

FISCAL YEAR 2025

ADOPTED CAPITAL BUDGET

- ▷ **CLIMATE CHANGE** AND THE NATURAL ENVIRONMENT: PROTECTION & ADAPTATION
- ▷ **COMMUNITY HEALTH, SAFETY, WELLNESS & BELONGING**
- ▷ **HOUSING** FOR SOCIAL AND ECONOMIC BALANCE
- ▷ **ECONOMIC** DEVELOPMENT & TRANSITION



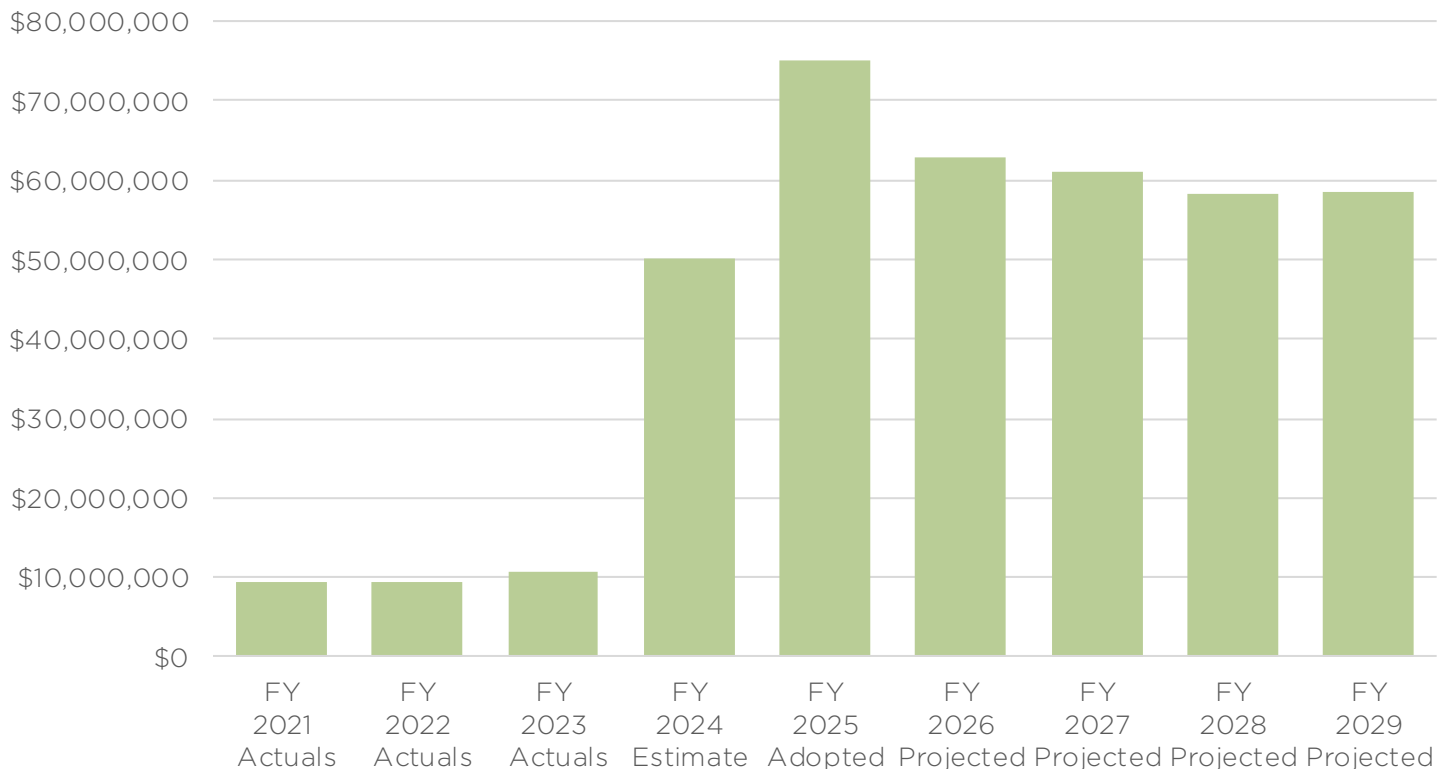
CITY OF
**PALO
ALTO**

ELECTRIC FUND

Overview

The City of Palo Alto offers a full array of utility services to its citizens and businesses. The municipal electric power system began operation in 1900 and continues to provide safe, reliable, and cost effective electric service to residents and customers of Palo Alto. For the 2025-2029 Capital Improvement Program (CIP), approximately \$320.1 million (315.8 million in projects) is projected, with \$75.8 million (\$75.1 million in projects) budgeted in Fiscal Year 2025. Overall, a total of 19 projects are planned over the 5-year CIP.

Electric Fund Expenditures



Major projects funded in the 2025-2029 CIP include the Grid Modernization Project (\$243.2 million), Substation Improvement projects (\$16.1 million), Electric Customer Connections (\$13.6 million), Electric System Improvements (\$15.9 million), Foothills Rebuild Fire Mitigation (\$8.2 million), Underground System Rebuild projects (\$1.8 million), Wood Pole Replacement (\$3.8 million), and Smart Grid Technology Installation (2.7 million). The budget for the Electric Fund CIP is categorized into three types of projects: Customer Connections, System Improvements, and Undergrounding Projects.

Infrastructure Inventory

CLASSIFICATION	QUANTITY
Miles of 60kV sub transmission lines	19 miles
Substations (w/300 MVA total capacity)	9
Traffic Signals (intersections) maintained	101

Infrastructure Inventory

CLASSIFICATION	QUANTITY
Streetlights maintained	6,922
Overhead Primary Distribution	116 miles
Underground Primary Distribution	199 miles
Overhead Secondary Distribution	93 miles
Underground Secondary Distribution	84 miles

Customer Connections

As customers' electric power needs continually change due to equipment additions, new construction, building expansions, building remodels, teardowns and rebuilds, and new building occupancy types, the electric system must evolve to meet these needs.

The Electric Customer Connections Project is the only project within this category (Fiscal Year 2025: \$2.7 million; 5-Year CIP: \$13.6 million). Projects range from new buildings associated with larger commercial buildings to residential electric panel upgrades. These projects allow for the completion of work required to meet the needs of customers who have applied for new or upgraded electric service, need temporary power for construction, or require other services. The Electric Fund pays for a portion of these projects, while remaining costs are supported by reimbursements from customers for project work performed by the City.

Electric Engineering received 5 applications for small cell attachments to Electric utility streetlight and wood poles in FY 2023. These applications are still under review. The Electric Utility has about 5,903 wood poles and 6,922 streetlight poles citywide, which are of interest to mobile phone companies. This trend of small cell applications is anticipated to rapidly increase in the next few years, which would increase both the workload and associated revenue in the Electric Customer Connections project.

Recent Accomplishments

- Completed approximately 441 customer service projects at a cost of approximately \$1.2 million in Fiscal Year 2023.

2025-2029 Capital Improvement Program

Recurring Projects

There is one recurring project in the Electric Customer Connections category in the 2025-2029 CIP (Fiscal Year 2025 \$2.7 million; 5-Year CIP: \$13.6 million), which is comprised of individual customer projects and budgeted based on historical customer applications for service.

