11 Mineral and Energy Resources

This section evaluates the potential impacts related to mineral and energy resources during construction and operation of the project. To provide the basis for this evaluation, the Setting section describes the existing mineral and energy resources for the project area and the Regulatory Framework section describes the regulatory background that applies to the project. The impacts and mitigation measures section establishes the thresholds of significance, evaluates potential impacts to mineral and energy resources, and identifies the significance of impacts. Where appropriate, mitigation measures are presented to reduce impacts to less than significant.

3.11.1 Setting

3.11.1.1 Mineral Extraction

Humboldt County has a wealth of mineral resources. There are 93 extraction sites around the county producing sand and gravel, metals, and stone and clay. Mining provides an input of vital importance to a number of key activities in the construction industry, primarily the raw materials for concrete used in foundations. Mining materials are also used for road construction, maintenance and repair and other important uses (Humboldt County 2012). Willow Creek was originally a mining town.

Sand and gravel extraction constitute the major portion of the county's mining activity, both in terms of quantity of material produced and value of extracted resource. Extraction sites, mines, pits, and quarries, for mineral extraction are located throughout the county. Mines and quarries in Humboldt County primarily produce shale, stone (base and subbase), and clay. Almost all of these, except the clay quarries, are hard rock quarries. Actual extraction amounts vary depending on local demand. Rock quarries are a significant augmentation of the in-stream sand and gravel mining operations in the county. These quarries provide rock products of various sizes that may not be obtainable from in-stream operations or may be able to provide sand and gravel at more competitive rates due to location or reduced permitting expenses. Most recent surface mining applications in the county have been for upland rock quarry operations due to these factors. Figure 7-1 of the Humboldt County General Plan Update identifies four extraction sites in the in the project area. (Humboldt County 2012)

3.11.1.2 Energy Resources

Energy resources in Humboldt County are primarily natural gas deposits. Active gas wells in Humboldt County are concentrated in the Tompkin Hills Gas Field off the coast in Humboldt County. There is no record of geothermal production in Humboldt County. The Sewered Area is not located on or near any substantial known energy source or energy system infrastructure.

3.11.2 Regulatory Framework

3.11.2.1 Federal

There are no federal regulations that apply to the proposed project related to mineral and energy resources.

3.11.2.2 State

Mineral Extraction

Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act (SMARA) regulates surface mining operations within California. SMARA is administered by the California Department of Conservation through the California Department of Conservation State Mining and Geology Board (SMGB) and the Office of Mine Reclamation (OMR). SMARA states that “the extraction of minerals is essential to the continued economic well-being of the state and to the needs of the society, and that the reclamation of mined lands is necessary to prevent or minimize adverse effects on the environment and to protect the public health and safety (California Department of Conservation 2011).” SMARA encourages the production and conservation of minerals, while also considering “values relating to recreation, watershed, wildlife, range and forage, and aesthetic enjoyment.”

Energy Conservation

Warren-Alquist Act State Energy Resources Conservation and Development Act

The Warren-Alquist Act was enacted, and the California Energy Commission was created, to encourage the conservation of non-renewable energy resources. This legislation, among other things, codifies California’s policy to use a range of measures to reduce wasteful, uneconomical, and unnecessary uses of energy, thereby reducing the rate of growth of energy consumption, prudently conserving energy resources, and assuring statewide environmental, public safety, and land use goals.

3.11.2.3 Regional and Local

Humboldt County has adopted regulations to implement the provisions of the Surface Mining and Reclamation Act of 1975 (Public Resources Code Sections 2710 et seq.). These regulations are intended to protect the quality of the county’s environment, to restrict land uses that would be incompatible with preservation and use of natural resources and to assure an adequate supply of these resources for present and future generations. A conditional use permit and reclamation plan is required, and development standards are set for surface mining operations (Humboldt County 2012). Humboldt County has adopted Ordinance #1373 to fulfill this State requirement. Standards prevent new mining operations from becoming nuisances to nearby communities and prevent problems of traffic, noise, water quality or visual degradation.

3.11.3 Evaluation Criteria and Significance Thresholds

The project would cause a significant impact related to mineral and energy resources, as defined by the CEQA Guidelines (Appendix G), if it would:

- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state;
- Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan; or
- Result in inefficient, wasteful, or unnecessary consumption of fuels or other energy resources, especially fossil fuels such as coal, natural gas, and oil.

3.11.4 Methodology

Existing information sources were reviewed to determine whether any portions of the project area contain significant mineral and energy resources and to evaluate how these resources, if any, would be affected by the proposed project.

3.11.5 Impacts and Mitigation Measures

Impact: **ME-1: Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.**

The collection area is primarily within road ROWs serving existing commercial and residential uses. The sewage treatment facility and infiltration disposal areas consist of previously graded and disturbed land not suitable for mining. Aside from the sewage treatment facility and infiltration disposal areas the project would not alter the existing uses of the collection area. Humboldt County has not yet been included in the California Mineral Land Classification System by the SMGB to designate lands containing mineral deposits of regional or statewide significance. There are rock extraction sites north and south of Willow Creek along the Trinity River. However, the project would not result in a loss of mineral resources and would have less-than-significant impacts to mineral resources.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

Impact: **ME-2: Would the project result in inefficient, wasteful, or unnecessary consumption of fuels or other energy resources, especially fossil fuels such as coal, natural gas, and oil.**

Construction

Construction of the project, including the collection system, sewage treatment facility and infiltration disposal areas, would require the use of fuels (primarily gas, diesel, and motor oil) for a variety of construction activities, including excavation, grading, and vehicle travel. During these activities, fuel for construction worker commute trips would be minor in comparison to the fuel used by construction equipment. Use of these fuels would not be wasteful or unnecessary because their use is necessary to comply with water quality regulations and a reliable wastewater system for users in the Sewered Area.

Excessive idling and other inefficient site operations are not anticipated. Because of the small scale of the project and relatively short construction timeframe, impacts related to the inefficient use of construction-related fuels would be less than significant.

Operation

Operation of the sewage treatment facility would require approximately 4,500 kilowatt-hours (kWh) of energy annually. The average annual electricity consumption for a U.S. residential utility customer was 10,908 kWh in 2013 (EIA 2013). The sewage treatment facility would be operated by WCCSD and would use electricity provided by PG&E. The sewage treatment facility would not use any coal, natural gas, or oil. The sewage treatment facility would be designed to current California Building Code standards and would not use energy in an inefficient or wasteful manner. The impact is less than significant.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

3.11.6 Cumulative Impacts

Impact: **ME-C-1: Would the project result in cumulatively considerable contribution to mineral or energy resources impacts.**

The geographic scope of potential cumulative impacts related to mineral resources consists of any mining related operations in Humboldt County along the Trinity River. The geographic scope of potential cumulative impacts related to energy resources consists of the PG&E service area in Northern California (e.g., Humboldt and Trinity counties).

The proposed project would not contribute to a cumulatively considerable loss of availability of a known mineral resource(s). The proposed project, in combination with other regional projects would not contribute to inefficient, wasteful, or unnecessary consumption of fuels or other energy resources. The project's contribution would not be cumulatively considerable because the project would not use energy in a wasteful or unnecessary manner and the project would incorporate energy efficiency measures during construction and operation in accordance with the mitigation measures in Section 3.3 (Air Quality).

Mitigation: No mitigation necessary.

Significance: **Less than significant.**

3.11.7 References

EIA (U.S. Energy Information Administration), 2013, *Frequently Asked Questions*, accessed at: <http://www.eia.gov/tools/faqs/faq.cfm?id=97&t=3>.

Humboldt County, 2012, *Humboldt County General Plan Update Draft Environmental Impact Report SCH# 2007012089*, April.

3.12 Noise

This section evaluates the potential impacts related to noise and vibration during construction and operation of the project. To provide the basis for this evaluation, the Setting section describes the fundamentals of acoustics and groundborne vibration and the existing noise environment for the project area and the Regulatory Framework section describes the regulatory background that applies to the project with regard to noise and vibration. The impacts and mitigation measures section establishes the thresholds of significance, evaluates potential noise and vibration impacts, and identifies the significance of impacts. Where appropriate, mitigation is presented to reduce impacts to less than significant levels.

3.12.1 Setting

3.12.1.1 *Fundamentals of Acoustics*

Noise may be defined as unwanted sound. Noise is often objectionable when it is disturbing or annoying. The objectionable nature of sound could be caused by its pitch or its loudness. Pitch is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. Loudness is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table 3.12-1.

There are several methods of characterizing sound. The most common method in California is the A-weighted sound level or (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called Leq. The most common averaging period is hourly, but Leq can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus one dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus one to two dBA.

Since the sensitivity to noise increases during the evening and at night, because excessive noise interferes with the ability to sleep, 24-hour descriptors have been developed that incorporate artificial

noise penalties added to quiet-time noise events. The Day/Night Average Sound Level (Ldn) is average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 PM and 7:00 AM. The Community Noise Equivalent Level, (CNEL), is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 PM - 10:00 PM) and a 10 dB addition to nocturnal (10:00 PM - 7:00 AM) noise levels.

Table 3.12-1 Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this section are A-weighted, unless indicated otherwise.
L01, L10, L50, L90	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Equivalent Noise Level, Leq	The average A-weighted noise level during the measurement period.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 PM to 10:00 PM and after addition of 10 decibels to sound levels in the night between 10:00 PM and 7:00 AM.
Day/Night Noise Level, Ldn or DNL	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 PM and 7:00 AM.
Lmax, Lmin	The maximum and minimum A-weighted noise level during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).

Source: Illingworth & Rodkin

3.12.1.2 *Fundamentals of Groundborne Vibration*

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several methods are typically used to quantify the amplitude of vibration including Peak Particle Velocity (PPV) and Root Mean Square (RMS) velocity. PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. RMS velocity is defined as the average of the squared amplitude of the signal, usually measured in decibels referenced to 1 micro- inches per second (in/sec) and reported in VdB. PPV and VdB vibration velocity amplitudes are used in this analysis to evaluate the effect on buildings and human response to vibration.

Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. This rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows. In urban environments sources of groundborne vibration include construction activities, light and heavy rail transit, and heavy trucks and buses.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generates the highest construction related groundborne vibration levels. Because of the impulsive nature of such activities, the use of the PPV descriptor has been routinely used to measure and assess groundborne vibration and almost exclusively to assess the potential of vibration to induce structural damage and the degree of annoyance for humans.

The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life are evaluated against different vibration limits. Studies have shown that the threshold of perception for average persons is in the range of 0.008 to 0.012 in/sec PPV. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level.

Structural damage can be classified as cosmetic only, such as minor cracking of building elements, or may threaten the integrity of the building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher and there is no general consensus as to what amount of vibration may pose a threat for structural damage to the building. Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is at a high state of disrepair and the construction activity occurs immediately adjacent to the structure.

3.12.1.3 *Existing Noise Environment*

The project is located in the downtown core area of Willow Creek (Figures 2-2 and 2-3). The primary noise source is traffic on Highway 299 and to a lesser extent traffic on Highway 96. There are no other major noise sources in the Sewered Area. The ambient noise levels in the Sewered Area are relatively low. Figure 3-3 (Inventory of Prominent Sources of Noise within Communities of Humboldt County) of the Humboldt County General Plan does not identify any railroad or stationary sources as being prominent noise sources in the community (Humboldt County 1984). The Draft Humboldt County General Plan Noise Element identified gravel operations as also being a prominent noise source in the Willow Creek vicinity (Humboldt County 2012).

3.12.1.4 Noise-Sensitive Land Uses

Certain land uses, such as residences, schools, childcare centers, churches, hospitals, and nursing homes, etc. are generally more sensitive to noise impacts. The only sensitive noise receptors in the Sewered Area are residential uses and a church. Residential uses are located throughout the collection area and in close proximity to the proposed sewer lines planned for the road ROW. There are approximately four residences in relatively close proximity to the proposed sewage treatment facility and infiltration disposal sites.

3.12.2 Regulatory Framework

3.12.2.1 Federal

No federal standards related to noise and vibration would be applicable to the project.

3.12.2.2 State

No State regulations related to noise and vibration would be applicable to the project. However, Caltrans has published guidelines for evaluating potential vibration impacts from construction projects. Caltrans' Transportation and Construction Vibration Guidance Manual indicates that vibration in excess of 0.3 in/sec PPV could cause cosmetic damage to structures, and 0.1 in/sec PPV could cause residential annoyance during sleep periods.

3.12.2.3 Regional and Local

At the local level, noise is addressed through the implementation of General Plan policies, including noise and land use compatibility guidelines, and through enforcement of the noise ordinance. General Plan policies provide guidelines for determining whether a noise environment is appropriate for a proposed or planned land use. Noise ordinances regulate sources (such as mechanical equipment and amplified sounds), as well as prescribe hours of heavy equipment operation (such as for construction). CEQA requires that environmental analyses consider local noise ordinances and standards in determining the significance of noise impacts.

Humboldt County General Plan

The Humboldt County General Plan includes a number of policies with regard to noise. The following policy is applicable to the proposed project.

5. Noise

C. The land use noise compatibility matrix (Figure 3-2) shall be utilized as the standard for General Planning and zoning purposes.

