

Water Treatment Plants Electrical  
Improvement Project  
Project No. 93084004

Engineer's Report



October 2021

Water Utility Capital Division

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# WATER TREATMENT PLANTS ELECTRICAL IMPROVEMENT PROJECT

**PROJECT NO. 93084004**

## **ENGINEER'S REPORT**

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Under the Direction of:

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Heath McMahon, P.E  
Deputy Operating Officer

The Engineer's Report has been prepared under the direct supervision of the undersigned, who hereby certifies that she is a Registered Electrical Engineer in the State of California



October 2021

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Electrical Improvement Project  
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**1. PROJECT DESCRIPTION**

The proposed Water Treatment Plants Electrical Improvement Project (Project) is located at the Santa Teresa Water Treatment Plant (STWTP) and Penitencia Water Treatment Plant (PWTP) in San Jose, as shown in Figure 1. They are both essential treatment plants to Valley Water's mission of providing safe, clean water to nearly two million people.

The treatment plants' existing low-voltage switchgears, motor control centers, and cables are reaching the end of their useful service life, with most of the existing electrical systems not designed to mitigate a single point of failure in the electrical distribution system.

The purpose of this Project is to replace and upgrade the electrical systems at STWTP and PWTP to continue to provide safe, reliable, efficient, and advanced monitoring of the infrastructure that supports the treatment plants' continuous operation. It will ensure the treatment plants' reliability during utility (PG&E) power outages and power quality disturbances.

The Project will replace the switchboard and motor control centers, add active harmonic filters to improve power quality, replace two 450kW generators at STWTP, upgrade the PWTP generator system PLC and HMI to improve control of the standby system, and replace feeder cables that connect major electrical equipment.

**2. ZONE BENEFITS**

The proposed Project work will benefit customers of Zone W-2 (North County).

**3. PROJECT RIGHT-OF-WAY**

As work on the proposed Project will occur within the Valley Water owned STWTP and PWTP sites, no additional right-of-way will be required.

**4. MAPS AND FIGURES**

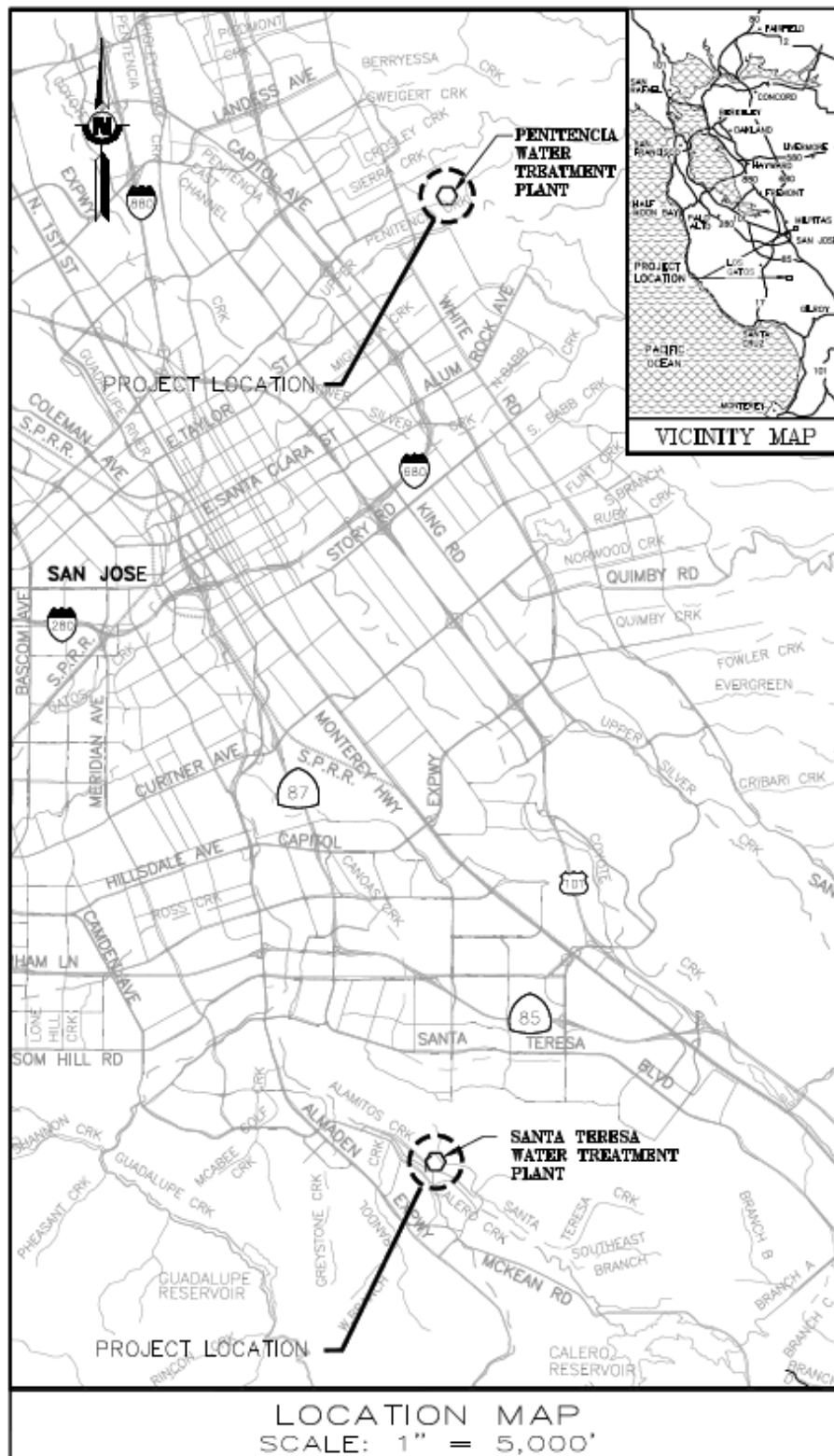
Figure 1 – Project Location Map

**5. PROJECT COSTS**

The estimated cost to plan, design, and construct the Project is \$11.9 million (2021 dollars). The proposed Project would be funded by the Water Utility Enterprise Fund.

**6. PROJECT SCHEDULE**

- Advertise for construction bids:            Fall 2022
- Award construction contract:            Winter 2022
- Complete construction:                    Winter 2023



**Figure 1 - Project Location Map**