System Improvements

Key elements for ensuring reliable electric service to City of Palo Alto residents and customers include replacing electric system components before they reach their end of life; ensuring there is adequate capacity for the projected electric load; and installing protective equipment to minimize the impact of system problems. Projects in the System Improvements category allow for a variety of improvements, including the replacement/upgrade of old cables and equipment and bringing designs up to current standards, installation of protective equipment and switches, conversion of the electric system from 4,160 Volts (4kV) to 12,470 Volts (12kV), and installation of capacitors to improve efficiency.

ELECTRIC FUND

The 2025-2029 CIP includes total funding of \$302.2 million in this category, with \$72.4 million allocated in Fiscal Year 2025. Significant projects in this category include Grid Modernization (\$43.2 million), Foothills Rebuild (\$8.2 million), Substation Physical Security (\$3.4 million), Smart Grid Technology Installation (\$2.7 million), Electric System Improvements (\$3.0 million), Wood Pole Replacements (\$0.8 million), Substation Breaker Replacements (\$3.7 million), and various projects to substation components.

The 2025-2029 CIP includes the Grid Modernization project that will perform the necessary electric system upgrades needed to support the City's transition to a citywide residential electrification scenario, which has major impacts on the City's electric transmission and distribution grid. This project will include studies to evaluate the impacts of projected electrification loads on the City's distribution and substation transformers, primary/secondary distribution circuits, and lead to proposals for upgrades necessary to mitigate overloads. The estimated cost to construct the necessary electric system upgrades for a 100% electrification scenario is \$300 - \$350 million, for which the City is exploring alternative funding options such as debt financing.

Recent Accomplishments

- Installed potential transformers and station power transformers for bus 1 and bus 2 at Colorado Power Station for power reliability.
- Replaced and upgraded approximately 21 deteriorated utility wood poles.
- Completed Part 1 and 2 of the Electrification study, which evaluated the impacts of electrification loads on Palo Alto's distribution and substation transformers, primary/secondary distribution circuits, and also includes proposes upgrades needed to mitigate overloads.
- Replaced remote terminal units (RTU) for the SCADA system at Hanover Substation.
- Installed fiber optic cable between Maybell and Park Boulevard Substations to improve relay and SCADA communications.
- Installed Nexus Power Quality meters at Hansen Way and Colorado Substations to provide essential power quality information such as voltage dips and faults at the feeder level.
- Installed seven capacitor banks at several substations for power factor monitoring to keep the electrical system in compliance.

2025-2029 Capital Improvement Program

Recurring Projects

A total of \$27.8 million is programmed for System Improvements recurring projects in the 2025-2029 CIP, with \$5.3 million allocated in Fiscal Year 2025. Recurring projects in this category include the following:

- Communication System Improvements (Fiscal Year 2025: \$0.1 million; 5-Year CIP: \$0.5 million)
- Electric System Improvements (Fiscal Year 2025: \$2.9 million; 5-Year CIP: \$15.9 million)
- Electric Utility Geographic Information System (Fiscal Year 2025 \$0.2 million; 5-Year CIP: \$1.0 million)
- SCADA System Upgrades (Fiscal Year 2025 \$0.2 million; 5-Year CIP: \$1.3 million)
- Substation Facility Improvements (Fiscal Year 2025: \$0.4 million; 5-Year CIP: \$2.1 million)
- Substation Protection Improvements (Fiscal Year 2025: \$0.3 million; 5-Year CIP: \$1.6 million)
- Underground System Rebuild (Fiscal Year 2025: \$0.3 million; 5-Year CIP: \$1.8 million)
- Wood Pole Replacements (Fiscal Year 2025: \$0.8 million; 5-Year CIP: \$3.8 million)

Non-Recurring Projects

A total of \$274.4 million is programmed in the 2025-2029 CIP for non-recurring System Improvement projects, with \$67.1 million allocated in Fiscal Year 2025. Significant projects include :

ELECTRIC FUND

- Grid Modernization for Electrification: (Fiscal Year 2025: \$43.2 million; 5-year CIP: \$243.2 million)
- Substation Physical Security: (Fiscal Year 2025: \$3.4 million; 5-year CIP: \$4.2 million)
- Substation Breaker Replacement: (Fiscal Year 2025: \$3.7 million; 5-year CIP: \$5.7 million)
- Colorado Power Station Equipment Upgrades: (Fiscal Year 2025: \$3.7 million; 5-year CIP: \$6.8 million)
- Smart Grid Technology: (Fiscal Year 2025: \$2.7 million)
- Foothills Rebuild Fire Mitigation (Fiscal Year 2025: \$8.2 million)

Undergrounding Projects

The City of Palo Alto began a program to underground overhead electric, telephone, and cable TV facilities in 1965 with a project along Oregon Expressway. Since that time, 47 Underground Districts have been formed. The undergrounding of electrical lines is a joint process between the City and AT&T, due to joint ownership of the poles, and Comcast, which leases pole space from AT&T. All three entities share in the cost of the installation of underground conduit and boxes necessary to enclose and protect wires and equipment. The City typically takes the lead in the design, bidding, and construction processes with AT&T and Comcast reimbursing the City for construction and administrative costs. To align with current staffing levels and project priorities, underground districts 42 and 43 are incorporated into the Grid Modernization Project (EL-24000) with design to begin in FY 2026. Construction timeline will be updated as more information is available.

Electric Fund

Project Number	Project Title	FY 2024 Budget	FY 2024 Estimate	FY 2025 Adopted	FY 2026	FY 2027	FY 2028	FY 2029	5-Year Total
SOURCE OF FUNDS									
Other									
EL-89028	Electric Customer Connections	1,700,000	1,700,000	1,700,000	1,700,000	1,700,000	1,700,000	1,700,000	8,500,000
EL-24000	Grid Modernization for Electrification	25,000,000	0	40,000,000	25,000,000	25,000,000	25,000,000	25,000,000	140,000,000
EL-19004	Wood Pole Replacement	150,000	150,000	150,000	150,000	150,000	150,000	150,000	750,000
Other Total		\$26,850,000	\$1,850,000	\$41,850,000	\$26,850,000	\$26,850,000	\$26,850,000	\$26,850,000	\$149,250,000
Total Sources		\$26,850,000	\$1,850,000	\$41,850,000	\$26,850,000	\$26,850,000	\$26,850,000	\$26,850,000	\$149,250,000

USE OF FUNDS									
Customer Connections									
EL-89028	Electric Customer Connections	5,865,825	5,244,857	2,700,000	2,700,000	2,700,000	2,700,000	2,781,000	13,581,000
Customer Connections Total		\$5,865,825	\$5,244,857	\$2,700,000	\$2,700,000	\$2,700,000	\$2,700,000	\$2,781,000	\$13,581,000
System Improvements									
EL-06001	115 kV Electric Intertie	341,335	191,335	250,000	283,300	250,000	0	0	783,300
EL-16002	Capacitor Bank Installation	62,855	12,855	0	0	0	0	0	0
EL-22002	Colorado Distribution Feeder Outlet Replacement	389,424	389,424	0	0	0	0	0	0
EL-19001	Colorado Power Station Equipment Upgrades	1,850,000	116,989	3,733,011	2,000,000	1,100,000	0	0	6,833,011

