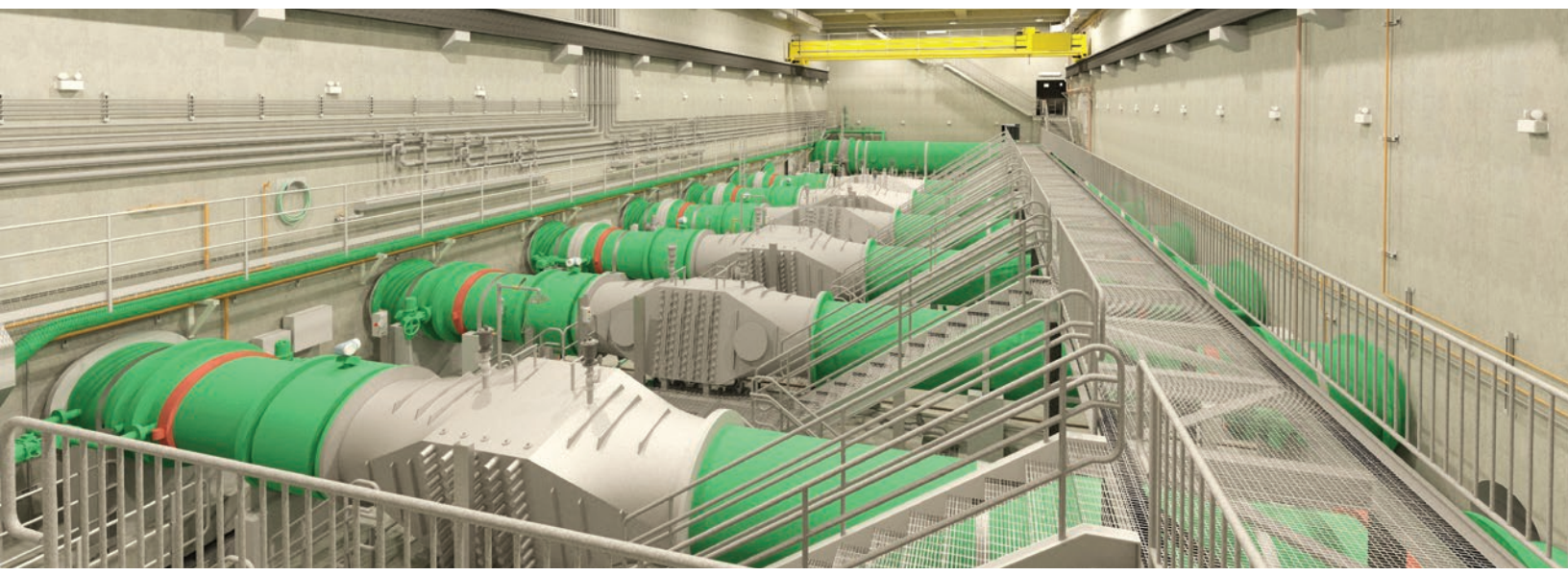


ORINDA WATER TREATMENT PLANT

Disinfection
Improvements
Project



Protecting your water into the future



EBMUD at a Glance

1¢

*average cost per gallon
of water delivered*



90%

*of the water customers use
comes from the Mokelumne
Watershed in the Sierra Nevada*



50 million

*gallons of wastewater
treated daily*



4,200 miles

*of pipes maintained
throughout the system*



57,000 acres

*of watershed land
managed for the public*



150 million

*gallons of water
delivered daily*



History

In 1923, residents voted to form the East Bay Municipal Utility District (EBMUD), paving the way for the infrastructure that we rely on today to bring water from the Sierra Nevada to the East Bay. In 1951, wastewater treatment operations started. As we approach our 100th year, EBMUD remains a lifeline for Bay Area residents and businesses, delivering high-quality water to more than 1.4 million customers. We also provide wastewater services to 740,000 customers, which helps protect public health and San Francisco Bay.