3.12.3 Evaluation Criteria and Significance Thresholds

The project would cause a significant impact related to noise and vibration, as defined by the CEQA Guidelines (Appendix G), if it would:

- Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;

- Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and expose people residing or working in the project area to excessive noise levels; or
- Be located within the vicinity of a private airstrip, and expose people residing or working in the project area to excessive noise levels.

3.12.3.1 Areas of No Project Impact

As explained below, the project would not result in impacts related to two of the significance criteria identified in Appendix G of the current CEQA Guidelines. The following significance criteria are not discussed further in the impact analysis, for the following reasons:

- Located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and expose people residing or working in the project area to excessive noise levels. The proposed project is not located within an airport land use plan or within two miles of a public airport. Therefore, this significance criterion is not applicable to the proposed project and is not discussed further.
- Located within the vicinity of a private airstrip, and expose people residing or working in the project area to excessive noise levels. The proposed project is located approximately 0.6 mile from a private airstrip; however, the proposed project would not expose people to excessive noise from the private airstrip. Therefore, this significance criterion is not applicable to the proposed project and is not discussed further.

3.12.4 Methodology

The noise and vibration impact assessment evaluates noise and vibration impacts associated with construction and operation of the project. The assessment of potential noise impacts was conducted using the anticipated noise that would be produced during construction and operation of the project as compared to noise level thresholds established by the regulatory criteria. The assessment of vibration impacts was conducted using information on anticipated vibration levels generated during the construction of the project.

For construction noise, the potential for impacts was assessed by considering several factors, including the proximity of project-related noise sources to noise-sensitive land uses (i.e., sensitive receptors), typical noise levels associated with construction equipment, the potential for construction noise levels to interfere with daytime activities, and the duration that sensitive receptors would be affected. For operational noise, the potential for impacts was assessed by evaluating the noise generation potential of noise sources, proximity of sensitive receptors, and the potential for operational noise to remain within the established local limits at the nearest receptors.

The Caltrans guidelines for vibration are the basis for the significance criteria for annoyance and potential building damage. Caltrans recommends a vibration limit of 0.5 in/sec PPV for buildings structurally sound and designed to modern engineering standards, 0.3 in/sec PPV for buildings that are found to be

structurally sound but where structural damage is a major concern, and a conservative limit of 0.08 in/sec PPV for ancient buildings or buildings that are documented to be structurally weakened. This analysis assumes that proposed construction areas would not be in the vicinity of fragile structures, but that older structures exist within the vicinity of the project site. Based on Caltrans guidance, this analysis establishes 0.3 in/sec PPV as the significance threshold for construction vibration to avoid damage to buildings from vibration sources.

3.12.5 Impacts and Mitigation Measures

Impact: NOI-1: Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

The Humboldt County General Plan identifies 45 dB Ldn¹ indoors and 55 dB Ldn outdoors as the maximum level below which no effects on public health and welfare occur. Ldn is the average sound level in decibels, excluding frequencies beyond the range of the human ear, during a 24-hour period with a 10 dB weighting applied to nighttime sound levels (Humboldt County 1984).

Construction

The construction phase of the project (approximately seven months total) would require the use of heavy equipment for excavation, grading, etc., and would temporarily increase ambient noise levels for the duration of project construction. Construction activities would also involve the use of smaller power tools, generators, and other sources of noise. During construction, noise levels would vary based on the amount of equipment in operation and the location of the activity in proximity to adjacent uses. Site work at the sewage treatment facility, construction of the sewer lines within the collection area, and directional drilling would take approximately four months to complete. Site work associated with the treatment facility and leach fields would take approximately three months to complete. Each work component (e.g., trenching, laterals connections, paving, etc.) would take anywhere from four days (paving) to five weeks (trenching) to complete. Noise levels would be consistent with the reference noise levels in Table 3.12-2: Construction Equipment Reference Noise Levels Measured at 50', below.

Sound from a point source is known to attenuate, or reduce, at a rate of 6 dB for each doubling of distance. For example, a noise level of 84 dB Leq² as measured at 50 feet from the noise source would attenuate to 78 dB Leq at 100 feet from the source and to 72 dB Leq at 200 feet from the source to the receptor. Based on the reference noise levels, above, the noise levels generated by construction equipment in the collection area, sewage treatment facility, and infiltration disposal areas, may reach a maximum of approximately 85 dB Leq at 50 feet during site excavation, and construction.

¹ Ldn is the Day-Night Noise Level. Ldn is the average sound level in decibels, excluding frequencies beyond the range of the human ear, during a 24-hour period with a 10dB weighting applied to nighttime sound levels.

² Equivalent sound level (Leq) is a steady-state sound that has the same energy and A-weighted level as the community noise over a given time interval.

Table 3.12-2 Construction Equipment Reference Noise Levels Measured at 50'

Equipment	Noise Level (dB)	Equipment	Noise Level (dB)
Drill Rig Truck	84	Jackhammer	85
Horizontal Boring	80	Large Generator	82
Hydraulic Jack			
Front end Loader or Backhoe	80	Paver or Roller	85
Excavator	85	Dump Truck	84

Source: Federal Highway Administration, 2006.

The closest noise sensitive receptors are neighboring homes within the collection area. The proposed sewer lines are planned for the road ROW either on the road centerline or to one side or another of the road centerline. Therefore, assuming a minimum front yard setback of 25 feet and an additional 10 feet within the road ROW, the closest homes in the collection area are approximately 35 feet from the proposed sewer lines. At this distance, exterior noise levels near the full reference level (up to 85 dB Leq) would be above the county's normally unacceptable exterior noise level of 70 dB Ldn. However, a typical building can reduce noise levels by 15 to 25 dB with the windows closed (Humboldt County 1984, U.S. EPA 1974), thereby reducing interior noise levels to within 5 dB of the maximum exterior noise level or below the maximum exterior noise level. Noise levels above the maximum exterior noise level would be a significant impact, therefore, the following mitigation is proposed.

Mitigation: Mitigation Measure NOI-1: Reduce Construction-Related Noise

The WCCSD shall ensure that the contractor(s) implement construction noise control measures during daytime construction activities. Noise control measures shall include, but would not be limited to the following:

- All equipment driven by internal combustion engines shall be equipped with mufflers which are in good condition and appropriate for the equipment.
- The construction contractor shall utilize "quiet" models of air compressors and other stationary noise sources where technology exists.
- Unnecessary idling of internal combustion engines shall be prohibited.
- At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practicable from sensitive receptors.
- The construction staging area shall be located the greatest distance away as feasible between construction-related noise sources and noise-sensitive receptors during project construction.
- The construction contractor shall designate a "noise disturbance coordinator" who will be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and institute reasonable measures as warranted to correct the problem (e.g., to ensure that the measures above are implemented). A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.

Significance: Less than significant with mitigation.

Implementation of Mitigation Measure NOI-1 would reduce construction noise impacts at nearby residential land uses from temporary construction noise to a less-than-significant level by requiring mufflers, quiet equipment, and proper location of equipment to reduce construction noise levels.

Impact: NOI-2: Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

Construction of the proposed project would include the following construction phases; site preparation, excavation/grading, trenching, exterior building construction, interior building construction, and paving. Major sources of groundborne vibration such as impact or vibratory pile drivers are not proposed as part of the project.

Table 3.12-3 presents typical vibration levels that could be expected from construction equipment at a distance of 25 feet. As indicated in Table 3.12-3, vibration levels produced by a vibratory roller can reach 0.210 in/sec, PPV at a distance of 25 feet. Jackhammers typically generate vibration levels of 0.035 in/sec PPV and drilling typically generates vibration levels of 0.09 in/sec PPV at a distance of 25 feet. Vibration levels would vary depending on soil conditions, construction methods, and equipment used.

Table 3.12-3 Vibration Source Levels for Project Construction Equipment

Equipment	PPV at 25' (in/sec)	Approximate Lv At 25' (VdB)
Vibratory Roller	0.201	94
Hoe Ram	0.089	87
Large Bulldozer	0.089	87
Loaded Trucks	0.076	86
Jackhammer	0.035	79
Small Bulldozer	0.003	58

Source: Transit Noise and Vibration Impact Assessment, United States Department of Transportation, Office of Planning and Environment, Federal Transit Administration, May 2006.

A review of the construction equipment list for the project was made to identify the specific pieces of construction equipment that would result in the highest vibration levels at nearby receptors. A vibratory roller would be used during the excavation/grading and paving phases of the project, and the nearest receptor would be located approximately 35 feet from portions of the collection area that would undergo grading and paving. At a distance of 35 feet, vibration levels produced by a vibratory roller would be below the 0.3 in/sec PPV threshold used to avoid cosmetic damage to buildings that are found to be structurally sound but where structural damage is a major concern. Vibration levels produced by other equipment proposed as part of the project and at locations further from receptors would also be less than the 0.3 in/sec PPV threshold. This would be a less than significant impact.

Mitigation: No mitigation is necessary.

Significance: Less than significant.

Impact: NOI-3: Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

The sewer lines and pump station(s) would be located underground and would not produce any noticeable noise. The sewage treatment facility is the only project facility capable of producing operational

noise. Project components capable of producing noise from the sewage treatment facility include pumps and blowers. Noise from pumps and blowers would be well below the threshold of 45 dBA indoors and 55 dBA outdoors as measured at the nearest residential receptor, and would not result in a substantial permanent increase in ambient noise levels in the project vicinity. These project components would be located within the enclosed sewage treatment facility building, which is more than 100 feet from the closest residential receptor, and would therefore not be noticeable to nearby sensitive receptors. The impact is less than significant.

Mitigation: No mitigation is necessary.

Significance: Less than significant.

Impact: **NOI-4: Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.**

Project-related construction activities would result in temporary noise increases at sensitive receptors located throughout the collection area. Construction noise levels would vary at any given receptor depending on the type of construction activity, construction phase, equipment type and duration of use, distance between the noise source and receptor, and the presence or absence of barriers between the noise source and receptor. Typical construction equipment generates noise levels ranging from about 76 to 88 dBA at a distance of 50 feet from the source, with higher levels of about 86 to 98 dBA for certain types of earthmoving and impact equipment (e.g., jack hammers, pavement breakers, rock drills). The rate of attenuation or reduction is about 6 dBA for every doubling of distance from a point source. Table 3.12-2 lists noise levels for typical construction equipment at 50 feet from the noise source.

Calculations made based on a review of the proposed construction equipment list indicates that hourly average noise levels would range from approximately 80 to 85 dBA Leq at a distance of 50 feet from the center of any particular active construction location during busy construction periods. The daytime exterior noise level threshold is 80 dBA Leq for more than one month.

Daytime construction noise levels (there is no construction planned during evening hours) are calculated to exceed the 80 dBA Leq threshold at receptors within 63 feet of the center of any particular active construction location having direct line of sight (first-row receptors) to project construction activities. Based on the estimated daytime construction noise levels, sensitive land uses within the vicinity of construction activities within the collection area would be exposed to substantial daytime construction noise levels over an approximately two-week period at any one location. Based on the estimated daytime construction noise levels, sensitive land uses within the vicinity of construction activities within the sewage treatment facility and infiltration disposal areas would be exposed to substantial daytime construction noise levels over an approximately two-month construction period. The temporary impact of construction-related noise is significant, therefore, Mitigation Measure NOI-1 is proposed

Mitigation: **Mitigation Measure NOI-1: Reduce Construction-Related Noise.**

Refer to the text above.

Significance: Less than significant with mitigation.

The implementation of Mitigation Measure NOI-1 would reduce construction noise impacts at nearby residential land uses from temporary construction noise to a less-than-significant level by requiring mufflers, quiet equipment, and proper location and orientation of equipment to reduce construction noise levels.

3.12.6 Cumulative Impacts

Impact: NOI-C-1: Would the project contribute to cumulatively considerable noise impacts.

For noise and vibration, the geographic scope of potential cumulative impacts is limited to the immediate project vicinity as well as areas adjacent to any routes designated for access and hauling (e.g., Highway 299).

Regarding noise from construction, the cumulative analysis of impacts is limited to the time when the construction activities occur and the proximity of other projects that are under construction or other sources of noise in the immediate vicinity of proposed project construction activities. Construction impacts do not occur once construction has ceased. There are no known reasonably foreseeable future projects at this time which could contribute to a cumulatively significant impact, and the proposed project's individual impacts would be less than significant with implementation of Mitigation Measure NOI-1: Reduce Construction-Related Noise.

Regarding noise from operations, the proposed project's individual impact would be less than significant, and there are no known past, present, or reasonably foreseeable future projects in the immediate vicinity of the treatment facility which would contribute to a cumulatively considerable noise impact.

Vibration impacts are often associated with construction activities. Reasonably foreseeable future projects could contribute to a cumulatively significant impact but only if located in proximity to the project site. As with construction noise, there are no known reasonably foreseeable future projects located within the project area which would be close enough to result in a cumulatively considerable effect associated with vibration. Therefore, vibration impacts would not be considered cumulatively considerable.

Mitigation: No mitigation necessary.

Significance: Less than significant.

3.12.7 References

Humboldt County, 1984, as amended 1988, 1989, 1994, 1998, Humboldt County General Plan Volume I Framework Plan.

Humboldt County, 2012, Humboldt County General Plan Update Planning Commission Approved Draft, March 19.

United States Environmental Protection Agency (USEPA), 1974, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, accessed online at: <http://www.nonoise.org/library/levels74/levels74.htm>.

