

820180 - Traffic Signal Controller Replacement

Originating Year:	1999	Project Type:	Traffic and Transportation	Department:	250 - Public Works
Planned Completion Year:	Ongoing	Category:	Infrastructure	Project Manager:	Carmen Talavera

Project Description/Scope/Purpose

This project provides for the replacement of traffic signal controllers, AATMS software, controller cabinets, communication equipment, and other components at approximately 15–20-year intervals due to new Federal and State requirements such as environmentally friendly components, NFPA Personal Safety requirements and obsolescence or changes in functionality. This project improves traffic flow at intersections and increases the reliability of the City's Traffic Management Center (TMC) systems, Intelligent Transportation Systems (ITS) components and other traffic signal equipment and helps enhance staff safety at the intersections.

The City operates and maintains a total of 135 traffic signals. The replacement costs, including contingency of the above equipment, vary depending on the location of the traffic signal. The replacement schedule is based on years of service, date of last upgrade, or as needed due to wear and tear. These ITS components, computer-based controllers, controller software, licensing fees for ATMS software that allows to communicate to all signalized intersections and other major control components deteriorate and are outdated with time and replacement parts become difficult to find as the equipment and software is phased out by the manufacturers or industry standards.

The Traffic Signal Controller Locations for replacement are as follows:

FY 2022/23 - Sunnyvale-Saratoga/Cheyenne-Connemara, Caribbean Dr/Twin Creeks, Homestead/Bernardo-Route 85 and Mathilda/San Aleso

FY 2022/23 - Mary/Ticonderoga, Mary/Knickerbocker, Caribbean/Moffett Park and Mary/Remington.

FY 2023/24 - Enterprise Way/Moffett Park-Manila Dr and Fair Oaks Ave/Old San Francisco Rd

FY 2024/25 - Fair Oaks/Arques and Fair Oaks/Maude are expected to be replaced.

Project Evaluation and Analysis

Traffic signal equipment slated for replacement do not meet City and/or industry standards, are obsolete, and parts are no longer available. In addition, this equipment will not integrate and communicate with current TMC systems. If not replaced, possible future failures will require immediate replacement that will cause a long-term shutdown of the Traffic Management Systems while equipment is ordered and delivered. Therefore, this equipment is essential to enhance the safety of pedestrians, bicyclists and vehicular traffic.

Fiscal Impact

This project is funded by the Gas Tax Fund. Project costs are based on bids and prices from manufacturers and contractors. Costs are budgeted to replace two (2) controller cabinets and other ITS components per year. However, depending upon current market pricing for both material and labor costs adjusted for inflation, fewer locations and components could be replaced as scheduled.

Funding Sources

Gas Tax Fund

Plans and Goals

LT - Land Use and Transportation - LT-3: An Effective Multimodal Transportation System

Project Financial Summary

	Project Costs	Revenues	Operating Costs
Prior Actual	1,926,566	1,138,390	-
2022-23	1,121,267	702,350	-
2023-24	250,044	-	-
2024-25	236,767	-	-
2025-26	231,128	-	-
2026-27	240,372	-	-
2027-28	249,988	-	-
2028-29	259,987	-	-
2029-30	270,387	-	-
2030-31	281,202	-	-
2031-32	292,450	-	-
2032-33	304,149	-	-
2033-34	316,314	-	-
2034-35	328,966	-	-
2035-36	342,126	-	-
2036-37	355,810	-	-
2037-38	370,043	-	-
2038-39	384,843	-	-
2039-40	400,237	-	-
2040-41	416,247	-	-
2041-42	432,897	-	-
2042-43	450,213	-	-
20 Year Total	6,414,170	-	-
Grand Total	9,462,003	1,840,740	-