Mission

To manage the natural resources with which EBMUD is entrusted; to provide reliable, high-quality water and wastewater services at fair and reasonable rates for the people of the East Bay; and to preserve and protect the environment for future generations.

Orinda Water Treatment Plant

The heart of EBMUD's water system



Orinda WTP circa 1937



Construction of the Claremont Tunnel circa early 1930's



Construction of the Mokelumne Aqueducts

- Built in 1935, the Orinda Water Treatment Plant (WTP) is EBMUD's **largest of six water treatment plants** and is the only water treatment plant that operates 24/7, year-round.
- Orinda WTP **serves more than 800,000 customers** (see map below).
- 90% of the water that is filtered and treated at the Orinda WTP comes from snowmelt that travels through **90 miles of aqueducts** from Pardee Reservoir at the base of the Sierra Nevada. The other 10% comes from local storage at the Briones Reservoir.
- Orinda WTP is one of EBMUD's three in-line water treatment plants. This means that unlike newer treatment plants, currently it **does not have a post-filter disinfection process**. This project will introduce this process.

Area served by Orinda WTP

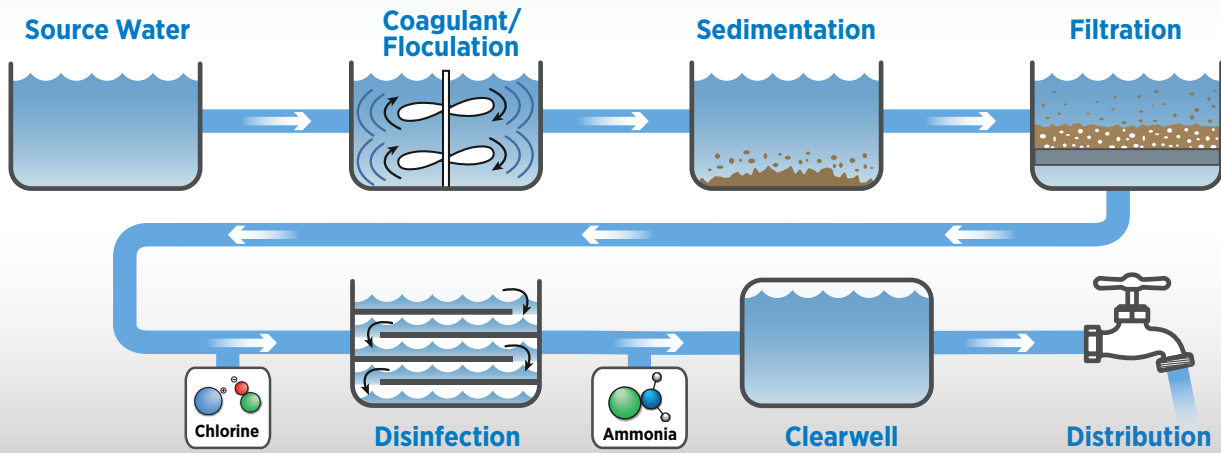
Crockett	+	+	
Rodeo	+	+	+
Hercules	+	+	+
Pinole	+	+	+
El Sobrante	+	+	+
San Pablo	+	+	+
Richmond	+	+	
El Cerrito	+	+	+
Kensington	+	+	
Orinda			
Moraga			
Piedmont	o	o	
Oakland	o	o	
Alameda	o	o	
San Leandro	o	o	
San Lorenzo	o	o	
Castro Valley	o	o	
Hayward	o	o	
Albany			
Berkeley			
Emeryville			