3.13 Population and Housing

This section evaluates the potential impacts related to population and housing with implementation of the project. The Setting section describes the existing environmental setting as it relates to population and housing. The Regulatory Framework section describes the applicable regulations at the federal, State and local level. The Impacts and Mitigation Measures section establishes the thresholds of significance, evaluates potential impacts to population and housing, and identifies the significance of impacts. Where appropriate, mitigation is presented to reduce impacts to less-than-significant levels.

3.13.1 Setting

3.13.1.1 Population and Housing

Willow Creek is the largest of the small communities scattered along the Trinity River. As of the year 2010 census (U.S. Census Bureau, 2010), there were 1,710 people residing in Willow Creek (in 812 households), down from 1,743 from the 2000 census. The population density was 55.9 people per square mile. The population decreases in the winter by approximately one third to one half due to its high proportion of seasonal residents. The year-round residents are primarily composed of business people, government employees and retirees. A small percentage of residents work in the Eureka/Arcata area and therefore commute for work. The seasonal residents are often largely involved in the outdoor recreation opportunities available during the summer. These include camping, fishing and rafting. In recent years there has been an increase in migrant workers during the late summer months that are understood to be used by the marijuana farmers. At the time of the 2010 census, the median annual household income was \$27,276 and the median income for a family was \$35,720.

The Sewered Area consists of 103 total connections to the wastewater system (some parcels would have more than one service connection), 57 of which are commercial and 46 are residential.

3.13.2 Regulatory Framework

3.13.2.1 Federal

There are no federal policies, plans or regulations applicable to the proposed project with regard to population and housing.

3.13.2.2 State

There are no state policies, plans or regulations applicable to the proposed project with regard to population and housing.

3.13.2.3 Regional and Local

Humboldt County General Plan

The Humboldt County General Plan (including the Housing Element) includes goals and policies addressing population and housing within the county; however, none of them are directly applicable to the proposed project.

3.13.3 Evaluation Criteria and Significance Thresholds

The project would cause a significant impact related to population and housing, as defined by the CEQA Guidelines (Appendix G), if it would:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

3.13.3.1 *Areas of No Project Impact*

Construction and operation of the project would not result in impacts related to two of the significance criterion identified in Appendix G of the current CEQA Guidelines. The following significance criteria are not discussed further in the impact analysis, for the following reason:

- **Displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere.** The project includes a gravity wastewater collection system for the proposed Sewered Area with one pump station (potentially two pump stations, based on final design). The project would not include the removal of any housing. No aspect of the project would displace housing or people in the community of Willow Creek. Therefore, this significance criterion is not applicable to the project and is not discussed further.

3.13.4 Methodology

Population and housing impacts are assessed based upon the level of physical impact anticipated in the various environmental resource categories that can affect compatibility (e.g., air quality, noise, aesthetics). The analysis includes an evaluation of the project's consistency with local and regional plans and policies in the Willow Creek Community Planning Area.

3.13.5 Impacts and Mitigation Measures

Impact: PH-1: Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

The community of Willow Creek does not currently have a community-wide wastewater collection system, and all of the residences and businesses rely solely on individual septic systems to provide for their wastewater treatment needs. Many of these septic systems are decades old, and some are beginning to fail, impacting ground and surface water in the area and negatively affecting public health and the environment. This is of particular concern in the downtown Willow Creek area, as there is insufficient room to construct new or reserve leach fields to replace existing failing leach fields.

Numerous permits for repair of failed septic systems have been issued by the Humboldt County Division of Public Health (Oscar Larson & Associates 2008). In 2005 and again in 2010, the county passed a resolution naming Willow Creek a blighted community; the lack of wastewater infrastructure was identified as a contributing factor to this blight determination.

The Humboldt County Community Development and Environmental Health departments are concerned that repairs in the area will not suitably meet state and local government requirements for onsite sewage treatment and disposal. A 2008 letter from the Humboldt County Division of Environmental Health (DEH) states the DEH's support of a community sewer system in Willow Creek as a long-term measure to protect public health. The letter states that the majority of lots in town have near total lot coverage and will not have undisturbed soils or adequate areas for future repairs.

A letter of support for a community-wide wastewater system in Willow Creek was also written by the Humboldt County Community Development Department (CDD). The CDD noted that there have been several instances of raw sewage overflowing into the downtown storm drains, and that the current conditions in Willow Creek with respect to wastewater can put the public at risk. Advanced onsite systems have been required for commercial users, and to be sustainable, the downtown area will require a less piecemeal approach to wastewater treatment.

The project would not directly, or indirectly, induce growth in the area because the project would not facilitate the construction of new housing or create new employment opportunities other than temporary construction jobs. The Preliminary Engineering Report (GHD 2014) prepared for the project anticipated that approximately seven more residential units and five more commercial businesses would be developed in the Sewered Area within the next 10 years. Therefore, the project would not induce substantial population growth in the area. The Regional Housing Needs Plan for Humboldt County allocated 859 housing units for the unincorporated area of the county for the period of January 1, 2014 to June 30, 2019 (HCAG 2013). The impact is less than significant.

Mitigation: No mitigation necessary.

Significance: **Less than significant.**

3.13.6 Cumulative Impacts

Impact: **PH-C-1: Would the project result in a cumulatively considerable contribution to cumulative impacts related to population and housing.**

Implementation of the project would not induce substantial population growth, displace substantial numbers of people, displace existing housing, or necessitate the construction of replacement housing as a result of the additional employees during the construction period of the project. As such, no significant incremental project impacts to population or housing are anticipated. Implementation of the project, when viewed in connection with other projects in the cumulative scenario, makes no cumulatively considerable contribution to impacts related to population and housing.

Mitigation: No mitigation necessary.

Significance: **No impact.**

3.13.7 References

Humboldt County Association of Governments (HCAG), 2013, *Humboldt County Regional Housing Needs Allocation Plan Covering the period of January 1, 2014 – June 30, 2019*, December.

Oscar Larson & Associates, 2008, *Wastewater Feasibility Analysis*, prepared for Willow Creek Community Services District.

This page intentionally left blank

3.14 Public Services

This section evaluates the potential impacts related to public services with construction and operation of the project. The Setting section describes the existing environmental setting as it relates to public services. The Regulatory Framework section describes the applicable regulations at the federal, State and local level. The Impacts and Mitigation Measures section establishes the thresholds of significance, evaluates potential impacts to public services, and identifies the significance of impacts.

3.14.1 Setting

The study area for the analysis of public services is the Willow Creek CAP Area, which is provided law enforcement services by the county and fire protection services by the Willow Creek Fire Protection District. The following sections describe the environmental setting for public services within the Willow Creek CAP Area.

3.14.1.1 Law Enforcement

The Humboldt County Sheriff's Office provides a variety of public safety services countywide (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, and substations in Garberville and McKinleyville. The McKinleyville substation patrols the Willow Creek area.

The Sheriff's Office has mutual aid agreements with cities and the California 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.

According to the Humboldt County General Plan Update Draft EIR, in the more rural areas of the county, like the project area, 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. (Humboldt County 2012)

3.14.1.2 Fire Protection

The Willow Creek Fire Protection District (FPD) was formed in 1959 and provides fire protection services to the unincorporated community of Willow Creek, through the Willow Creek Volunteer Fire Department (VFD). The jurisdictional boundary of the Willow Creek FPD is approximately 6.6 square miles in area with an estimated population of 1,737 residents and 1,111 total housing units. The non-district response area is more than 57 square miles with an estimated population of 447 residents and 292 total housing units. (Humboldt LAFCo 2013)

The Willow Creek FPD is an independent, single-purpose special district authorized to provide fire protection, rescue, and emergency medical services and any other services relating to the protection of

lives and property pursuant to the Fire Protection District Law of 1987 (Division 12, Part 2.7 of the Health and Safety Code, Section 13800 et seq.), which supersedes prior fire protection district laws. The Willow Creek VFD is a separate non-profit corporation that delivers fire protection services on behalf of the Willow Creek FPD. (Humboldt LAFCo 2013)

The Willow Creek FPD has one fire station located at 51 Willow Road in Willow Creek, which once housed the original fire house built in 1957. The District's apparatus includes: two type-2 engines, a type-6 wildland truck, one rescue truck, and one water tender. The District has direct access to an appropriate fire hydrant system that is maintained by the WCCSD. The District maintains an ISO Public Protection Classification rating of 5/9 for residences within five miles of the fire station and within 1,000 feet of a fire hydrant or water source. (Humboldt LAFCo 2013)

The Willow Creek VFD currently has 22 volunteers, which consists of a chief, an assistant chief, two captains, and 18 firefighters. Providing emergency response to calls during business hours can be a challenge for the Willow Creek VFD, as volunteers often have jobs or children to attend to during the day. However, the Department continually recruits and maintains high volunteer numbers to account for other obligations their members may have. (Humboldt LAFCo 2013)

The Willow Creek FPD averages between 150 and 200 calls for service per year. The Department responds to both structural and wildland fires, as well as medical emergencies in and outside of the District. The call volume increases in the summertime months, with an influx of tourism and recreation activities. Typically, 50 percent of total calls are medical in nature. Other calls such as vehicle accidents, which comprise up to 30 percent of total calls, may also involve the delivery of emergency medical services. Fires of all types can comprise up to approximately 20 percent of Willow Creek FPD calls for service. (Humboldt LAFCo 2013)

3.14.1.3 *Public Schools*

There are no public schools within the Sewered Area; however, the Trinity Valley Elementary School is located on the west side of Highway 96 just north of Willow Creek. Trinity Valley Elementary School is in the Klamath-Trinity Joint Unified School District and serves grades K-8.

3.14.1.4 *Parks*

The WCCSD maintains approximately 38 acres of park area consisting of Veteran's Park, Creekside Park, downtown Community Commons, and the Willow Creek Highway 299 corridor. In addition, Camp Kimtu and Kimtu Beach are also maintained by the WCCSD staff. Community Commons, at the junction of Highway 299 and Highway 96, is a 1.5 acre park within the Sewered Area. A 6-inch gravity pipe is proposed through the northern portion of Community Commons park as shown in Figure 2-3.

3.14.2 Regulatory Framework

3.14.2.1 *Federal*

There are no federal regulations governing public services that apply to the project.

3.14.2.2 *State*

There are no state regulations governing public services that apply to the project.

3.14.2.3 **Regional and Local**

Humboldt County General Plan Goals and Policies

The following policy from the Humboldt County General Plan is applicable to the project.

4720 Policies

1. Proposed development shall be adequately serviced by water supplies for fire protection or shall have a letter from an appropriate fire protection agency indicating that adequate fire protection can be provided.

3.14.3 Evaluation Criteria and Significance Thresholds

Under criteria based on Appendix G of the CEQA Guidelines, the project would be considered to have a significant impact on public services if it would result in any of the following:

- Substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection, police protection, schools, parks, and/or other public facilities.

3.14.4 Methodology

Potential impacts to public services are evaluated for construction and operation of the project. The evaluation considers whether the project would affect the community's existing public services, including fire protection and law enforcement, by affecting the current service ratios/response times.

3.14.5 Impacts and Mitigation Measures

Impact: **PS-1: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection and police protection.**

Law Enforcement Services

The project is not intended to increase population, therefore, it is not anticipated that the project would increase the need for additional law enforcement personnel or services. The project would not include new or physically altered government facilities. The project would not affect service ratios or response times for the Humboldt County Sheriff's Office or California Highway Patrol. No impact has been identified.

Fire Protection and Emergency Medical Services

The project would not increase population, therefore, it is not anticipated that the project would increase the need for fire protection or emergency medical services, or affect service ratios or response times of these public services. The project area is located in a very high and high fire hazard severity zone within

the SRA (CalFire 2007); however, the project would not increase the fire hazard and would not negatively affect the ability of fire or medical personnel from attending to an emergency in the project area. No roads would be blocked during project construction. The impact would be less than significant.

Schools, Parks, and/or Other Public Facilities

The project would not result in an increase in population and therefore would not create a need for new schools or increase any school population. The project would not affect school funding. A 6-inch sewer line would be constructed through a portion of Community Commons Park in downtown Willow Creek (Figure 2-3); however, after construction the area would be re-landscaped to look like pre-project conditions. Therefore, the proposed project would have a less than significant impact to schools, parks and other public facilities.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

3.14.6 Cumulative Impacts

Impact: **PS-C-1: Would the project result in a cumulatively considerable contribution to cumulative impacts related to public services.**

Implementation of the project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, or negatively affect service ratios or response times. They would neither contribute to nor cause a significant cumulative impact since the project's impacts are less than significant; the only other known cumulative projects are small scale uses and land use entitlements with negligible cumulative effects; and it is unlikely that other projects would impact the same public services at the same time during the construction period. Implementation of the project, when viewed in connection with other projects in the cumulative scenario, makes no cumulatively considerable contribution to impacts related to public services.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

3.14.7 References

California Department of Forestry and Fire Protection (CalFire), 2007, Fire Hazard Severity Zones in SRA, November 7.

Humboldt County, 2012, Humboldt County General Plan Update Draft Environmental Impact Report, April 2.

Humboldt LAFCo, 2013, Blue Lake, Kneeland & Willow Creek Fire Protection Districts Municipal Service Review, adopted July 17, 2013.

