

## **City of Arcata Wastewater and Water Infrastructure Planning**

### **Frequently Asked Questions**

**August 2022**

#### **What is the purpose, scope, and timeline of the Arcata Wastewater Treatment Facility (AWTF) Phase 1 upgrade?**

The City's primary purposes in pursuing the AWTF Phase I upgrade are to provide reliable service to the community now and in the future, replace aging critical infrastructure from the late 1980s, reconfigure to a single pass flow through the treatment facility and enhancement wetlands, and upgrade the disinfection system to ultraviolet light (UV) in order to continue to provide wastewater treatment while improving existing levels of regulatory compliance for the protection of water quality and public health. The project is of critical importance to meet current water quality standards, eliminate disinfection byproducts associated with chlorine disinfection, protect coastal resources and produce a higher quality effluent for beneficial use within coastal habitats.

The Phase I upgrade is currently out to bid to procure a contractor to complete the project. The UV system is currently being fabricated. The City has received all permits except its Coastal Development Permit (CDP) which is anticipated to be recommended for approval at the August 2022 meeting of the California Coastal Commission. The City anticipates construction beginning in early fall and continuing for approximately 30 months.

#### **How was the decision made to pursue the upgrade of the Arcata Wastewater Treatment Facility (AWTF) in its current location?**

A Facilities Plan was completed in 2017 to analyze potential rehabilitation options for the wastewater treatment facility. The City Council then made the decision to upgrade the existing AWTF and retain the natural systems component of wastewater treatment. The scope of Phase I of the selected Facilities Plan is described above. Phase II has been envisioned to include construction of oxidation ditches and secondary clarifier as a parallel treatment system within the core of the treatment facility.

#### **How is the City addressing sea level rise impacts at the AWTF?**

The AWTF Phase I project will remain viable throughout its design life (through 2055) even without planned levee augmentation. Mechanical systems and electrical components of essential facilities are protected from flooding with raised elevation foundations. The natural system is resilient to periodic and infrequent overtopping. The City anticipates inundation will occur frequently enough in the natural system (oxidation ponds and treatment wetlands) when the expected sea level rise exceeds 11 feet. Currently, the City is planning for incremental levee

augmentation to protect the core of the treatment facility. The City's 2022/23 budget includes funding for design and permitting of levee augmentation. The City was also recently awarded FEMA funding for the Wastewater Treatment Facility Levee Expansion Project to see this project through to construction. Staff anticipate levee augmentation to be completed in the next five years.



*Arcata Wastewater Treatment Facility*

### **What is the current capacity at the AWTF and how is the City addressing future capacity?**

The current AWTF upgrade was designed at the time to accommodate planned growth during the design life of the project (2020 through 2050). The Facilities Plan and CEQA analysis for Phase I and the envisioned Phase II incorporated a 20% growth factor (equating to a population of 22,410). The 20% increase in design flows and influent loads was used as a factor of safety because flows fluctuate over time and with precipitation.

The Phase I design and the City's wastewater discharge permit allows for up to 2.3 million gallons per day (mgd) dry weather flow and 5.0 mgd average wet weather flow through the facility. In 2021 dry weather flows averaged 1.0 mgd and wet weather flows averaged 1.69 mgd. The AWTF has additional capacity available. Currently the AWTF is at 43.5% of dry weather flow and 34% of wet weather flows.

Wet weather flows can fluctuate year to year as a factor of precipitation, timing of precipitation, and the amount of inflow and infiltration into the wastewater collection system. Peak wet weather flow per day is designed at 5.9 mgd which is the capacity limitation for several treatment facility processes. Peak instantaneous flow capacity at the AWTF is much higher at 16.5 mgd. In 2021 instantaneous flow peaked at 4.71 mgd. City utilizes the oxidation ponds for storage to attenuate peak flows and improve aeration.

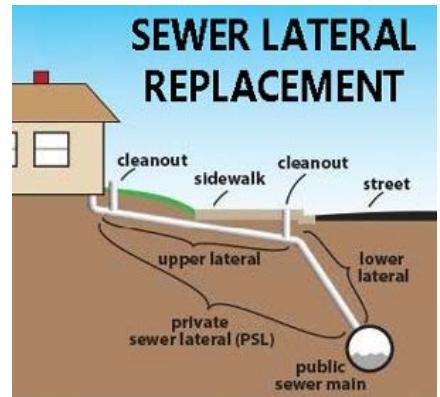
Design of Phase II of the AWTF upgrade project is currently on hold at the request of the State Water Board. The State Water Board has requested that the City explore additional opportunities for long-range planning for the AWTF and has provided technical assistance for a feasibility study which will examine a) potential for alternative/additional siting for wastewater treatment facilities, b) continued use of the existing treatment facility location beyond the Phase I design life, and c) capacity for future growth. This feasibility study is anticipated to commence this summer and be completed by the end of 2023.