also served as needed by Sobrante WTP

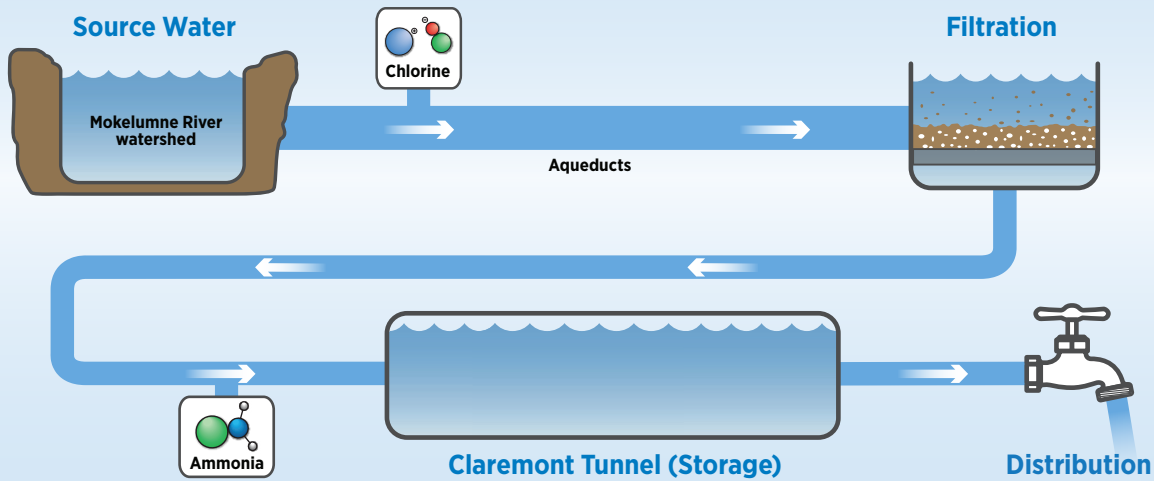
also served as needed by Upper San Leandro WTP



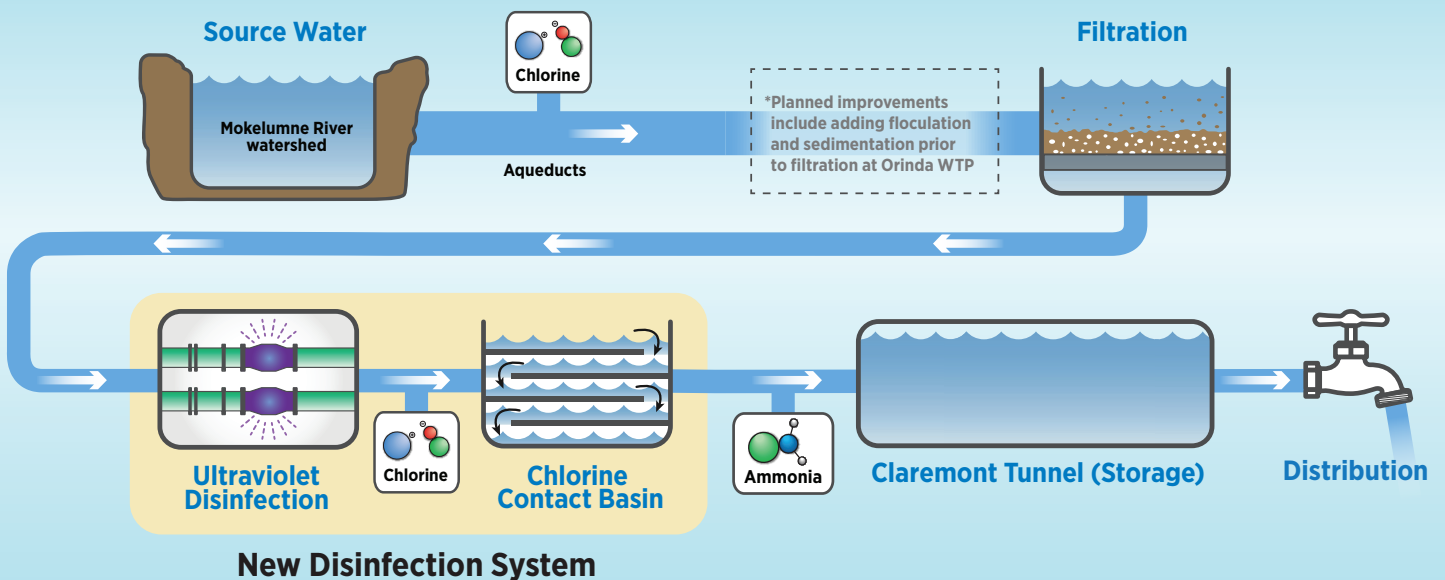
Example of Modern Water Treatment Process