3.15 Recreation

This section evaluates the potential impacts related to recreation with implementation of the project. The Setting section describes the existing environmental setting as it relates to recreational resources. The Regulatory Framework section describes applicable regulations at the federal, state and local level. The Impacts and Mitigation Measures section establishes the thresholds of significance, evaluates potential impacts to recreational resources, and identifies the significance of impacts. Where appropriate, mitigation is presented to reduce impacts to less-than-significant levels.

3.15.1 Setting

3.15.1.1 Parks and Recreation

The WCCSD maintains more than 38 acres of park area consisting of Veteran's Park, Creekside Park, downtown Community Commons, and the Willow Creek Hwy 299 corridor. In addition, Camp Kimtu and Kimtu Beach are also maintained by WCCSD staff.

Veteran's Park is the oldest park in WCCSD's system. It is a 17-acre complex that consists of one softball field, one soccer/utility field, picnic area, playground, volleyball area, tennis court, and two horseshoe pits. Reservations may be obtained through the WCCSD office for picnics, softball tournaments, soccer games, and special events such as weddings, reunions, and birthday parties. Veteran's Park is located at 100 Kimtu Road en-route to Kimtu Beach.

The Community Commons area is a 1.5 acre site at the junction of Highway 299 and Highway 96 and includes a visitor's center kiosk, bigfoot statue and Willow Creek China Flat Museum. Creekside Park, located at the end of Willow Road, consists of a toddler playground, a small picnic and barbecue area, and the 18 hole Steelhead Disc Golf Course. The Creekside Loop Trail was created in 2008 as a moderate walking path circling Creekside Park. The WCCSD maintains and operates Camp Kimtu and Kimtu Beach along the bank of the Trinity River. The campground has nine tent camping sites along the river bank of Kimtu Beach.

3.15.2 Regulatory Framework

3.15.2.1 Federal

There are no federal policies or programs regulating local recreation.

3.15.2.2 State

There are no state policies or programs regulating local recreation.

3.15.2.3 Regional and Local

The Humboldt County General Plan does not include any applicable policies or programs regulating recreational resources relevant to the proposed project.

3.15.3 Evaluation Criteria and Significance Thresholds

The project would cause a significant impact related to recreational resources, as defined by the CEQA Guidelines (Appendix G), if it would:

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

3.15.3.1 *Areas of No Project Impact*

Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated, or include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. Construction and operation of the project is not intended to increase population and would not increase the use of existing parks and recreational facilities, nor require the construction or expansion of recreational facilities. The project would not include construction of housing or other structures that would increase population and associated recreational demands in the project area. Therefore, no impact has been identified and these significance criteria are not discussed further.

3.15.4 Cumulative Impacts

Impact: **REC-C-1: Would the project result in a cumulatively considerable impact to recreational resources.**

As noted above the proposed project would have no impact to recreational resources. At a regional scale, the proposed project would not impede future development of recreational resources, therefore, the project's contribution to this potential cumulative impact would not be cumulatively considerable.

Mitigation: No mitigation is necessary.

Significance: **No impact.**

3.16 Transportation/Traffic

This section evaluates the potential impacts to transportation during construction and operation of the proposed project. To provide the basis for this evaluation, the Setting section describes the existing conditions related to transportation for the project area, and the Regulatory Framework section describes the regulatory background that applies to the project. The evaluation section establishes thresholds of significance, evaluates potential transportation impacts, and identifies the significance of impacts.

3.16.1 Setting

The following information discusses the transportation-related context in which the proposed project would be constructed and operated, including a description of the roadway network, pedestrian and bicycle facilities, and public transit in the project area.

3.16.1.1 Roadways

State Highways 96 and 299 pass through the Willow Creek area, both of which fall under the jurisdiction of the California Department of Transportation (Caltrans). Highway 96 extends north and adjoins Highway 299 as it enters the Willow Creek community. Highway 299 runs northwest to southeast through Willow Creek, adjacent to Mayfair Street. Both highways provide the main rural arterial routes for entering and exiting Willow Creek, with Highway 299 providing access from the west, south, and east, and Highway 96 providing access from the north.

The 2013 annual average daily traffic¹ reported for Highway 96 and Highway 299 at their Willow Creek junction was 2,750 and 7,700, respectively (Caltrans 2013). According to the 2014 Humboldt County Association of Governments (HCAOG) Regional Transportation Plan, highways in Mendocino County currently provide adequate facilities and level of service (HCAOG 2014).

County roadways within Willow Creek that would be encroached upon during construction include Willow Glen Drive, Mayfair Street, Country Club Drive, The Terrace Lane, Walnut Way, Willow Way, Roth Road, Delaney Drive, and Trinity Acres Road. Each of these county roads are two-way roads within one travel lane in each direction.

3.16.1.2 Pedestrian and Bicycle Facilities

As specified in the Humboldt County Regional Transportation Plan, all streets, roadways, and highways in Humboldt County are open to bicycle use (HCAOG 2014). Humboldt County's bikeways are generally classified according to Caltrans' definitions for Class I, II, and III bikeways, as defined below.

Class I "Bike Path": A separated, surfaced right-of-way designated exclusively for non-motorized use (can be solely for bicyclists, or can be shared with pedestrians and/or equestrians). The minimum width for each direction is 8 feet (1.5 meters), with a 5 feet (2.4 meter) minimum width for a bi-directional path.

Class II "Bike Lane": Within the roadway, a lane for preferential bicycle use, at least 4 feet wide or 5 feet when next to a gutter or parking. Established by a white stripe (on roadway) and "Bike Lane" signs. Adjacent vehicle parking and motorist crossflow is allowed. On a two-way road, a bike lane is required on both sides.

¹ Annual average daily traffic is the total volume for the year divided by 365 days.

Class III “Bike Route”: A roadway that does not have a Class I or II bikeway, where bicyclists share a travel lane with motorists. Sometimes created to connect other bikeways. Can be established by a “Bike Route” sign, but not required.

Unclassified bikeway: Streets, roadways, and highways without features to qualify as Class I, II, or III.

Currently, Willow Creek possess one classified bikeway. The bikeway is a Class II bike lane located on Highway 299 extending approximately 0.3 miles from Willow Road to Willow Way.

The Humboldt County Regional Bicycle Plan identifies a proposed future Class I bike path along Highway 96 in Willow Creek. The proposed Class I bike path would be approximately 0.9 miles in length from Highway 299 to Trinity Valley Elementary School (HCAOG 2012). Additionally, both the Humboldt County Regional Transportation Plan and Regional Bicycle Plan identify future Class III bicycle routes along Highways 96 and 299 in the project area (HCAOG 2012; 2014).

Sidewalks and on-street parking is located along Highway 299 in the project area. Intermittent sidewalks and on-street parking are located along other roadways in the project area.

3.16.1.3 *Public Transit*

The Willow Creek Transit System is the main transit system available to the Willow Creek community. This transit system provides trips between areas of the Hoopa Reservation, Arcata, and Orleans, as well as Weaverville located in Trinity County and Redding in Shasta County. The Humboldt Transit Authority controls the fixed-route Willow Creek Transit System as it transports passengers between Willow Creek and the Arcata Transit system along Highway 299.

In January 2003 Klamath Trinity Non-Emergency Transportation (K-T NeT) was introduced as a non-profit, community-based organization in rural northeastern Humboldt County. This transit system offers two fixed-route services that expand from Willow Creek to areas located northward along Highways 96 and 169. K-T NeT actively schedules the Hoopa-Willow Creek service to link with the Willow Creek Transit System.

3.16.1.4 *Airports*

Of the nine public use airports in Humboldt County, the nearest to the project site is the Hoopa Airport, which is owned and managed by the Hoopa Valley Tribal Council, located approximately 7 miles north of the project site. The Project site is not located within land use compatibility zones established for any public use airports, or in the vicinity of a private airport.

3.16.2 Regulatory Framework

3.16.2.1 *Federal*

There are no federal regulations that apply to the proposed project related to transportation.

3.16.2.2 *State*

Caltrans issues encroachment permits and permits to operate the movement of oversized or excessive load vehicles on State roadways, such as Highways 96 and 299. Caltrans also requires a Transportation Management Plan for any traffic restrictions and detours that could affect the highway system, which must be prepared in accordance with the California Manual on Uniform Traffic Control Devices.

3.16.2.3 *Regional and Local*

County of Humboldt General Plan Policies

The following goal from the Humboldt County General Plan is applicable to the project with regard to transportation.

4220 Goal: To develop, operate and maintain a well-coordinated, balanced, circulation system that is safe, efficient and provides good access to all cities, communities, neighborhoods, recreational facilities and adjoining regions.

The General Plan does not currently establish vehicular level of service criteria for County roadways in the project area.

Humboldt County Association of Governments Regional Transportation Plan

The HCAOG is a joint powers authority comprising the County of Humboldt and the seven incorporated cities, each with a seat on the Board of Directors. Under its authority as the Regional Transportation Planning Agency (RTPA) for Humboldt County, HCAOG adopts and submits an updated Regional Transportation Plan to the California Transportation Commission and Caltrans every five years. The Regional Transportation Plan is a long-range (20-year) transportation planning document for Humboldt County. The most recent five-year update of the RTP was adopted in 2014. The Regional Transportation Plan does not currently establish vehicular level of service criteria for County roadways in the project area.

Humboldt County Regional Bicycle Plan

The Humboldt Regional Bicycle Plan is a 20-year planning document that is updated every five years. The primary goal stated in the 2012 Update of the Regional Bicycle Plan is to create the safest conditions for bicyclists by providing bikeways and improving roadways to eliminate barriers to bicycle travel (HCAOG 2012). Projects identified as priorities in the current Regional Bicycle Plan are anticipated to be implemented over a five-year period.

3.16.3 Evaluation Criteria and Significance Thresholds

The project would cause a significant impact related to transportation, as defined by the CEQA Guidelines (Appendix G), if it would:

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

- Result in inadequate emergency access; or
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

3.16.3.1 ***Areas of No Project Impact***

As explained below, construction and operation of the proposed project would not result in impacts related to two of the significance criteria identified in Appendix G of the current CEQA Guidelines. The following significance criteria are not discussed further in the impact analysis, for the following reasons:

- **Would the project 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?** Humboldt County is considered rural and does not have a Congestion Management Agency or an adopted Congestion Management Program. Therefore, no conflict with an applicable congestion management program would occur. This significance criterion is not applicable to the proposed project and is not discussed further.
- **Would the project 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?** The proposed project is not located within an airport land use plan or within two miles of a public or private airport. Project construction and operation would include only ground-based travel. Therefore, this significance criterion is not applicable to the proposed project and is not discussed further.

3.16.4 Methodology

The impact analysis below evaluates the potential for the project to conflict with the County's adopted plans and policies related to circulation, including the General Plan, Regional Transportation Plan, and Regional Bicycle Plan. The analysis also evaluates the potential for the project to have short-term or long-term impacts on roadways, emergency access, or on the safety or performance of vehicular traffic, bicyclists, pedestrians, or public transit.

3.16.5 Impacts and Mitigation Measures

Impact: **TRA-1: Would the project 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.**

Construction

Construction traffic for the project would result in a short-term increase in construction-related vehicle trips on Highway 96 and Highway 299, as well as local roadways in Willow Creek. Construction would result in vehicle trips by construction workers and haul-truck trips for delivery and disposal of construction materials and spoils to and from construction areas. Construction of the proposed collection system would also require temporary encroachments for trenching, laying pipe, backfilling, compacting, and repaving within the Caltrans right-of-way on Highways 96 and 299, and within the County right-of-way in

Willow Glen Drive, Mayfair Street, Country Club Drive, The Terrace Lane, Walnut Way, Willow Way, Roth Road, Delaney Drive, and Trinity Acres Road.

Encroachments within the Caltrans right-of-way would be required over an approximately 1,500-foot segment of Highway 299, and an approximately 300-foot segment of Highway 96. Because construction activities would temporarily alter the normal functionality of several roadways, including the need for temporary partial lane closures along the roadways, the potential exists for a short term decrease in the performance and safety of local roads and State highways during construction.

Work that requires the movement of oversized or excessive load vehicles on State highways would require a transportation permit from Caltrans. Additionally, a Transportation Management Plan would be required for any traffic restrictions and detours that could affect the highway system, which would be required to be prepared in accordance with the California Manual on Uniform Traffic Control Devices. The construction contractor would also be required to obtain an encroachment permit from Caltrans District 1 for any portion of work completed within State right-of-way.

An encroachment permit would also be required for work completed within the County road right-of-way. The encroachment permit applications for both Caltrans and Humboldt County require preparation of traffic control plans for work that would block the public right-of-way, and plans for re-routing of vehicles, bicycles and pedestrians, as needed. Implementation of traffic controls would be required in accordance with Caltrans and County standards, and contractors would be required comply with the general conditions of the encroachment permits, including restoration of any damage to right-of-way improvements. Through compliance with Caltrans and County requirements, construction activities would not result in substantial adverse effects or conflicts with the local roadway system. The impact would be less than significant.

Please refer to Impact TRA-4 below for an evaluation of potential construction related impacts to pedestrian, bicycle, and transit facilities.