ELECTRIC FUND

Electric Fund *(Continued)*

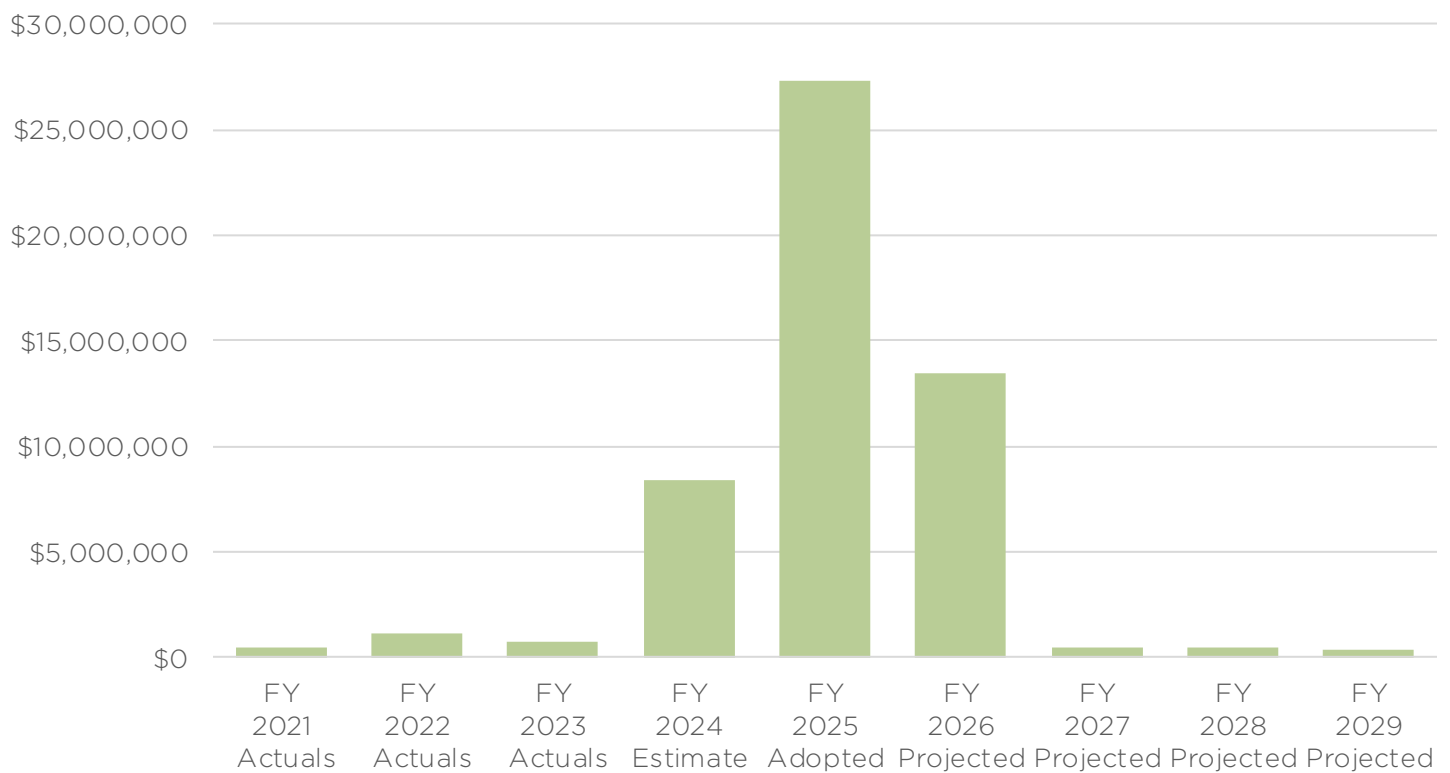
Project Number	Project Title	FY 2024 Budget	FY 2024 Estimate	FY 2025 Adopted	FY 2026	FY 2027	FY 2028	FY 2029	5-Year Total
EL-19002	Colorado Substation Site Improvements	1,165,000	26,706	1,138,294	0	0	0	0	1,138,294
EL-89031	Communications System Improvements	150,000	38,837	100,000	100,000	103,000	107,000	110,210	520,210
EL-98003	Electric System Improvements	4,248,732	4,248,732	2,980,070	4,171,450	3,161,670	2,739,650	2,816,950	15,869,790
EL-02011	Electric Utility Geographic Information System	440,889	440,888	165,000	165,000	170,000	238,000	245,140	983,140
EL-21001	Foothills Rebuild (Fire Mitigation)	4,505,495	2,301,643	8,203,852	0	0	0	0	8,203,852
EL-14000	Grid Mod - Coleridge/Cowper/Tennyson 4/12kV Conversion	1,000,000	0	0	0	0	0	0	0
EL-17001	Grid Mod - East Meadow Circles 4/12kV Conversion	1,474,439	150,000	0	0	0	0	0	0
EL-16000	Grid Mod - Rebuild Underground District 26	623,000	120,000	0	0	0	0	0	0
EL-24000	Grid Modernization for Electrification	25,000,000	6,817,360	43,182,640	50,000,000	50,000,000	50,000,000	50,000,000	243,182,640
EL-24001	Hanover Substation Upgrade Project	15,000,000	15,000,000	0	0	0	0	0	0
EL-17005	Inter-substation Line Protection Relay	463,280	775	637,505	175,000	200,000	208,000	214,240	1,434,745
EL-10006	Rebuild Underground District 24	522,000	100,934	139,066	0	0	0	0	139,066
EL-02010	SCADA System Upgrades	282,229	95,098	225,000	185,000	220,000	308,000	317,240	1,255,240
EL-11014	Smart Grid Technology Installation	12,396,094	11,388,345	2,748,734	0	0	0	0	2,748,734
EL-17002	Substation Breaker Replacement	2,477,480	130,146	3,697,334	1,000,000	1,000,000	0	0	5,697,334
EL-89044	Substation Facility Improvements	1,303,605	45,480	400,000	400,000	412,000	430,000	442,900	2,084,900
EL-16003	Substation Physical Security	4,021,348	1,104,759	3,386,379	165,000	300,000	189,150	169,950	4,210,479
EL-89038	Substation Protection Improvements	633,747	341,999	300,000	300,000	309,000	320,000	329,600	1,558,600
EL-16001	Underground System Rebuild	350,000	0	350,000	350,000	350,000	364,000	374,920	1,788,920
EL-19004	Wood Pole Replacement	1,983,301	1,783,568	750,000	750,000	750,000	750,000	750,000	3,750,000
System Improvements Total		\$80,684,253	\$44,845,873	\$72,386,885	\$60,044,750	\$58,325,670	\$55,653,800	\$55,771,150	\$302,182,255
Undergrounding Projects									
EL-12001	Underground District 46 - Charleston/El Camino Real	1,367	1,367	0	0	0	0	0	0
Undergrounding Projects Total		\$1,367	\$1,367	\$0	\$0	\$0	\$0	\$0	\$0
Total Uses		\$86,551,445	\$50,092,097	\$75,086,885	\$62,744,750	\$61,025,670	\$58,353,800	\$58,552,150	\$315,763,255

FIBER OPTICS FUND

Overview

The City of Palo Alto offers a full array of utility services to its citizens and businesses. The most recent addition to this list of services provided to City of Palo Alto residents and commercial customers is the licensing of dark fiber service connections on a dark optical fiber backbone network (fiber network), originally designed and built by the City in the mid to late 1990s. Major efforts to rebuild the dark fiber backbone and coordinate this work with the roll out of Fiber to the Premise (FTTP) and electric grid modernization in the Electric fund began in FY 2024.