Current Orinda Water Treatment Plant Process



Orinda WTP Process After Project Completion



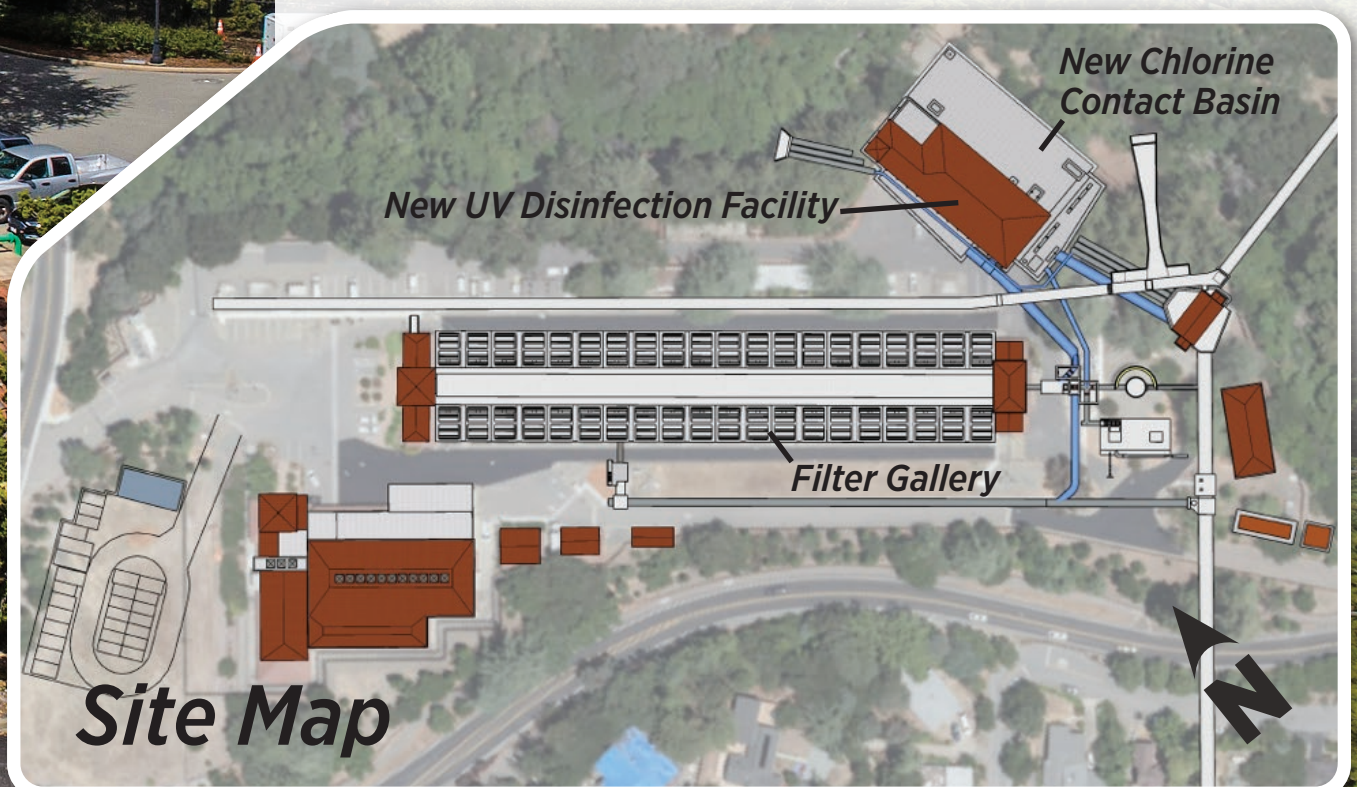
ORINDA WATER TREATMENT PLANT

Disinfection Improvements Project



To ensure that we are able to provide clean, safe and reliable drinking water well into the future, EBMUD is planning improvements at the Orinda Water Treatment Plant to:

- *Improve disinfection reliability*
- *Continue to meet water quality regulations*
- *Better protect public health by adding a multi-barrier treatment process*
- *Reduce the formation of disinfection byproducts*
- *Increase resilience against climate change*



Why is this project necessary?

Disinfection is the most important step of the water treatment process. It ensures that the water that comes out of your faucet is free of harmful pathogens and is safe to drink.

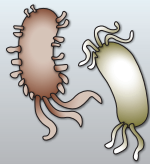
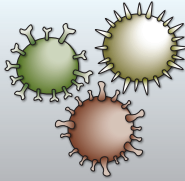
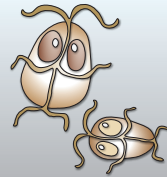
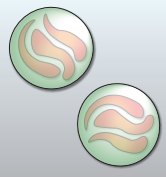





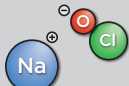




Currently, the Orinda Water Treatment Plant relies on a basic treatment process of filtration and disinfection to meet or exceed state and federal requirements. However, warming temperatures, increasing wildfires, and larger storms have resulted in an increase in naturally-occurring organic matter—such as decomposing vegetation—at our water source.

When this organic matter comes in contact with the chlorine used to treat our drinking water, disinfection byproducts such as trihalomethanes can form (learn more at ebmud.com/THM). In order to maintain a high water quality and reduce disinfection byproducts into the future, the disinfection process at the Orinda Water Treatment Plant must be improved.

This project will add a state-of-the-art **ultraviolet disinfection system** followed by a **chlorine contact basin**. By combining these technologies, we take advantage of the strengths of each and

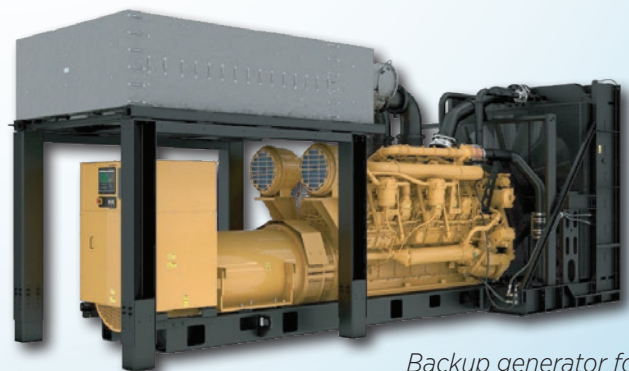
minimize chlorine use. The new system will also add reliability to the treatment process, improving our ability to remove bacteria and pathogens and ensuring robust protection of public health.

In addition to changes to the disinfection process, this project also includes necessary improvements to the backup power supply, which will add resiliency to

	 Bacteria	 Viruses	 Giardia	 Cryptosporidium
 Ultraviolet Light	 Best	 Variable	 Best	 Best
 Chlorine	 Good	 Best	 Good	 Ineffective