Operation

The Humboldt County General Plan seeks to develop, operate and maintain a well-coordinated, balanced, circulation system that is safe, efficient and provides good access to all cities, communities, neighborhoods, recreational facilities and adjoining regions. The Humboldt County General Plan and Regional Transportation Plan do not currently establish level of service criteria for County roadways.

Caltrans seeks to provide a safe and efficient State transportation system pursuant to various sections of the California Streets and Highway Code. Caltrans endeavors to maintain a target level of service at the transition between LOS "C" and LOS "D" on State highway facilities.

Operation and maintenance of the project would result in less than one maintenance visit per day. The timing of maintenance visits would vary, and may or may not occur during a peak hour. Operation and maintenance of the project would, therefore, result in less than one peak hour trip to State highways and local roadways. This minimal increase in project trips would not substantially affect the roadway capacity or degrade the flow of traffic or level of service along local highways and roadways. Therefore, operation of the project would not conflict with the goals outlined in the Humboldt County General Plan, Regional Transportation Plan, or Caltrans level of service standards.

Please refer to Impact TRA-4 below for an evaluation of potential operational related impacts to pedestrian, bicycle, and transit facilities.

Mitigation: No mitigation is necessary.

Significance: Less than significant.

Impact: TRA-2: Would the project substantially increase hazards due to a design feature or incompatible use.

Construction

As summarized in Impact TRA-1, construction of the proposed collection system would require temporary encroachments within two State highways and several county maintained roads. Through compliance with Caltrans and County requirements, contractors would be required to obtain encroachment permits, which would require the development and implementation of traffic control plans for work that would block the public right-of-way, including plans for re-routing of vehicles, bicycles, and pedestrians, as needed. Traffic controls would be required in accordance with the Caltrans and County standards, and contractors would be required comply with the general conditions of the encroachment permits. Through compliance with Caltrans and County requirements, the potential for project construction activities to increase hazards due to a design feature or incompatible use is considered less than significant.

Operation

The portion of Flower McNeil Road between the site and Country Club Road would be improved with new asphalt and striping. A road from Flower McNeil Road to the site would also be constructed to provide site access. The proposed improvements to Flower McNeil Road and to the new access road would be designed to adequately serve any equipment or vehicles that may need to access the site following construction. The roadway improvements would not create sharp curves, change speed limits, or create other dangerous features that would prevent safe access through the area. Therefore, the potential for operational activities to increase hazards due to a design feature or incompatible use is considered less than significant.

Mitigation: No mitigation is necessary.

Significance: Less than significant.

Impact: TRA-3: Would the project result in inadequate emergency access.

Construction

Construction of pipelines for the proposed collection system would require partial lane closures along Highways 96 and 299, as well as several local roadways within Willow Creek, including Willow Glen Drive, Mayfair Street, Country Club Drive, The Terrace Lane, Walnut Way, Willow Way, Roth Road, Delaney Drive, and Trinity Acres Road. Installation of collection system pipelines within Highway 299 would require approximately two weeks of construction, during which portions of the center lane of the highway would be closed for construction. Partial lane closures would also be required for less than one week at the intersection of Highway 299 and Country Club Drive for pipeline installation. A partial lane closure along Highway 96 between Mayfair Street and State Route 299 would also be needed for up to two weeks for installation of pipelines.

Contractors would be required to adhere to approved traffic control plans, which would require that access be maintained to all properties adjacent to roads at all times. Implementation of traffic control plans would also minimize conflict and confusion related to emergency access and circulation. Contractors would be required to have ready at all times the means necessary to accommodate access by emergency vehicles, such as plating over excavations, and travel lane closures would be managed such that one travel lane would be kept open at all times to allow alternating traffic flow in both directions along affected roadways. Through compliance with Caltrans and County requirements, the potential for

project construction activities to result in inadequate emergency access is considered less than significant.

Operation

Operation and maintenance of the project would result in less than one additional vehicle per day. Such a minimal increase in traffic along local roadways would not affect emergency services or response times to the area. Additionally, no roadway closures would occur during normal operation of the project. The new access road to the Mill/Stockel site would be designed and constructed in accordance with local roadway standards and would accommodate emergency service vehicles. The operational impact on emergency access would be less than significant.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

Impact: **TRA-4: Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.**

Construction

Public Transit Facilities

A multi-line bus stop for the Redwood Transit System, Klamath Trinity-NET, and Trinity Transit is located at the junction of Highways 96 and 299. The multi-line bus stop is located on the southbound lane of Highway 96, adjacent to an area where a new collection system pipeline may be installed. The installation of pipeline facilities may temporarily impact the performance and safety of public transit at this location. The impact is considered significant.

Implementation of Mitigation Measure TR-1, Avoid or Temporarily Relocate Affected Bus Stop, requires that the District and its contractor coordinate with local public transit providers to reduce the temporary impact of construction on the performance and safety of the multi-line bus stop, as necessary. Implementation of the mitigation measure would reduce impacts to less than significant.

Pedestrian and Bicycle Facilities

A Class II bike lane exists on both sides of Highway 299 between Willow Road and Walnut Way. Construction of the proposed collection system within Highway 299 is anticipated to occur within the center turning lane. Therefore, construction is not anticipated to require the closure of this Class II bike lane or adjacent sidewalks. No direct impact from construction activities on existing bicycle or pedestrian facilities is expected to occur during construction. The impact would be less than significant.

Operation

The Humboldt County Regional Bicycle Plan identifies a proposed future Class I bike path along Highway 96 in Willow Creek (HCAOG 2012). The proposed Class I bike path would be approximately 0.9 miles in length and would extend from Highway 299 to Trinity Valley Elementary School. In addition, both the Humboldt County Regional Transportation Plan and Regional Bicycle Plan identify future Class III bicycle routes along Highways 96 and 299 in the Willow Creek area (HCAOG 2012; 2014).

Because the project would not alter the configuration of Highways 96 and 299, it would not preclude the future establishment of Class I and III bicycle routes. Additionally, because operation and maintenance of the project would result in less than one additional vehicle per day, and would not result in increases to motor vehicle speeds or queuing of traffic, it would not substantially increase exposure of bicyclists and pedestrians to vehicle conflict areas. Because the project would not result in an increase in population, it

would not create a demand for public transit service. Therefore, the potential conflict of the project with adopted plans for pedestrian, bicycle and public transit facilities, or the performance of such facilities, would be less than significant.

Mitigation Mitigation Measure TR-1: Avoid or Temporarily Relocate Affected Bus Stop

The District shall coordinate with the Humboldt Transit Authority Redwood Transit System prior to construction of project components that may affect the multi-line bus stop near the junction of Highways 96 and 299. The District shall notify the Humboldt Transit Authority as to the timing, location, and duration of construction activities near the multi-line bus stop. Work shall be completed at a time that would avoid direct impacts to the multi-line bus stop, to the extent feasible. If construction activities cannot avoid impacts to the bus stop, then the District shall coordinate with the Humboldt Transit Authority to temporarily relocate a bus stop in an acceptable location that minimizes effects to bus users and meets safety requirements.

Significance: Less than significant with mitigation.

3.16.6 Cumulative Impacts

Impact: TRA-C-1: Would the project result in cumulatively considerable contributions to cumulative impacts related to transportation.

The geographic scope for the analysis of cumulative impacts on transportation and circulation consists of the areas that use the same roadways as the project.

Construction of the project may overlap with cumulative projects that would be under construction or would be reasonably foreseeable in the project area. However, no past, present, or reasonably foreseeable projects have been identified that would result in substantial changes in construction traffic, operational traffic, or changes to the circulation system in the project area.

As summarized in Impacts TR-1 through TR-4, project construction and operational activities would not conflict with applicable plans, ordinances and policies related to circulation in Humboldt County, would not increase hazards due to a design feature or incompatible use, would not affect fire protection services or emergency response times to the project site or surrounding, and would not decrease the performance or safety of public transit, bicycle, and pedestrian facilities.

Therefore, the potential for cumulative impacts to occur related to transportation during construction and operation of the proposed project activities would be less than significant.

Mitigation: No mitigation is necessary.

Significance: Less than significant.

3.16.7 References

California Department of Transportation (Caltrans). 2013. 2013 All Traffic Volumes on CSHS.

Humboldt County Association of Governments (HCAOG), 2012, Humboldt Regional Bicycle Plan, Update 2012.

Humboldt County Association of Governments (HCAOG), 2014, 20-Year Regional Transportation Plan, 2014 Update. August.

Humboldt County, 1998. Humboldt County General Plan, Volume I, Framework Plan.

3.17 Utilities and Service Systems

This section evaluates the potential impacts related to utilities and service systems with implementation of the project. The Setting section describes the existing environmental setting as it relates to utilities and service systems and the Regulatory Framework section describes the applicable regulations at the federal, State and local level. The Impacts and Mitigation Measures section establishes the thresholds of significance, evaluates potential impacts to utilities and service systems, and identifies the significance of impacts. Where appropriate, mitigation is presented to reduce impacts to less-than-significant levels.

3.17.1 Setting

3.17.1.1 Water

WCCSD receives all its water from the surface and surface-influenced waters of Willow Creek under a single water right permit issued by the California Department of Water Resources. WCCSD is currently permitted to take 5.7 cfs under their water right permit. On average, WCCSD uses 250 to 270 million gallons per year (1.1 cfs), with a peak demand of 1,800 gpm (4.0 cfs). WCCSD water plant current capacity is 2,100 gpm (4.7 cfs) (TVCE 2014). The District's source of supply consists of six wells located in the mouth of Willow Creek. 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 2.95 MGD. Total source capacity is 2,610 gpm, or 3.76 MGD (Humboldt County 2012).

Intake Facilities

WCCSD employs three methods of raw water intake to draw waters from Willow Creek and supply it to the water plant. The first of these methods includes two networks of infiltration galleries located in the streambed of Willow Creek at an approximate depth of 5 feet below the streambed. Utilizing the streambed gravels for some level of filtration, these galleries delivery water to two pairs of wells (Wells 1 and 3 and Wells 5 and 6) outfitted with pumps located in the well field just east of the treatment plant. Two additional wells (Wells 2 and 4) located in the well field also draw surface-influenced groundwater and deliver it to the plant. During peak demands, WCCSD can also utilize a surface intake structure located in-line with the easterly gallery network (Wells 5 and 6) on the bank of Willow Creek. (TVCE 2014)

Treatment Plant

The new WCCSD water treatment plant went online in June of 2007. The plant is a pressure media filtration plant that includes three filter media vessels. Before entering the plant, the raw water is injected with chlorine and polymer by chemical feed pumps. Chemical dosing is achieved by a streaming current monitor connected to the plant PLC. An in-line mechanical mixer then mixes the chemicals and raw water. After mixing, the water enters a pressurized 3,000-gallon surge tank. After the surge tank, the water is then delivered to a manifold, which feeds into three pressurized 8,000-gallon tanks to allow for contact time. Water is then fed through the three pressurized filter vessels. The filter vessels each include a layer of gravel covered by a layer of sand topped with a layer of anthracite charcoal. Treated water from the filter vessels is fed into a manifold then injected with a dose of chlorine to compensate for the chlorine loss during filtration and this treated water is released into the distribution system. (TVCE 2014)

Storage and Distribution

The WCCSD water distribution system currently includes approximately 940 service connections, 28 miles of mainline piping, 77 fire hydrants, 12 wharf hydrants, and 98 backflow prevention devices. The distribution system is divided into nine pressure zones. (TVCE 2014)

3.17.1.2 Wastewater

There is currently no centralized wastewater system for the community. All of the residences and businesses in Willow Creek rely solely on individual septic systems. There are no municipal or industrial wastewater discharges in the Willow Creek Watershed. The minimum setback for leach fields or septic tanks is 100 feet from any perennial stream, body of water or well. The minimum setback is 50 feet from any seasonal stream. With the increase in unpermitted development within this watershed it is unknown if this standard is being met (TCVE 2014).

3.17.1.3 Stormwater

Stormwater runoff within the Sewered Area is generally collected in drainage channels and culverts and directed to local waterways. The community of Willow Creek has minimal drainage infrastructure. The Highway 96 Storm Water Diversion project was completed in 2013. Historically (since 1967), the storm drains collecting storm water runoff from Highways 299 and 96, Country Club Drive, Mayfair Street, and The Terrace downtown discharge stormwater into Willow Creek at the Highway 96 Bridge, just upstream from the WCCSD Treatment Plant's freshwater intakes. The diversion project captured this water at the bridge and diverted it through a natural channel into Creekside Park where the water is impounded and naturally handled through evaporation and ground water absorption. During periods of intense rainfall there is a stormwater overflow which places the stormwater overflow in the historic channel. This project has greatly increased the protection of the community's water system from the contamination of fuel spills and septic failures in the downtown area. Outside of such accidents, this system collects surface waters and captures several springs which historically provided water to the trailer park and cabins developed in the Creekside Park area in the 1930s and 1940s (TVCE 2014).

3.17.1.4 Solid Waste

Solid waste and recyclables pickup within Willow Creek are collected by Tom's Trash located on Highway 299 south of Willow Creek. The Anderson Landfill is located at 18703 Cambridge Road in Anderson, California. The land owner is Waste Management of California, Inc a subsidiary of Waste Management, Inc. The landfill's maximum permitted throughput is 1,850 tons per day. The remaining capacity is 11,914,025 cubic yards. The estimated closure date is 2055 (Shasta County 2008).