## What other actions are being taken to address capacity at the AWTF?

During dry weather, the treatment facility has ample capacity for influent flows and nutrient loading. However, during the wet season, inflow and infiltration into the City's sewer collection system increase wet weather influent flow.

The City completed a large Sewer Inflow & Infiltration Reduction (I&I) project in 2019 to reduce groundwater infiltration and surface water inflow into the sewer collection and treatment facility during wet weather flows. Preliminary results from the recently completed I&I project indicate reduction of wet weather flows into the treatment facility by 0.5 mgd when precipitation occurs.

Additional improvements to the wastewater collection system have also been accomplished by the City's Sewer Lateral Replacement Program. Since ordinance adoption in 2017, this program has required that private sewer laterals connected to houses older than 25 years be inspected, replaced or repaired if needed, prior to change of ownership. The City has issued 721 sewer lateral certificates since the passage of the ordinance which includes many lateral replacements resulting in improvement in the sewer collection system.



## What other wastewater infrastructure projects are currently being planned or implemented by the City?

The City utilizes the Capital Improvement Program (CIP) to plan and budget for near- and long-term projects to address the City's infrastructure needs. Through the CIP the City systematically plans, schedules and finances capital projects. On March 22, 2022 the Planning Commission reviewed the 2022/23 CIP for consistency with the Arcata General Plan, to inform the 2022/23 budget process.

The City annually implements a sewer line and manhole replacement project to target specific repair and maintenance needs of the sewer system.

The City is pursuing upgrade and replacement of the pumps and motors at the 1st Street Lift Station, which are integral to pumping of the sewer system during wet weather higher flows.

The Engineering and Environmental Services Departments anticipate in fiscal year 2022-23 commencing preliminary engineering and environmental work for a Sewer Inflow & Infiltration (I&I) project to further reduce wet weather flows into the wastewater treatment facility. I&I projects include lining sewer pipes and other actions to ensure that groundwater infiltration and surface water inflow do not cause the sewer collection system or treatment facility to exceed capacity.

## **With drought conditions throughout the state does the City have adequate drinking water supplies?**

The primary sources of drinking water for the City is water purchased from Humboldt Bay Municipal Water District (HBMWD). Ruth Lake Reservoir, HBMWD's water storage location on the Mad River, was listed at 94% full as of August 9, 2022.

The City has a right to 1,186 million gallons of water per year and in 2020 used 52% of this volume. Previous demand projections for the City for the next 25 years indicated that in 2045 the City will use approximately 63% of the water right volume. HBMWD's Water Storage Contingency Plan indicates that even during a long-term drought (5 consecutive years), inflow volumes into Ruth Lake Reservoir during the winter months will be adequate to meet the water needs of the City and other municipal customers, even without enacting water conservation measures.

The City also has an auxiliary domestic water source, Heindon Well, a groundwater well off Heindon Road. Studies at Heindon Well indicate that the City can safely withdraw 0.5 million gallons per day (mgd) from the groundwater basin. The well was turned off in 2015 in response to the State's emergency water conservation resolution. The Environmental Services Department is currently in the final steps of refurbishing and testing the well to have it ready again for production in 2022.

## **What water infrastructure projects are currently being planned or implemented by the City?**

### Water Storage

The City maintains 16 water storage tanks with a total water storage capacity of 4.8 million gallons.

The City currently has a project out to bid to construct a new 1 million gallon steel water tank, Tank 1C, which will increase the City's water storage capacity by over 20%. This additional storage will enable the City to be better prepared for emergency events. The Tank 1C project is anticipated to be complete by summer 2023.



*Margaret Lane Water Tank*

### Waterline Replacement

The City is currently in the final stages of submitting a large Citywide water line replacement proposal to the Drinking Water State Revolving Fund which would replace over six miles of waterline in the next several years. The project seeks to replace aging infrastructure and reduce water loss within the system.

The City will also be implementing the CalOES-funded Waterline Improvements Phase 2 project within the Jacoby Creek Water District (JCWS). The City provides water to the JCWD and maintains its water distribution system.