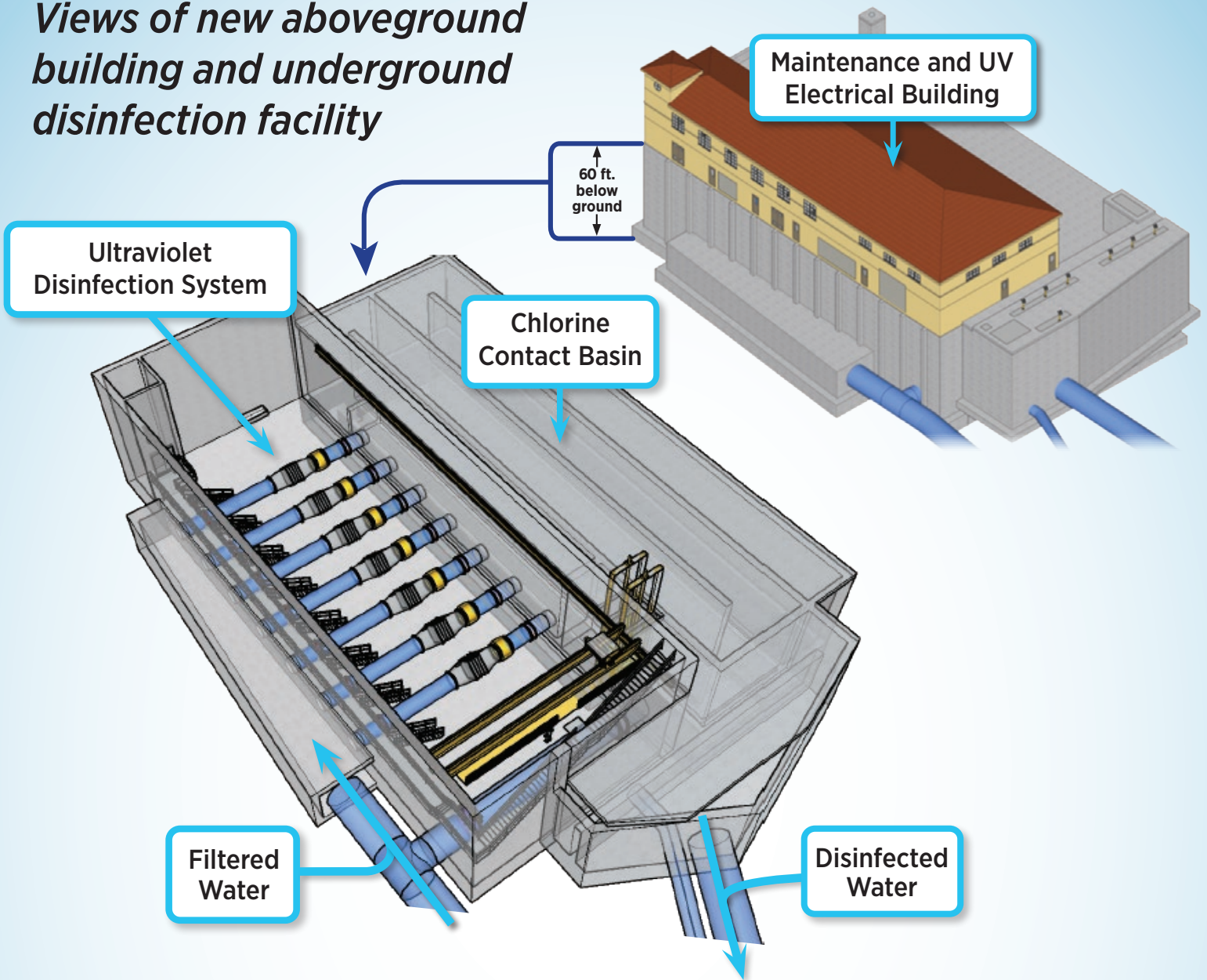
The combined power of chlorine and UV light, in addition to existing filtration technology, provides the best protection from pathogens.

the treatment and distribution systems in the event of power outages or public safety power shutoffs (learn more at ebmud.com/PSPS).



Backup generator for power outages like PSPS

Views of new aboveground building and underground disinfection facility



July 2021

Project design complete

November 2021

Project construction contract award

July 2022

Construction commences

Fall 2022

Landscape installation

Winter 2026

Ultraviolet system online

Spring 2027

Construction complete

ebmud.com/orwtpimprovements