Fiber Optics Fund Expenditures



For the 2025-2029 Capital Improvement Program (CIP), expenditures of \$42.5 million (\$42.1 million in projects) are programmed, with \$27.4 million (\$27.3 million in projects) allocated in Fiscal Year 2025. Major projects funded in the 2025-2029 CIP include Fiber-to-the-Premise (\$13.9 million) and Fiber Network System Rebuild (\$25.5 million). The budget for the Fiber Optics CIP can be categorized into two types of projects: Capacity Improvements and Customer Connections.

Infrastructure Inventory

CLASSIFICATION	QUANTITY
Route Miles of Backbone Fiber Cable	56.3

Infrastructure Inventory

CLASSIFICATION	QUANTITY
Route Miles of Overhead Backbone Fiber Optic Cable	21.6
Route Miles of Underground Backbone Fiber Optic Cable	34.6

Capacity Improvements

Advances in technology have increased the need for high-bandwidth broadband connectivity. The capacity of the City's fiber optic network must be expanded to accommodate increases in online services and applications, and the significant growth of data transmission. To ensure secure, reliable, and resilient fiber optic service for internal City operations, Palo Alto residents and commercial customers, network components such as fiber optic cables and splice cabinets need to be upgraded, added, or rebuilt to increase capacity; mitigate damage by animals; and safeguard against hazardous conditions.

In Q4 of FY 2024, a pilot was initiated to help inform the City how closely electrification grid modernization projects may be coordinated with fiber projects. The goal is to start construction for the pilot in Q2 of FY 2025. Aligning these projects may help reduce construction costs, minimize community disruption, and streamline project implementation.

Recent Accomplishments

- Began deployment of pilot to coordinate the Grid Modernization Project and Fiber-to-the-Premises (FTTP) Project, which will upgrade the electric grid and provide homes and businesses with broadband internet in a pilot area.
- Completed a 60% design of electric make-ready engineering in alignment with Fiber-to-the-Premises make-ready deployment in the pilot area.

2025-2029 Capital Improvement Program

Recurring Projects

There is one recurring project in the Capacity Improvements category in the 2025-2029 CIP:

- Fiber Optics Network System Improvements (Fiscal Year 2025: \$0.6 million; 5-Year CIP: \$1.4 million)

Non-Recurring Projects

There are two non-recurring projects in the Capacity Improvements category in the 2025-2029 CIP:

- Fiber Optics Network System Rebuild (Fiscal Year 2025: \$12.5 million; 5-Year CIP: \$25.5 million)
- Fiber-to-the-Premises (Fiscal Year 2025: \$13.9 million)

Customer Connections

The fiber network is dynamic, reflecting changes in customer fiber optic needs from equipment additions, new construction, building expansions, building remodels, teardowns, rebuilds, and new building occupancy types. Projects in this category include work required to meet the needs of customers who have applied for new, replaced, or upgraded dark fiber optic service connections. Labor and material costs incurred are offset by

FIBER OPTICS FUND

non-recurring charges (NRC) collected from customers to establish the connection, and ongoing dark fiber license fees or monthly recurring charges (MRC).

2025-2029 Capital Improvement Program

Recurring Projects

There is one recurring project in the Fiber Optics Customer Connections category with amounts in the 2025 - 2029 CIP:

- Customer Connections (Fiscal Year 2025: \$0.3 million; 5-Year CIP: \$1.2 million)

Non-Recurring Projects

There are no non-recurring projects in this category.

Fiber Optics Fund

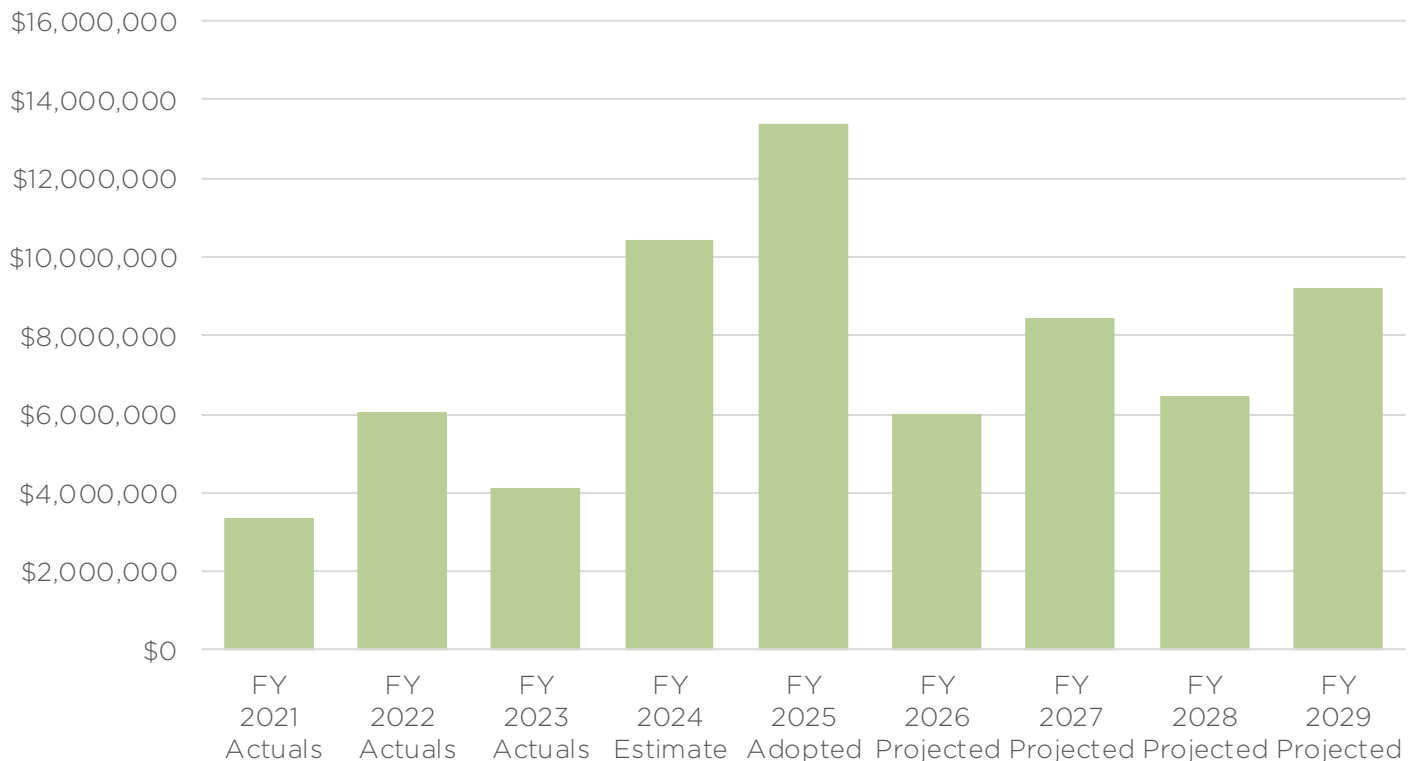
Project Number	Project Title	FY 2024 Budget	FY 2024 Estimate	FY 2025 Adopted	FY 2026	FY 2027	FY 2028	FY 2029	5-Year Total
SOURCE OF FUNDS									
Other									
FO-10000	Fiber Optics Customer Connections	200,000	200,000	200,000	200,000	200,000	200,000	200,000	1,000,000
Other Total		\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$1,000,000
Transfer from Electric Fund									
FO-16000	Fiber Optics Network - System Rebuild	0	0	0	13,000,000	0	0	0	13,000,000
Transfer from Electric Fund Total		\$0	\$0	\$0	\$13,000,000	\$0	\$0	\$0	\$13,000,000
Total Sources		\$200,000	\$200,000	\$200,000	\$13,200,000	\$200,000	\$200,000	\$200,000	\$14,000,000
USE OF FUNDS									
Capacity Improvements									
FO-10001	Fiber Optics Network - System Improvements	617,605	92,989	602,500	203,300	203,900	210,000	210,000	1,429,700
FO-16000	Fiber Optics Network - System Rebuild	16,104,526	2,259,229	12,530,000	13,000,000	0	0	0	25,530,000
FO-24000	Fiber-to-the-Premises (FTTP)	12,000,000	6,074,836	13,925,164	0	0	0	0	13,925,164
Capacity Improvements Total		\$28,722,131	\$8,427,054	\$27,057,664	\$13,203,300	\$203,900	\$210,000	\$210,000	\$40,884,864
Customer Connections									
FO-10000	Fiber Optics Customer Connections	351,600	3,071	253,100	254,100	254,900	263,000	200,000	1,225,100
Customer Connections Total		\$351,600	\$3,071	\$253,100	\$254,100	\$254,900	\$263,000	\$200,000	\$1,225,100
Total Uses		\$29,073,731	\$8,430,125	\$27,310,764	\$13,457,400	\$458,800	\$473,000	\$410,000	\$42,109,964