3.17.1.5 Energy

The Pacific Gas & Electric Company (PG&E) provides electricity and natural gas to the community of Willow Creek. PG&E is regulated by the California Public Utilities Commission (CPUC), which establishes rules for operation, customer rates, and PG&E's rate of return. PG&E operates transmission and distribution lines throughout the county and approximately 35 electric substations to serve local communities. PG&E has a substation in Willow Creek.

3.17.2 Regulatory Framework

3.17.2.1 *Federal*

Clean Water Act

The Clean Water Act establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. Under the Clean Water Act, the U.S. EPA has implemented pollution control programs such as setting wastewater standards for industry and water quality standards for all contaminants in surface waters. The Clean Water Act made it unlawful to discharge any pollutant from a point source (direct discharge) into navigable waters. The U.S. EPA's NPDES permit program controls direct and non-point discharges through the NCRWQCB.

3.17.2.2 *State*

Porter-Cologne Water Quality Control Act

In 1969, the California Legislature enacted the Porter-Cologne Water Quality Control Act to preserve, enhance, and restore the quality of the state's water resources. The act established the SWRCB and nine RWQCBs as the principal State agencies with the responsibility for controlling water quality in California. The SWRCB is responsible for implementing the Clean Water Act, issues NPDES permits to cities and counties through Regional Water Quality Control Boards, and implements and enforces the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) (Order No. 2009-0009, as amended by Order No. 2010-0014). Order No. 2009-0009 took effect on July 1, 2010 and was amended on February 14, 2011. The Order applies to construction sites that include one or more acres of soil disturbance. Construction activities include clearing, grading, grubbing, excavation, stockpiling, and reconstruction of existing facilities involving removal or replacement.

California Integrated Waste Management Act

The California Integrated Waste Management Act of 1989 (Public Resources Code Division 30), enacted through Assembly Bill (AB) 939 and modified by subsequent legislation, required all California cities and counties to implement programs to divert waste from landfills (Public Resources Code Section 41780). Compliance with AB 939 is determined by the Department of Resources, Recycling, and Recovery (Cal Recycle), formerly known as the California Integrated Waste Management Board (CIWMB). Each county is required to prepare and submit an Integrated Waste Management Plan for expected solid waste generation within the county to the CIWMB. The Act also requires each city to prepare a Source Reduction and Recycling Element for achieving a solid waste diversion goal of 25 percent by January 1, 1995, and 50 percent by January 1, 2000. In 2012, the unincorporated area of Humboldt County met or exceeded the waste diversion mandate of 50 percent set by the Integrated Waste Management Act of 1989 (Humboldt County 2014).

Utility Notification Requirements

Title 8, Section 1541 of the California Code of Regulations requires excavators to determine the approximate locations of subsurface installations such as sewer, telephone, fuel, electric, and waterlines (or any other subsurface installations that may reasonably be encountered during excavation work) prior to opening an excavation. The California Government Code (Sections 4216 et seq.) requires owners and operators of underground utilities to become members of and participate in a regional notification center.

According to Section 4216.1, operators of subsurface installations who are members of, participate in, and share, in the costs of a regional notification center are in compliance with this section of the code. Underground Service Alert North (USA North) receives planned excavation reports from public and private excavators and transmits those reports to all participating members of USA North that may have underground facilities at the location of excavation. At this point, members of the regional notification center will mark or stake their facilities, provide information, or give clearance to dig (USA North 2014).

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates Investor-Owned Utilities, including those that offer electric, natural gas, steam, and petroleum service to consumers. CPUC regulates both electric and natural gas rates and services provided by these utilities, including in-state transportation over the utilities' transmission and distribution pipeline systems, storage, procurement, metering and billing. Natural gas regulations are found in General Orders 58, 94, 96, and 112, while electrical distribution regulations are found in General Orders 95, 128, 131, 165, and 166.

California Energy Commission

Buildings constructed after June 30, 1977 must comply with standards identified in Title 24 of the CCR. Title 24, established by California Energy Commission (CEC) in 1978, requires the inclusion of state-of-the-art energy conservation features in building design and construction including the incorporation of specific energy conserving design features, use of non-depletable energy resources, or a demonstration that buildings would comply with a designated energy budget.

3.17.2.3 Regional and Local

North Coast Regional Water Quality Control Board

The NCRWQCB develops and enforces water quality objectives and implementation plans that safeguard the quality of water resources in its region, including Humboldt County. In accordance with California Water Code Section 13263, the State's RWQCBs are authorized to issue Waste Discharge Requirements (WDRs) as well as periodically review self-monitoring reports submitted by the discharger, and perform independent compliance checking.

NCRWQCB Order No. R1-2009-0045, Waste Discharge Requirements for Low Threat Discharges to Surface Waters in the North Coast Region, applies to discharges of construction excavation dewatering into the storm drain system (NCRWQCB 2009). This Order requires development of a Best Management Practices/Pollution Prevention Plan to characterize the discharge and to identify specific measures to control the discharge, such as sediment controls to ensure that excessive sediment is not discharged, and flow controls to prevent erosion and flooding downstream of the discharge.

Humboldt County General Plan

The following Humboldt County General Plan policies are applicable to the proposed project.

4531 Policies

- 1. Population projections and other related demographic information in the General Plan should be used as a guide for determining the size of wastewater disposal treatment facilities, and the extent of services provided.*

2. *Responsible County agencies shall continue to coordinate with special districts in maintaining data on wastewater facility capacity.*
6. *Sewage disposal systems placed on an existing lot must meet all of the requirements of the Humboldt-Del Norte Department of Public Health and the North Coast Regional Water Quality Control Board.*

3.17.3 Evaluation Criteria and Significance Thresholds

The project would cause a significant impact related to utilities and service systems, as defined by the CEQA Guidelines (Appendix G), if it would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- 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;
- 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;
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Comply with federal, state, and local statutes and regulations related to solid waste.

3.17.4 Methodology

Potential impacts on utilities are analyzed based on the potential for the proposed project to affect the facilities described above in Section 3.17.1, Setting during construction or operation.

3.17.5 Impacts and Mitigation Measures

Impact: UTI-1: Would the project exceed the wastewater treatment requirements of the applicable Regional Water Quality Control Board.

The proposed project is the construction of a sewage treatment facility and conveyance system that would treat wastewater flows from properties within the Sewered Area that would connect to the WCCSD's collection system. WCCSD would complete a Report of Waste Discharge (RWD) Application, which is a necessary part of the wastewater system development and implementation. The NCRWQCB would issue a new NPDES permit and associated waste discharge requirements (WDRs), which would be based in part on the RWD, which would describe the new collection system, treatment facilities, and disposal practices. This process includes completion of Form 200 which is submitted to the State as well as a Hydrogeologic/Anti-Degradation Analysis. The sewage treatment facility would be designed to meet waste discharge requirements established by the NCRWQCB, which would consider water quality

objectives established in the Basin Plan. One of the primary objectives of the project is to bring it into conformance with NCRWQCB requirements. Because the proposed project would be consistent with NCRWQCB discharge requirements, no significant impact would occur.

Mitigation: No mitigation is necessary.

Significance: Less than significant.

Impact: **UTI-2: Would the project 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.**

The project would involve the construction and operation of a recirculating gravel filter treatment facility, including a gravity wastewater collection system (and pump station) with subsurface disposal (leachfield) at the Mill/Stockel site. For a discussion of impacts resulting from construction and operation of the proposed facility, including the collection and disposal systems, the reader is referred to the impacts discussions in other resource sections of Chapter 3 or in Table 1-1 (Summary of Impacts and Mitigation Measures) for a summary of impacts and mitigation measures. As each phase of construction is completed, individual properties would be required make connections to the sewer pipelines. Construction associated with these connections would require minor excavation, which may result in minor environmental effects. Impacts related to private sewer connections would be evaluated individually as part of the county's permitting process and all sewer connections would comply with county Municipal Code requirements. The impact is less than significant.

Mitigation: No mitigation is necessary.

Significance: Less than significant.

Impact: **UTI-3: Would the project 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.**

Proposed construction and operation would not require the construction of stormwater drainage facilities or expansion of existing facilities, other than minor improvements to drainage facilities on and nearby the site of the proposed treatment facility. Existing stormwater drainage facilities along roadways affected by pipeline construction would not be altered under any phase of the project. Construction of pipelines would require some alterations to drainage flows within the roadways, but these alterations would be minor and temporary.

Since project construction would disturb more than 1 acre, stormwater discharges are regulated under the NPDES stormwater program. The proposed project would comply with County of Humboldt regulations and guidelines pertaining to stormwater runoff, including requirements imposed by the construction general NPDES permit. The construction general permit requires compliance with effluent limits and other permit requirements, such as the development of a Stormwater Pollution Prevention Plan (SWPPP). The design elements of the SWPPP would be incorporated as part of the project's grading and drainage plan to ensure that the elements would be constructed properly. Compliance with county regulations would ensure that no significant impact would occur.

Mitigation: No mitigation is necessary.

Significance: Less than significant.

Impact: **UTI-4: Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.**

Water is likely to be used during construction of the proposed project to prevent dust from becoming airborne, cleaning of construction equipment, mixing of concrete, or meeting other construction-related needs. Water use during the construction phase would be short-term, and would cease with the completion of construction. Construction is expected to take approximately seven months, beginning in March, 2017. The collection area would be completed first and take approximately 14 weeks. Pump station construction would require about one week; construction of the treatment facility and leach fields would take approximately two months. Construction activities would not require additional water treatment facilities, supplies, or entitlements and all construction-related water demands would cease upon construction completion. Therefore, no significant impacts would occur during construction.

Once operational, the proposed project at buildout would handle approximately 38,000 gallons of water per day (average dry weather flow). Beyond laboratory processes, no potable water is used at the treatment facility. Therefore, the operational impacts of the proposed project would be less than significant.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

Impact: **UTI-5: Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.**

The proposed project would provide additional wastewater treatment capacity in the Sewered Area. However, it would not include components, such as new commercial or residential development, that would increase the amount of wastewater generated in the Sewered Area. The project has been sized to meet estimated wastewater flow generation at buildout based on the development levels as indicated in the Humboldt County General Plan and Willow Creek CAP. Average dry weather flow for the project is 38,000 gpd. This flow accounts for both current conditions and future expansion. A peaking factor of three was used to arrive at a peak wet weather flow (highest hourly flow during the wet season) of 114,000 gpd. It is anticipated that approximately seven more residential units and five more commercial businesses would be developed in the Sewered Area within the next 10 years. The flows associated with this development, as well as additional capacity for future expansion of the service area, have been included in the basis of design for the collection, treatment, and disposal systems.

The wastewater generated by construction workers during the course of construction would be minor and inconsequential (construction portable toilet). Therefore, the proposed project would have a beneficial rather than an adverse effect on wastewater treatment capacity in the project area.

Mitigation: No mitigation is necessary.

Significance: **Less than significant.**

Impact: **UTI-6: Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.**

Construction would generate a small amount of debris which would be hauled away to an approved transfer station and/or landfill. Biosolids would be generated during operations and periodically need to be hauled away. The best solids handling alternative for the project is to dewater the solids using a batch process onsite and then haul the dried solids, or "cake", to either a landfill or composting operation. In this process, the septic tank solids are dewatered and not stabilized further while on site. The District would

periodically need to have the dried solids hauled to either a landfill or composting operation for disposal. The landfill in Anderson is the nearest landfill that would accept these solids.

Because no significant structure demolition that would generate waste is proposed during construction of the proposed project, the impact due to construction of the project on existing landfill capacity would be minor and incremental. Once the sewage treatment facility is operational, it is anticipated that approximately two tanker trucks per year would be required under buildout conditions to haul treated solids from the treatment facility to either the Anderson Landfill or another suitable permitted facility for disposal. This assumes approximately 30 cubic yards of dewatered solids per year and a 3,000 gallon tanker truck hauling the solids. Consequently, construction and operation of the proposed project would be accommodated by the permitted capacity of existing disposal facilities, and no significant impacts would occur.

Mitigation: No mitigation is necessary.

Significance: Less than significant.

Impact: **UTI-7: Would the project comply with federal, state, and local statutes and regulations related to solid waste.**

The proposed project would comply with all federal, state, and local statutes related to solid waste, including AB 939. This would include compliance with the Humboldt Waste Management Authority's recycling, hazardous waste, and composting programs in the county to comply with AB 939. As such, no significant impacts would occur as a result of the proposed project (see the discussion for Impact UTI-6, above).

Mitigation: No mitigation is necessary.

Significance: Less than significant.

3.17.6 Cumulative Impacts

Impact: **UTI-C-1: Would the project result in a cumulatively considerable contribution to cumulative impacts related to utilities.**

The geographic area for cumulative utility and service systems impacts consists of the service area of the WCCSD. With regard to consumption or generation related to water, wastewater, stormwater, and solid waste, because the proposed project would result in very minor increases in generation (i.e., wastewater and stormwater) or have a potentially beneficial effect (i.e., stormwater quality), and because sufficient capacity exists to serve existing and future cumulative development, the proposed project would not contribute to any significant cumulative impacts on these utilities.

