

# Project: 825451 - City-wide Water Line Replacement

<b>Category:</b>	Infrastructure	<b>Project Type:</b>	Water	<b>Project Manager:</b>	Marlon Quiambao Jr.
<b>Year Identified:</b>	2006	<b>Project Phase:</b>	Underway	<b>Project Coordinator:</b>	Mansour Nasser
<b>Est. Completion Year:</b>	Ongoing	<b>Department:</b>	C95 - Environmental Services	<b>Fund - Sub-Fund:</b>	460-300 - Water Supply and Distribution - Water Infrastructure Subfund

## Project Description/Scope/Purpose:

There are over 340 miles of underground water transmission and distribution pipelines in the City, varying in size from 4-inch to 30-inch in diameter, with 15 different material compositions. Water mains constructed under ideal conditions are projected to have a life of 75-100 years. This project addresses two primary objectives: 1) replace water mains that do not satisfy current fire flow design criteria, and 2) replace aging and deteriorating infrastructure to minimize failures and water service interruption. This project will fund replacing approximately 14,850 feet (2.8 miles) annually or 0.7% of the system.

In addition to the fire flow deficiencies, a substantial portion of the City's underground water infrastructure has met its useful service life due to age, corrosion, and inadequate design. Approximately 67% or 228 miles of Sunnyvale's water system is comprised of cast iron pipe. This type of pipe has not been installed in Sunnyvale since the 1960s. Field investigations have showed that cast iron pipes are deteriorating due to corrosion. The northern portion of Sunnyvale has "hot soil" and cast iron pipe is not ideal in such locations without proper corrosion protection. A 2010 Water Utility Master Plan recommended the replacement of water pipelines upon deterioration, particularly those subject to corrosion.

Projects will be designed to fit within existing budget; therefore linear feet of pipeline to be replaced will vary from project to project.

## Project Evaluation and Analysis:

To date, approximately seven miles of pipe have been replaced, which was primarily funded with bond proceeds. This project will start by addressing the water mains that do not meet current fire flow design criteria, and will then move on to replacing aging and deteriorating pipelines. The integrity of the City's water supply system is critical in order to protect public health, guarantee enhanced sanitation, and for public safety. Structural failure of a line can result in failure of the pipe to deliver safe and reliable water, subsequently endangering public health and safety.

## Fiscal Impact:

This project is funded by the Water Supply and Distribution Fund revenues.

## Funding Sources:

Water Supply and Distribution Fund

## Plans and Goals:

- EM - Environmental Management - EM-1: Adequate Water Supplies
- EM - Environmental Management - EM-3: Reliable and Safe Water Distribution
- EM - Environmental Management - EM-4: Adequate Water Quality

## Project Financial Summary

	Project Costs	Revenues	Transfers In	Operating Costs
Prior Actual	16,931,627	8,558	-	-
2019 - 20	5,636,628	( 8,558)	-	-
2020 - 21	874,120	-	-	-
2021 - 22	5,852,231	-	-	-
2022 - 23	927,354	-	-	-
2023 - 24	6,208,631	-	-	-
2024 - 25	983,830	-	-	-
2025 - 26	6,586,737	-	-	-
2026 - 27	1,043,744	-	-	-
2027 - 28	6,987,869	-	-	-
2028 - 29	1,107,309	-	-	-
2029 - 30	7,413,430	-	-	-
2030 - 31	1,174,744	-	-	-
2031 - 32	7,864,909	-	-	-
2032 - 33	1,246,285	-	-	-
2033 - 34	8,343,882	-	-	-
2034 - 35	1,322,185	-	-	-
2035 - 36	8,852,024	-	-	-
2036 - 37	1,402,705	-	-	-
2037 - 38	9,391,112	-	-	-
2038 - 39	1,488,130	-	-	-
2039 - 40	9,963,031	-	-	-
<b>20 Year Total</b>	<b>89,034,260</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Grand Total</b>	<b>111,602,515</b>	<b>-</b>	<b>-</b>	<b>-</b>