GAS FUND

Overview

The City of Palo Alto offers a full array of utility services to its citizens and businesses. The municipal natural gas distribution system began operation in 1917 and provides safe, reliable, and cost-effective gas service to residents and customers of Palo Alto. For the 2025-2029 Capital Improvement Program (CIP), approximately \$45.4 million (\$43.6 million in projects) is projected, with \$13.6 million (\$13.4 million in projects) allocated in Fiscal Year 2025. Overall, a total of nine projects are planned for the 5-year CIP.

Gas Fund Expenditures



Major projects funded in the 2025-2029 CIP include Gas Main Replacements (cumulative total of \$32.7 million), Gas System, Customer Connections (\$3.5 million), Gas Distribution System Improvements (\$3.2 million), and Gas Meters and Regulators (\$2.7 million). The budget for the Gas Fund CIP can be categorized into three separate types of projects: Gas Main Replacements, Customer Connections, and System Improvements.

Infrastructure Inventory

CLASSIFICATION	QUANTITY
Total miles of gas main distribution system	210.58
Total miles of gas service extension to residents and businesses	200.83
Number of gas receiving stations	4

Natural Gas System Miles of Pipeline by Material

MATERIAL TYPE	MILES OF MAINS IN SYSTEM	NUMBER OF SERVICES IN SYSTEM	MILES OF SERVICES IN SYSTEM (AVG 61' SERVICE)
Steel	61.46	2,112	24.4
Plastic, PVC	30.60	669	7.72
Plastic, PE	118.48	14,470	167.17
Plastic, ABS	0.03	12	0.14
Plastic, Other	0.01	4	0.05
Other	0.00	64	0.74
TOTAL	210.58	17,331	200.21

Customer Connections

As customers continually change their gas needs due to equipment additions, building expansions, building remodels, and new building occupancy types, the gas system must evolve to meet these needs. The Gas System Customer Connections project, which is one of the largest recurring projects within the Gas Fund, is accounted for within this category. This project allows for the completion of work required to meet the needs of customers who have applied for new or upgraded gas service. The Gas Fund pays for a portion of this project, while remaining costs are supported by reimbursements from customers for connection work performed by the City.

Recent Accomplishments

- In Fiscal Year 2023, the Utilities Gas Division completed approximately 40 customer service projects at a cost of approximately \$0.2 million.

2025-2029 Capital Improvement Program

Recurring Projects

Recurring projects in this category include the following:

- Gas System, Customer Connections (Fiscal Year 2025: \$0.7 million; 5-Year CIP: \$3.5 million)

Gas Main Replacements

The Gas Main Replacements (GMR) category accounts for the replacement of inadequately-sized and structurally deficient gas mains and services that are subject to corrosion or reaching the end of their expected life. The Utilities Department coordinates with the Public Works Department's street maintenance projects to minimize impact to the streets that have recently been paved. In the next five years, it is anticipated that approximately 40,000 linear feet of gas mains, or four percent of the entire system, will be replaced. The 2025-2029 CIP includes \$32.7 million in funding for projects within this category.

Recent Accomplishments

- Started construction on the Gas Main Replacement 24B project (GS-14003) to replace 18,500 linear feet of natural gas mains and approximately 190 natural gas service pipeline made of Polyvinyl Chloride (PVC) and Steel Black Wrap Pipe (BWP).
- Completed design work on the Gas Main Replacement 25 (GS-15000) project to replace 25,000 linear feet of natural gas mains, including replacement of approximately 320 natural gas service pipelines made of

GAS FUND

PVC, BWP, or undersized Polyethylene (PE) and the reconnection of 225 natural gas service pipelines. In late FY 2024, this project was awarded a \$16.5 million Department of Transportation grant for Natural Gas Distribution Infrastructure Safety and Modernization. The grant funding, expense allocation, and project scope will be adjusted as part of the FY 2026 budget process.

2025-2029 Capital Improvement Program

Non-Recurring Projects

A total of four Gas Main Replacement projects are included in the 2025-2029 CIP (Fiscal Year 2025: \$9.7 million; 5-Year CIP: \$32.7 million).

System Improvements

To ensure reliable gas services for City of Palo Alto residents and customers, gas infrastructure must be replaced upon reaching the end of its expected life. The System Improvements category includes four projects during the 2025-2029 CIP at a total cost of \$7.3 million, with \$3.0 million allocated in Fiscal Year 2025. During Fiscal Year 2025, staff intends to commence a planning study to evaluate the preferred approach for downsizing the gas system and potentially begin planning of the first project. For FY 2025, staff is recommending funding (\$1.0 million) for the Gas Line Repair at Arastradero Creek (GS-25001).

Recent Accomplishments

- In calendar year 2023, repaired 101 Grade 1, 2, and 3 leaks throughout the City.
- Purchased new electrofusion machine for water, gas, and wastewater polyethylene pipe, new DataLogger 7 for hydraulic butt fusions on polyethylene pipe, and new set of small diameter squeezers to squeeze gas pipe.
- Replaced leaking valves and gas service lines, throughout the City, to comply with new utility standards.