Mitigation: No mitigation is necessary.

Significance: Less than significant.

3.17.7 References

Humboldt County, 2012, Humboldt County General Plan Update Draft Environmental Impact Report
SCH# 2007012089, April.

Humboldt County, 2014, Humboldt County General Plan, Board of Supervisors Markup Draft, Chapter 10.
Conservation and Open Space Elements, October 6.

North Coast Regional Water Quality Control Board (NCRWQCB), 2009, Order No. R1-2009-0045, General NPDES Permit No. CA0024902, Waste Discharge Requirements for Low Threat Discharges to Surface Waters in the North Coast Region.

Shasta County, 2008, Anderson Landfill, Inc. SWIS 45-AA-0020 Shasta County Issued Solid Waste Facility Permit, July.

Trinity Valley Consulting Engineers, Inc. (TVCE), 2014, Willow Creek Community Services District 2014 Updated Watershed Sanitary Survey Willow Creek Watershed, prepared for Willow Creek Community Services District, May.

USA North, 2014, California Excavation Law, accessed at <http://usanorth811.org/wp-content/uploads/2014/08/CA-Excavation-Law-Handbook.pdf>.

Winzler & Kelly, 2008, Community Infrastructure & Services Technical Report, prepared for County of Humboldt Community Development Services Department, July.

This page intentionally left blank

4. Alternatives

4.1 Introduction

This chapter presents the alternatives analysis for the project. Section 15126.6(a) of the CEQA Guidelines requires EIRs to “describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.” Section 15126.6(b) of the CEQA Guidelines also identifies the purpose of an EIR’s discussion and analysis of project alternatives which is to identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

4.2 Identifying Project Alternatives

WCCSD has been working toward a wastewater solution for over 10 years. During this time, multiple reports have been generated, and various sites have been evaluated for wastewater disposal suitability.

Due to the lack of available land in the downtown Willow Creek area to construct new or reserve leachfields to replace existing failing leachfields, the wastewater solution would entail a central collection system to convey the wastewater elsewhere. Since the topography of the downtown area allows for gravity conveyance, there are two main types of collection systems that could be appropriate: a gravity system with direct service connections to businesses and residences, or a septic treatment effluent discharge (STED) system with individual septic tanks at each connection.

The STED system would use individual septic tanks at each service connection. These tanks would be used to collect wastewater from the user, settle out the solids, and send the effluent by gravity into the collection system, which then routes it to the treatment plant. By holding back the solids, the pipes in the collection system would be smaller than traditional gravity collection systems, and four-inch piping would likely be sufficient.

A septic tank effluent pumping (STEP) system was also analyzed. In 2002, Guy Conversano completed his report titled “Preliminary Wastewater/Septage Engineering Feasibility Report” (2002). This report recommended a phased approach, sewerage the downtown area first, and suggested a Phase 1 STEP system. The STEP system is very similar to the STED system in that it uses individual septic tanks. However, instead of a gravity collection system, each individual septic tank would have a small pump which pumps the effluent into a pressurized collection system, which then routes flows to the treatment plant. Because of its similarity to the STED system, the STEP system is not discussed further in this EIR.

Once the wastewater is collected, it must be conveyed to a suitable location for treatment and/or disposal. Ideally, this location would be as close as feasible to the Sewered Area to minimize environmental impacts from construction. The potential disposal sites that are relatively close and have a large enough area to dispose of the wastewater generated by the sewered area include the Mill site, Stockel property, Trinity Valley Elementary School (TVES), and Veterans Park (reference Figure 2-3 for the Mill and Stockel sites).

GHD was hired in 2011 to assist in the process of developing a wastewater solution for WCCSD. GHD performed disposal site evaluations for the following sites: the Mill Site, Stockel property, and Trinity Valley Elementary School. GHD concluded that all of these sites are suitable for use as disposal site leachfields; however, the Mill Site was determined to be the most suitable. Trinity Valley Consulting Engineers investigated the soils at Veterans Park in 2012. Their percolation suitability results showed that soils within Veterans Park are either in Zone 2 or Zone 1, meaning that they are acceptable for wastewater disposal.

Given the above, there are two main potential areas for a treatment/disposal site: 1) northwest of the downtown Willow Creek Area (at the Trinity Valley Elementary School), or 2) northeast of the downtown area (Mill, Stockel, or Veterans Park sites). Of all of the potential disposal sites, the Mill site is the closest to downtown Willow Creek.

The alternatives analyzed in this chapter in addition to the proposed project include the No Project Alternative and the STED collection system alternative. The environmentally superior alternative is described in Section 4.5, and alternatives which were considered but are not being carried further in this Draft EIR are described in Section 4.6.

4.3 Description of Alternatives

4.3.1 Alternative 1: No Project Alternative

The CEQA Guidelines require that the alternatives be compared to the proposed project's environmental impacts and that the "no project" alternative be considered (Section 15126.6[d][e]). CEQA Guidelines Section 15126.6(e)(1) states that the purpose of describing and analyzing the no project alternative is "to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project." The no project analysis is required to "discuss the existing conditions at the time the notice of preparation is published...as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services (Section 15126.6[e][2]). If the project is a development project on identifiable property, the "no project" alternative is the circumstance under which the project does not proceed. Here the discussion would compare the environmental effects of the property remaining in its existing state against environmental effects which would occur if the project is approved. In certain instances, the no project alternative means "no build" wherein the existing environmental setting is maintained. This would be the case for the WCCSD Downtown Wastewater Development Project. Under the No Project Alternative, the businesses and residences in the downtown core and immediately surrounding area of Willow Creek would continue to be on individual septic systems.

None of the short-term construction impacts or long-term operational impacts described in Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, of this EIR would occur. The No Project

Alternative would eliminate the potential for short-term construction period impacts associated with aesthetics, air quality, biological and cultural resources, hazardous materials, noise, traffic, and disruption of utilities. There would be no vegetation removal, ground disturbance or construction, and therefore there would be no impact on aesthetics, forest resources, biological resources, cultural resources, geology, hazards, or land use. Operational impacts associated with operational noise, air quality, and greenhouse gas emissions would also be eliminated.

However, there are also negative environmental impacts that would occur under the No Project Alternative. In 2005 and again in 2010, the Humboldt County Division of Public Health passed a resolution naming Willow Creek a blighted community; the lack of wastewater infrastructure was identified as a contributing factor to this blight determination. Under the No Project Alternative, the aging septic systems in Willow Creek would likely continue to degrade, impacting ground and surface water in the area, negatively affecting public health and the environment, and limiting future residential and commercial development. Furthermore, all of the construction and operational impacts of the proposed project can be reduced to less than significant with implementation of mitigation measures, so the No Project Alternative is not necessarily environmentally superior to implementation of the proposed project as mitigated.

4.3.2 Alternative 2: STED Collection System

A STED system uses individual septic tanks at each service connection. These tanks are used to collect wastewater from the user, settle out the solids, and send the effluent by gravity into the collection system, which then routes it to the disposal leachfield. By holding back the solids, the pipes in the collection system would be smaller than traditional gravity collection systems, and four-inch piping would likely be sufficient.

Given the age of most businesses and residential units in the area, it is likely that all existing septic tanks would have to be replaced with new tanks. The new tanks would then require annual inspections to confirm they are working appropriately and only sending effluent, not solids, into the collection system. As with a traditional septic system, the tanks would need to be pumped every three to five years.

4.3.2.1 Aesthetics

The visual resource impacts of this alternative would be less than those of the proposed project. Because the individual septic tanks would serve as a source of primary treatment, there would be no need to construct a wastewater treatment plant, thus eliminating the construction and operational aesthetic impacts of a treatment plant.

4.3.2.2 Agriculture and Forest Resources

As with the proposed project, there would be no impact to agricultural resources or conflict with a Williamson Act or agricultural zoning under Alternative 2. There would also be no forest land impacts under Alternative 2. The collection system would be constructed within existing roadways, and there is no forest or agriculture land that would be impacted at the disposal site.

4.3.2.3 Air Quality

The air quality impacts associated with construction of Alternative 2 would generally be similar to the proposed project for both air pollutants and air contaminants, as approximately the same construction effort would be put into each. The operational air quality impacts with this alternative would also be approximately the same as the proposed project because of the similarity in operations. The air quality

impacts resulting from the maintenance that would be required for each individual septic tank for this alternative would be offset by the maintenance that would be required at the treatment plant for the proposed alternative.

4.3.2.4 Biological Resources

Alternative 2 would have similar impacts on biological resources as the proposed project. Both alternatives would entail trenching in the same areas for construction of the collection system, and the construction of a leachfield would be required for each alternative. The additional excavation required for the installation of septic tanks under Alternative 2 could have additional impacts on biological resources; however, this would be offset by construction activities associated with the treatment plant under the proposed project.

4.3.2.5 Cultural Resources

The potential impacts on cultural resources with Alternative 2 would be similar to those of the proposed project. Although the two alternatives would be constructed similarly, Alternative 2 would require more excavation for the installation of a new septic tank at each individual connection location. This extra excavation could potentially unearth unknown cultural resources, which would be a significant impact. Conversely, the proposed project would require excavation for the treatment plant that would not be required under Alternative 2.

4.3.2.6 Geology and Soils

Alternative 2 would require excavation, backfilling, and structures to be built in the same areas as the proposed project. With the two alternatives being constructed in a similar manner in the same soils, the construction of Alternative 2 would be expected to result in the same potential seismic and erosion hazards that would be anticipated with construction of the proposed project.

4.3.2.7 Greenhouse Gas Emissions

During construction, this alternative would have similar GHG emissions as the proposed project. Construction efforts would be approximately equal, and the same equipment would be used for each alternative.

Operationally, this alternative would have less GHG emissions than the proposed project. While a treatment plant would be used under the proposed project, Alternative 2 would not have GHG emissions associated with construction and operation of the treatment facility.

4.3.2.8 Hazards and Hazardous Materials

Alternative 2 would include the same uses on the same scale as the proposed project. Therefore, this alternative would generally have the same potential hazards and hazardous materials impacts as the proposed project.

4.3.2.9 Hydrology and Water Quality

Because Alternative 2 would generally have the same construction footprint as the proposed project, they would both have similar impacts on stormwater runoff and erosion. Collection system piping would generally be placed within existing roadways, so there would be minimal impacts on hydrology and water quality within the downtown Willow Creek area. The construction of the treatment plant would create some impervious surfaces; however, the treatment plant is relatively small in size and scale.

With the lack of a treatment plant under Alternative 2, primary treated wastewater would be routed to a disposal leachfield, while secondary treated wastewater would be applied to the leachfield under the proposed project. This primary treated wastewater would leach into the groundwater system, and ultimately into the Trinity River, which could lead to water quality impacts. These impacts are lessened with the incorporation of a treatment plant under the proposed project.

4.3.2.10 Land Use and Planning

In general, the land use and planning implications of Alternative 2 would be the same as those described for the proposed project. As with the proposed project, Alternative 2 properties would have the same land use and zoning as the proposed project. Alternative 2 would also require the same permits as the proposed project (Encroachment Permits from Caltrans and the County and NPDES Report of Waste Discharge).

4.3.2.11 Mineral and Energy Resources

As with the proposed project, there would be less than significant impacts to mineral and energy resources associated with Alternative 2. Alternative 2 would use a similar amount of products (i.e., aggregate) derived from mineral resources and less energy than the proposed project, as there would be no treatment plant associated with Alternative 2.

4.3.2.12 Noise

Similar to the proposed project, development of this alternative would generate construction noise associated with the use of heavy equipment for demolition, site grading and excavation, installation of utilities, paving, and building fabrication.

Under the proposed project, there would be noise generated at the treatment plant from pumps, blowers, and the operation of equipment necessary for hauling away dried solids on a regular basis. However, this would take place at the proposed treatment site that is not close to residences or businesses. Conversely, Alternative 2 would require maintenance and pumping of each individual septic tank in the downtown area. These activities would generate noise within the collection area, which is closer to residents, thus having a greater effect on noise sensitive receptors in the project area.

4.3.2.13 Population and Housing

The potential for direct impacts related to population and housing for Alternative 2 would be limited to the short-term increase in employees required to construct the project, which would be similar to that of the proposed project. No new employees would be needed under Alternative 2, same as the proposed project. Impacts would be similar to the proposed project.

4.3.2.14 Public Services

As with the proposed project, Alternative 2 would not result in any new need for additional or altered public/government facilities and services. Impacts would be similar to the proposed project.

4.3.2.15 Recreation

As with the proposed project, Alternative 2 would have no impact to recreational resources within the project area.

4.3.2.16 **Transportation**

Transportation impacts associated with this alternative would be similar to those of the proposed project. During construction, Alternative 2 and the proposed project would both have minimal traffic impacts in the downtown Willow Creek area, including Highway 299 and a short stretch of Highway 96. Construction activities for each alternative would impact the same areas, with the exception of the treatment plant which would not exist with Alternative 2. Operationally, the impacts of either alternative on transportation would be minimal and unnoticeable.

4.3.2.17 **Utilities and Service Systems**

Alternative 2 would result in greater utilities impacts than the proposed project because each property in the collection area would require individual septic tanks at each service connection as opposed to a treatment facility and leachfield under the proposed project. Impacts to storm drainage and solid waste disposal would be similar.