2025-2029 Capital Improvement Program

Recurring Projects

There are three recurring projects in the System Improvements category in the 2025-2029 CIP:

- Gas Distribution System Improvements (Fiscal Year 2025: \$1.2 million; 5-Year CIP: \$3.2 million)
- Gas Equipment and Tools (Fiscal Year 2025: \$0.1 million; 5-Year CIP: \$0.5 million)
- Gas Meters and Regulators (Fiscal Year 2025: \$0.7 million; 5-Year CIP: \$2.7 million)

Non-Recurring Projects

There is one non-recurring project in the System Improvements category in the 2025-2029 CIP:

- Gas Line Repair at Arastradero Creek (Fiscal Year 2025: \$1.0 million)

Please refer to the City of Palo Alto Utilities webpage to confirm project details: <https://www.cityof-paloalto.org/Departments/Utilities/Utilities-Services-Safety/Utilities-Projects>

Gas Fund

Project Number	Project Title	FY 2024 Budget	FY 2024 Estimate	FY 2025 Adopted	FY 2026	FY 2027	FY 2028	FY 2029	5-Year Total
SOURCE OF FUNDS									
Other									
GS-80017	Gas System, Customer Connections	500,000	500,000	500,000	500,000	500,000	500,000	500,000	2,500,000
Other Total		\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$2,500,000
Transfer from Water Fund									
GS-14003	Gas Main Replacement - Project 24	171,590	171,590	0	0	0	0	0	0
Transfer from Water Fund Total		\$171,590	\$171,590	\$0	\$0	\$0	\$0	\$0	\$0
Total Sources		\$671,590	\$671,590	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$2,500,000
USE OF FUNDS									
Customer Connections									
GS-80017	Gas System, Customer Connections	887,698	520,801	700,000	700,000	700,000	700,000	700,000	3,500,000
Customer Connections Total		\$887,698	\$520,801	\$700,000	\$700,000	\$700,000	\$700,000	\$700,000	\$3,500,000
Main Replacements									
GS-13001	Gas Main Replacement - Project 23	63,265	63,265	0	0	0	0	0	0
GS-14003	Gas Main Replacement - Project 24	9,776,974	8,795,364	981,610	0	0	0	0	981,610
GS-15000	Gas Main Replacement - Project 25	3,703,849	0	8,743,849	0	0	0	0	8,743,849
GS-16000	Gas Main Replacement - Project 26	0	0	0	4,216,000	6,665,496	0	0	10,881,496
GS-20000	Gas Main Replacement - Project 27	0	0	0	0	0	4,683,622	7,404,806	12,088,428
Main Replacements Total		\$13,544,088	\$8,858,629	\$9,725,459	\$4,216,000	\$6,665,496	\$4,683,622	\$7,404,806	\$32,695,383
System Improvements									
GS-11002	Gas Distribution System Improvements	1,282,546	615,823	1,166,723	500,000	500,000	500,000	500,000	3,166,723
GS-13002	Gas Equipment and Tools	118,967	118,967	100,000	100,000	100,000	100,000	100,000	500,000
GS-25001	Gas Line Repair at Arastradero Creek	0	0	1,000,000	0	0	0	0	1,000,000
GS-80019	Gas Meters and Regulators	532,482	343,937	688,545	500,000	500,000	500,000	500,000	2,688,545
System Improvements Total		\$1,933,995	\$1,078,727	\$2,955,268	\$1,100,000	\$1,100,000	\$1,100,000	\$1,100,000	\$7,355,268
Total Uses		\$16,365,781	\$10,458,157	\$13,380,727	\$6,016,000	\$8,465,496	\$6,483,622	\$9,204,806	\$43,550,651

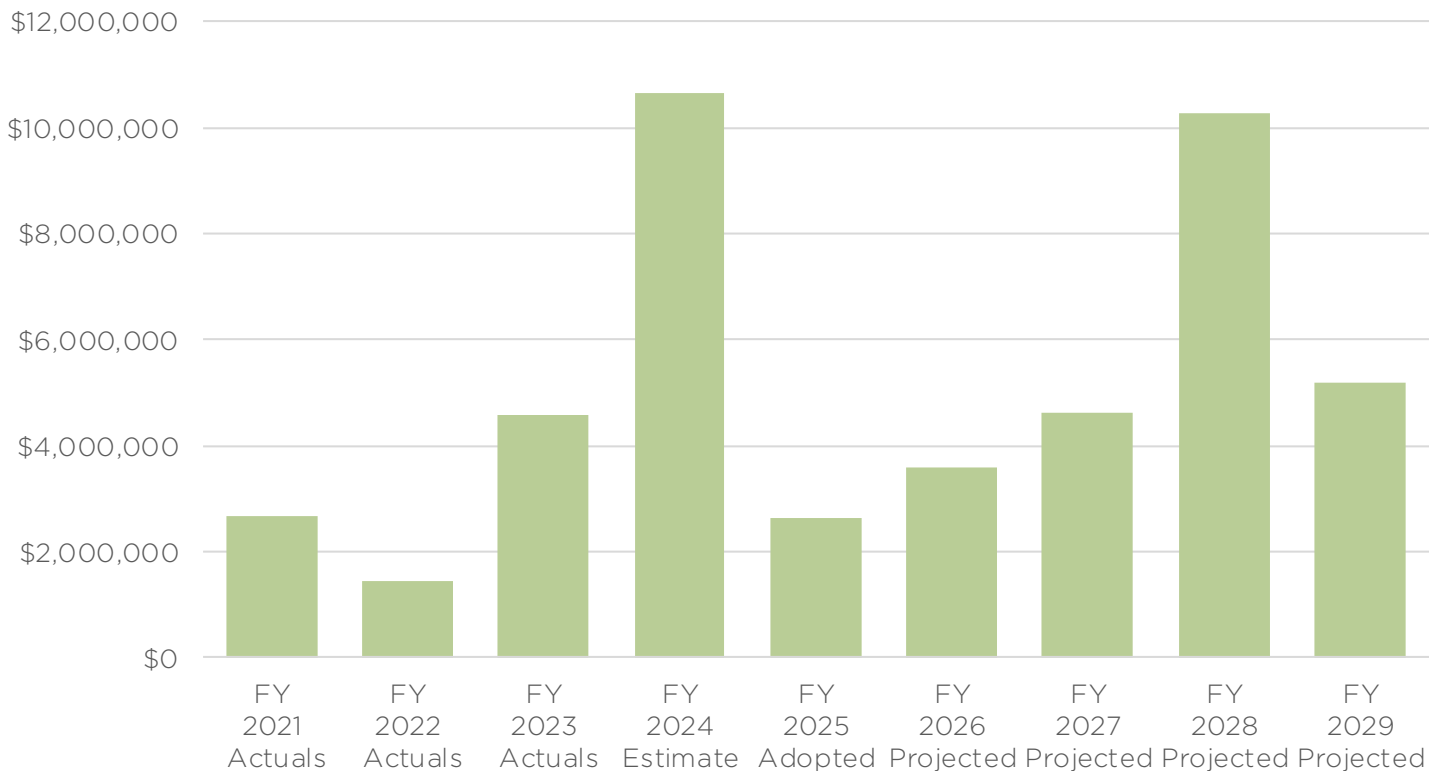
WASTEWATER COLLECTION FUND

WASTEWATER COLLECTION FUND

Overview

The City of Palo Alto offers a full array of utility services to its citizens and businesses. The municipal Wastewater Collection System began operation in 1898 and continues to provide safe, reliable, and cost-effective services to residents and customers of Palo Alto. For the 2025-2029 Capital Improvement Program (CIP), approximately \$26.6 million (\$26.3 million in projects) is projected, with \$2.6 million allocated in Fiscal Year 2025. Overall, a total of seven projects are programmed for the 5-year CIP.