4.4 Comparison of Alternatives Analyzed

Table 4-1 summarizes the environmental advantages and disadvantages associated with the proposed project and the two alternatives analyzed above. CEQA Guidelines Section 15126.6(e)(2) states that if the environmentally superior alternative is the No Project Alternative, then the EIR shall also identify an environmentally superior alternative from among the other alternatives.

Table 4-1 Comparison of Alternatives to the Project, as Mitigated

Resource Category	Alternative 1 No Project	Alternative 2 STED
Aesthetics	Less	Less
Agriculture and Forestry Resources	Equal	Equal
Air Quality	Less	Equal
Biological Resources	Less	Equal
Cultural Resources	Less	Equal
Geology and Soils	Less	Equal
Greenhouse Gas Emissions	Less	Less
Hazards & Hazardous Materials	Less	Equal
Hydrology and Water Quality	More	More
Land Use and Planning	Less	Equal
Mineral Resources	Less	Equal
Noise	Less	More
Population and Housing	More	Equal
Public Services	Less	Equal
Recreation	Equal	Equal

Resource Category	Alternative 1 No Project	Alternative 2 STED
Transportation and Traffic	Less	Equal
Utilities and Service Systems	More	Equal

Notes: "Less" indicates an impact that is less than the proposed project (environmentally superior)
 "More" indicates an impact that is greater than the proposed project (environmentally inferior)
 "Equal" indicates an impact that is equal to the proposed project (neither environmentally superior nor inferior)

4.5 Environmentally Superior Alternative

CEQA Guidelines Section 15126.6(e)(2) states that if the environmentally superior alternative is the No-Project Alternative, then the EIR shall also identify an environmentally superior alternative from among the other alternatives. The No Project Alternative would have the least impacts; however, it would fail to meet the project objectives and the Sewered Area would still be on individual septic systems prone to failure and replacement. Alternative 2 would have similar impacts compared to the proposed project with the exception of hydrology and water quality and noise, which would have greater impacts than the proposed project. As discussed in Chapter 3, the impacts resulting from the proposed project can all be satisfactorily mitigated to less than significant levels based on impact thresholds. Accordingly, based on the analysis presented above, the proposed project (as mitigated) would be considered the Environmentally Superior Alternative, as it would satisfy the project objectives while resulting in the least impact to the environment.

4.6 Alternatives Considered but not Carried Forward in this EIR

Section 15126.6(c) of the State CEQA Guidelines requires EIRs to identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process, and briefly explain the reasons underlying the lead agency's determination.

There are four main components that are involved in a new central wastewater system: the collection system, treatment system, disposal system, and solids handling. The key difference between the proposed project and Alternative 2 (described above) is the collection system type. In addition to the collection system alternatives, alternatives with respect to treatment, disposal, and solids handling were also considered. The following alternatives were identified during the early planning phases of the project and during project scoping. The lead agency has considered the following alternatives and rejected them for the reasons below.

4.6.1 Treatment System Alternatives

Five types of wastewater treatment alternatives were considered for this project: a recirculating gravel filter (RGF) system (proposed project), a sequencing batch reactor (SBR) system, an AdvanTex system, a SEQUOX system, and a system that would produce effluent suitable for reuse.

4.6.1.1 Sequencing Batch Reactor

An SBR is a modification to the activated sludge process, which is the standard process used to achieve secondary treatment. While conventional activated sludge facilities typically rely on multiple basins, SBR systems combine all of the treatment steps and processes into one basin. As with an RGF, an SBR would output secondary treated wastewater, so the two alternatives would have the same impacts on water

quality. An SBR plant and an RGF plant would also be constructed in the same location, have similar footprints, and generate an equal amount of noise. With the environmental impacts of both systems being equal, an RGF system was chosen as part of the proposed project because it would be more economically feasible and simpler to operate.

4.6.1.2 *SEQUOX*

Aero-Mod manufactures a proprietary SEQUOX process that is based on the principles of the activated sludge process. The SEQUOX technology is a modification of the activated sludge process that uses sequenced aeration and continuous clarification, making it capable of meeting stricter regulatory requirements. Total Nitrogen levels of 3 mg/L have been achieved in these systems, meaning that this system would likely produce effluent of better water quality than the proposed project. However, when Aero-Mod was contacted to determine budgetary cost information for a system sized for Willow Creek, their response was that a SEQUOX system would be economically infeasible for a treatment facility of this size. This alternative was not pursued further.

4.6.1.3 *AdvanTex*

The AdvanTex process is a proprietary technology that is similar to the process used in an RGF facility; however, it uses a textile membrane for the filtration process. Primary treatment is provided by a community septic tank, and septic tank effluent then enters a two-compartment processing tank. In the first compartment, the septic tank effluent separates into three zones: a sludge layer, a scum layer, and a clear layer. Effluent from the clear layer flows into the second compartment of the tank through holes in the tank's baffle wall. A proprietary Biotube pumping package in the second compartment then pumps the filtered effluent to a distribution manifold in the AdvanTex pod. This effluent then percolates through the textile membrane media and is collected at the bottom of the filter basin by a drain pipe. The drain pipe returns the treated water to the recirculating splitter valve, where it is then split between the processing tank and the final discharge. AdvanTex units are designed to meet effluent ammonia levels of 2 mg/L or less, and they can be coupled with an upflow filter to meet total nitrogen requirements of less than 10 mg/L. Because of the similarities in size and treatment between an AdvanTex system and the proposed project, the environmental impacts of the two systems would generally be equal, with the exception of water quality. An AdvanTex system could potentially produce slightly higher quality effluent than the proposed project; however, constructing a system of this type would be cost prohibitive.

4.6.1.4 *Treatment Systems for Reclaimed Water*

The proposed project includes subsurface percolation through a community leachfield for effluent disposal. The following additional treatment alternatives could be used to produce reclaimed water if reclamation of the disposal water was determined to be a feasible alternative (such as the use of it for irrigation). Both of these systems would add increased construction and operation and maintenance costs:

1. **Membrane Bioreactors (MBR)** - The MBR process uses a modification of the activated sludge process, which in certain ways is similar to the SBR process (i.e. microprocessor based controls, diffused aeration and eliminating the need for external gravity settling tanks). Where the SBR uses gravity settling to clarify the effluent, MBRs use a microscopic membrane. Essentially, a low vacuum is used to pull the effluent through the membrane, with effluent turbidity's of less than 0.2 NTU.

2. Sand or Mixed Media Filtration - Another approach to achieving tertiary treated effluent is to filter the secondary treated effluent through either a sand or mixed media (sand and anthracite) filter to achieve turbidities of less than two NTU.

While these treatment systems would produce higher quality effluent than the proposed project, they would also have higher GHG emissions, as they would require more power for operation. Additionally, there are no suitable reuse sites that have sufficient area and appropriate crop or landscape coverage in close proximity to any of the proposed treatment plant sites. For these reasons, as well as the increased capital and operations and maintenance costs that would be associated with constructing one of these plants, these alternatives were not pursued further.

4.6.2 Disposal Location Alternatives

As mentioned in Section 4.2, there are four potential disposal site locations: the Mill site, Stockel property, TVES, or Veterans Park. All of the sites would be appropriate for infiltration disposal, but the Mill site was determined to be the most suitable. Along with being the most suitable site for infiltration, the Mill site is also the closest of the four to downtown Willow Creek. There would be less construction effort to get wastewater to this site, resulting in less environmental impacts from construction. For these reasons, the Mill site would have the least environmental impacts of all of the disposal location alternatives, and the other disposal location alternatives were not analyzed further.

4.6.3 Solids Handling Alternatives

The proposed project includes dewatering the solids using a batch process onsite, and periodically hauling the dried solids to either a landfill or composting operation. The following solids handling alternatives were also considered for this project.

- Contracting a local septic pumping service to pump and dispose of the sludge whenever necessary.
- Constructing a facultative sludge lagoon and land applying the stabilized solids as a soil amendment.
- Constructing a thermal solids treatment system.
- Contracting a local septic pumping service would not require construction, and the proposed solids handling method would require some minor construction. However, the fuel that would be used by the septic pumping service to travel to pump the community septic tank would negatively impact air quality and create GHG emissions.
- Constructing a facultative sludge lagoon would require a large enough area to use the solids. Otherwise, the necessary footprint would increase significantly to have enough area to spread the solids. The ponds themselves also cause some concerns. The first concern is that the footprint for the ponds will be larger than the other alternatives. Secondly, there are community concerns with the visual aesthetics of a large exposed water surface like a sludge lagoon. Finally, treatment options that provide anaerobic conditions commonly produce more odors than aerobic conditions. This could cause issues with surrounding neighbors. There would be higher capital and operational costs associated with this alternative, and a large footprint would be required with potential aesthetic concerns. Because of the offensive odors that can be generated from facultative sludge lagoons, as well as the larger required footprint, Alternative #3 was eliminated

from consideration. Also noteworthy is the fact that the City of Eureka uses this process, and heavy metal accumulation has occurred at their biosolids reclamation site.

A thermal treatment system was also considered; however, a system of this type would be cost prohibitive for a service area of this size.

5. Other CEQA Sections

5.1 Significant Unavoidable Effects

Detailed mitigation measures proposed by the WCCSD have been identified throughout Chapter 3 of this report and are intended to mitigate project effects to the extent feasible. All of these mitigation measures are identified in Table 1-1. After implementation of the proposed mitigation measures, there are no significant unavoidable impacts.

5.2 Growth-Inducing Impacts of the Project

CEQA Guidelines Section 15126.2(d) requires an EIR to discuss the growth-inducing impact(s) of a proposed project. Specifically, CEQA Guidelines state that the EIR shall “discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.”

Projects can have direct and/or indirect growth inducement potential. An example of direct growth inducement would be the construction of new housing. Examples of indirect growth inducement could include establishing substantial new permanent employment opportunities and removing obstacles to population growth (e.g. the expansion or improvement of utilities which allows for more growth within a service area).

Growth inducement itself is not an environmental effect but may lead to an environmental effect(s). Environmental effects may include increased demand on other public services and infrastructure, increased noise and traffic, degradation or loss of plant or animal habitats, degradation of air and water quality, or conversion of open space land to urban development.

The proposed community-wide wastewater collection system would provide the downtown core area of Willow Creek with a reliable wastewater collection system that would not negatively affect public health and the environment as the current individual septic tanks and other onsite wastewater systems do. A feasibility study conducted by Oscar Larson & Associates (2008) reported that many of the onsite systems have degraded over time, are substandard or undersized, and frequently overloaded. Numerous permits for repair of failed septic systems have been issued by the Humboldt County Division of Public Health (Oscar Larson & Associates 2008). In 2005 and again in 2010, the county passed a resolution naming Willow Creek a blighted community; the lack of wastewater infrastructure was identified as a contributing factor to this blight determination.

A letter of support for a community-wide wastewater system in Willow Creek was also written by the Humboldt County Community Development Department (CDD). The CDD noted that there have been several instances of raw sewage overflowing into the downtown storm drains, and that the current

conditions in Willow Creek with respect to wastewater can put the public at risk. Advanced onsite systems have been required for commercial users, and to be sustainable, the downtown area would require a less piecemeal approach to wastewater treatment.

The wastewater system is not considered growth inducing, rather it is needed as a long-term measure to protect public health and allow economic growth in the community. The facility would be designed to accommodate growth established by the Humboldt County General Plan and Willow Creek Community Action Plan (CAP). According to the PER prepared for the project (GHD 2014), it is anticipated that approximately seven more residential units and five more commercial businesses would be developed in the Sewered Area within the next 10 years. The flows associated with this development, as well as additional capacity for future expansion of the service area, were included in the basis of design for the collection, treatment, and disposal system.

The proposed project would generate new employment within the county during construction, which could contribute to the demand for housing. The proposed project is expected to generate employment for approximately eight people during construction. It is anticipated that existing staff would be able to handle operations (one new employee could potentially be needed). Due to the project's location along a primary transportation corridor within Humboldt County, workers during construction would be drawn from throughout the region. The expected dispersal of employees across the region would minimize the effects of increased housing demands within Willow Creek and Humboldt County. Additionally, the small number of workers during construction and the ability of existing staff to handle operations would not place a substantial demand for housing. For these reasons, the proposed project would not be expected to generate a substantial demand for new housing, nor be growth-inducing.

5.3 References

Oscar Larson & Associates, 2008, Willow Creek Community Wastewater Feasibility Analysis, prepared for Willow Creek Community Services District, August 27.

6. List of Preparers

Willow Creek Community Services District

Lonnie Danel, General Manager

GHD

Steve Allen, Project Director

Pat Kaspari, Project Manager

Susan O’Gorman, Project Engineer

James Alcorn, Senior Planner

Dave Davis, Senior Planner

Kristine Gaspar, Senior Environmental Planner

Misha Schwarz, Senior Environmental Scientist

Brian Bacciarini, Senior Environmental Scientist

Nathan Stevens, Project Engineer

Lia Webb, Biologist

Cara Scott, Botanist

Anna Gower, Environmental Scientist

Jed Douglas, Senior Environmental Scientist

Gary Davidson, GIS Analyst

Roscoe & Associates

James Roscoe, Principal

Crawford & Associates

Rick Gower, Principal

This page intentionally left blank

Appendices