Wastewater Collection Fund Expenditures



Major projects funded in the 2025-2029 CIP include Wastewater Collection System Rehabilitation/Augmentation projects (cumulative total of \$18.1 million), Sewer Lateral/Manhole Rehabilitation and Replacement (\$4.6 million), and Sewer System, Customer Connections (\$2.3 million). The budget for the Wastewater Collection Fund CIP is categorized into three types of projects: Customer Connections, System Improvements, and System Rehabilitation/Augmentation. In order to balance the Wastewater Collection Fund reserves and keep rate increases low, the wastewater main replacement (Collection System Rehabilitation/Augmentation) projects have been reduced from annually to biennially to keep expenditures in line with expected revenue.

Infrastructure Inventory

CLASSIFICATION	QUANTITY
Total miles of sanitary sewer lines	206.64
Total number of sanitary laterals	17,830

Customer Connections

As customers continually change their wastewater needs due to equipment additions, new construction, building expansions, building remodels, teardowns and rebuilds, and new building occupancy types, the Wastewater Collection System must evolve to meet these needs. The Sewer System Customer Connections project is the only project within this category and includes work required to meet the needs of customers who have applied for new sewer laterals or are required to upgrade the laterals. The Wastewater Collection Fund pays for a portion of this project while remaining costs are supported by reimbursements from customers for project work performed by the City.

Recent Accomplishments

- In Fiscal Year 2023, the Utilities Wastewater Division completed approximately 43 customer service projects at a cost of \$0.3 million.

2025-2029 Capital Improvement Program

Recurring Projects

There is one recurring project in Customer Connections in the 2025-2029 CIP: Sewer System, Customer Connections (Fiscal Year 2024: \$0.5 million; 5-Year CIP: \$2.3 million). This project funds changes to customer connections and costs are partially offset by reimbursements from customers requesting the service.

System Improvements

To ensure reliable wastewater collection services for City of Palo Alto residents and customers, sanitary sewer infrastructure must be replaced upon reaching the end of its expected life. The System Improvements category includes three projects during the 2025-2029 CIP at a total cost of \$5.9 million, with \$1.2 million allocated in Fiscal Year 2025.

2025-2029 Capital Improvement Program

Recurring Projects

A total of \$5.9 million is programmed for System Improvement recurring projects in the 2025-2029 CIP, with \$1.2 million allocated in Fiscal Year 2025. Recurring projects in this category include the following:

- Wastewater System Improvements (Fiscal Year 2025: \$0.2 million; 5-Year CIP: \$1.0 million)
- Wastewater General Equipment and Tools (Fiscal Year: 2025: \$0.1 million; 5-Year CIP: \$0.3 million)
- Sewer Lateral/Manhole Rehabilitation and Replacement (Fiscal Year 2025: \$0.9 million; 5-Year CIP: \$4.6 million)

System Rehabilitation /Augmentation

To ensure reliable wastewater services for the City of Palo Alto residents and customers, infrastructure must be replaced upon reaching the end of its useful life. The infrastructure replacement program includes projects that will rehabilitate or replace deteriorated pipelines. In the next five years, it is estimated that approximately 30,200 linear feet of wastewater mains will be replaced. The System Rehabilitation category includes three projects during the 2025-2029 CIP at a total cost of \$18.1 million, with \$1.0 million allocated in Fiscal Year 2025.

WASTEWATER COLLECTION FUND

Recent Accomplishments

- Completed design of Sanitary Sewer Replacement Project 31 (SSR 31) in Fiscal Year 2023 and construction to be completed by the end of August 2024. This project included the replacement and rehabilitation of 10,924 linear feet of sanitary sewer main, sewer laterals, and manholes on El Camino Real between Page Mill Road and Cesano Court, as well as Page Mill Road between Ash Street and Ramos Way. The existing clay pipe mains will be replaced with High Density Polyethylene pipe.

2025-2029 Capital Improvement Program

Non-Recurring Projects

The majority of funding within this category is allocated towards Wastewater Collection System Rehabilitation/Augmentation Projects (cumulative total of \$18.1 million). The program is prioritized to replace pipes with structural damage to minimize sewer overflows and to replace pipes with condition defects to reduce inflow of rainfall and groundwater into the collection system. The Utilities Department coordinates with the Public Works Department's street maintenance projects to minimize impact to the streets that have been recently paved when replacing sewer mains.

Linear footage and locations are subject to change, please refer to the City of Palo Alto Utilities webpage to confirm project details: <https://www.cityofpaloalto.org/Departments/Utilities/Utilities-Services-Safety/Utilities-Projects>.

Wastewater Collection Fund

Project Number	Project Title	FY 2024 Budget	FY 2024 Estimate	FY 2025 Adopted	FY 2026	FY 2027	FY 2028	FY 2029	5-Year Total
SOURCE OF FUNDS									
Other									
WC-80020	Sewer System, Customer Connections	450,000	450,000	250,000	250,000	250,000	250,000	250,000	1,250,000
Other Total		\$450,000	\$450,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$1,250,000
Total Sources		\$450,000	\$450,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$1,250,000

USE OF FUNDS									
Customer Connections									
WC-80020	Sewer System, Customer Connections	466,142	302,066	450,000	450,000	450,000	450,000	450,000	2,250,000
Customer Connections Total		\$466,142	\$302,066	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$2,250,000
System Improvements									
WC-99013	Sewer Lateral/Manhole Rehabilitation and Replacement	1,018,829	959,729	875,500	900,000	927,000	955,000	975,000	4,632,500
WC-13002	Wastewater General Equipment and Tools	118,480	54,218	90,000	50,000	50,000	50,000	50,000	290,000
WC-15002	Wastewater System Improvements	804,002	503,366	200,000	200,000	200,000	200,000	200,000	1,000,000
System Improvements Total		\$1,941,311	\$1,517,313	\$1,165,500	\$1,150,000	\$1,177,000	\$1,205,000	\$1,225,000	\$5,922,500
System Rehabilitation									

WASTEWATER COLLECTION FUND

Wastewater Collection Fund *(Continued)*

Project Number	Project Title	FY 2024 Budget	FY 2024 Estimate	FY 2025 Adopted	FY 2026	FY 2027	FY 2028	FY 2029	5-Year Total
WC-17001	Wastewater Collection System Rehabilitation/Augmentation Project 30	622,363	408,898	0	0	0	0	0	0
WC-19001	Wastewater Collection System Rehabilitation/Augmentation Project 31	8,436,225	8,436,225	0	0	0	0	0	0
WC-20000	Wastewater Collection System Rehabilitation/Augmentation Project 32	0	0	1,000,000	2,000,000	0	0	0	3,000,000
WC-21000	Wastewater Collection System Rehabilitation/Augmentation Project 33	0	0	0	0	3,000,000	8,600,000	0	11,600,000
WC-26000	Wastewater Collection System Rehabilitation/Augmentation Project 34	0	0	0	0	0	0	3,512,716	3,512,716
System Rehabilitation Total		\$9,058,588	\$8,845,123	\$1,000,000	\$2,000,000	\$3,000,000	\$8,600,000	\$3,512,716	\$18,112,716
Total Uses		\$11,466,041	\$10,664,502	\$2,615,500	\$3,600,000	\$4,627,000	\$10,255,000	\$5,187,716	\$26,285,216

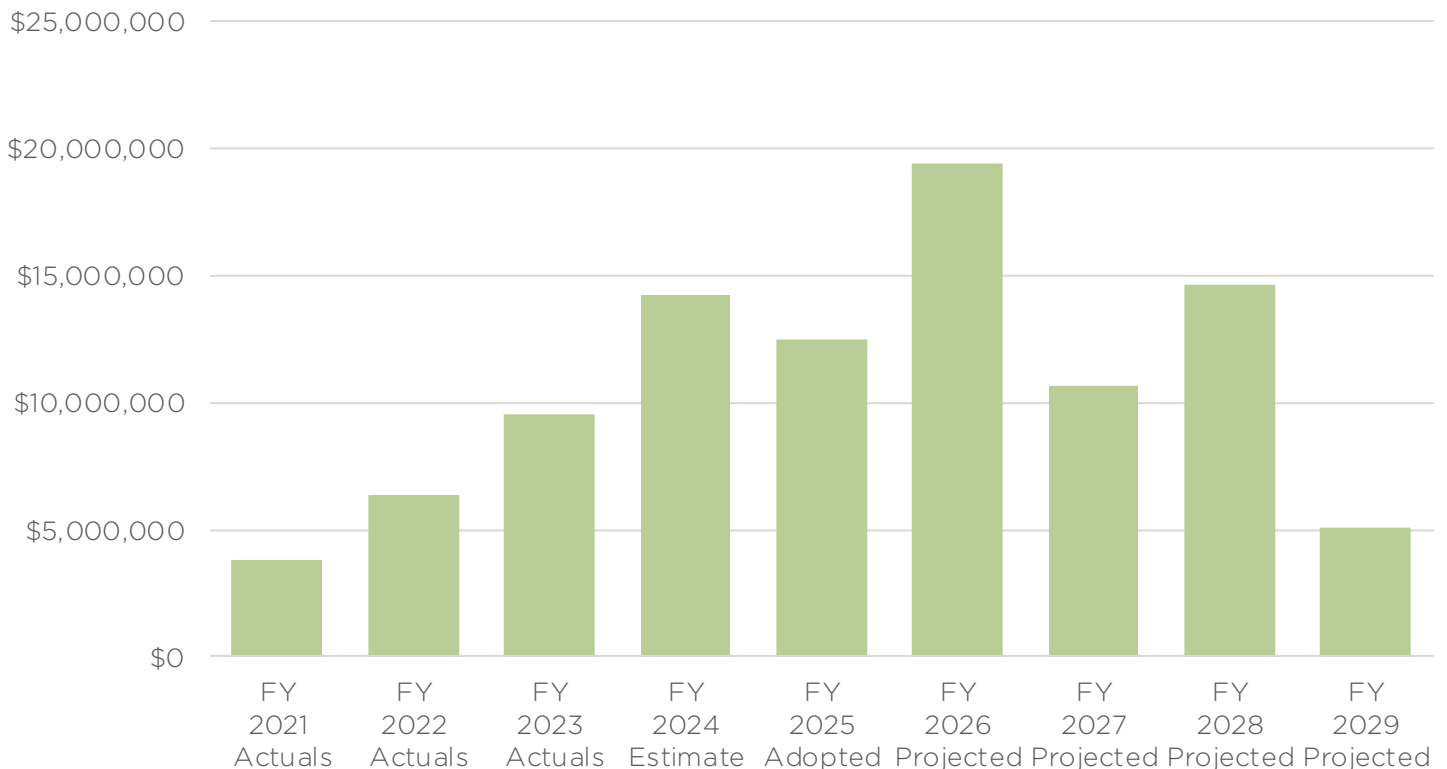
WATER FUND

WATER FUND

Overview

The City of Palo Alto offers a full array of utility services to its citizens and businesses. The municipal Water Distribution System began operation in 1896 and continues to provide safe, reliable, and cost-effective water service to residents and customers of Palo Alto. For the 2025-2029 Capital Improvement Program (CIP), approximately \$62.5 million (\$62.3 million in projects) is projected, with \$12.5 million allocated in Fiscal Year 2025. Overall, a total of 13 projects are planned for the 5-year CIP.

Water Fund Expenditures



Major projects funded in the 2025-2029 CIP include Water Main Replacements (cumulative total of \$24.9 million), Water Tank Seismic Upgrade and Rehabilitation (\$16.9 million), Water System Customer Connections (\$5.2 million), Water Meters (\$1.9 million) and Water, Gas, and Wastewater Utility GIS Data (\$2.8 million). The budget for the Water Fund CIP is categorized into three types of projects: Customer Connections, System Improvements, and Water Main Replacements.

Infrastructure Inventory

CLASSIFICATION	QUANTITY
Miles of water main	231.17
Number of wells	1 active standby and 7 emergency standby
Number of reservoirs	3 steel and 4 reinforced concrete

Water Distribution System Main Materials

MATERIAL	TIME	TOTAL LENGTH	PERCENT
Asbestos Cement Pipe		127.33 mi	55.1%
Concrete Cylinder Pipe		16.79 mi	7.3%
Cast Iron Pipe		17.87 mi	7.7%
Copper Pipe		0.28 mi	0.12%
Ductile Iron Pipe		4.63 mi	2.00%
Polyethylene		22.25 mi	9.6%
Polyvinyl Chloride		40.87 mi	17.7%
Steel		0.73 mi	0.3%
Unknown Material		0.40 mi	0.2%
Total:		231.17 mi	100%

Customer Connections

As customers continually change their water needs due to equipment additions, new construction, building expansions, building remodels, teardowns and rebuilds, and new building occupancy types, the water system must evolve to meet these needs. The Water System Customer Connections is the only project in this category and includes work required to meet the needs of customers who have applied for new or upgraded water service. The Water Fund pays for a portion of this project, while remaining costs are supported by reimbursements from customers for project work performed by the City.

Recent Accomplishments

- In Fiscal Year 2023 the Water Utility completed approximately 21 water service projects at a cost of \$0.4 million.

2025-2029 Capital Improvement Program

Recurring Projects

The Water System Customer Connections is the only project within this category. Over the course of the 2025-2029 CIP, \$5.2 million is programmed, with \$1.0 million allocated in Fiscal Year 2025.

System Improvements

To ensure reliable water services for the City of Palo Alto's residents and customers, infrastructure must be replaced at the end of its expected life. The System Improvements category includes seven projects as part of the 2025-2029 CIP at a total cost of \$32.2 million, with \$7.6 million allocated in Fiscal Year 2025.

Recent Accomplishments

- Completed two Turnouts (a.k.a. water receiving stations) within Project (WS-07000) in April 2024. The work at California Avenue turnout included a seismic retrofit of the facility, replacement of all piping, electrical and SCADA upgrades, added roof access from street, drainage improvements, and lead paint removal. Page Mill turnout included work to restrain a valve to remove an unsafe condition to operators working in the vault.

WATER FUND

2025-2029 Capital Improvement Program

Recurring Projects

A total of \$15.2 million is programmed for System Improvement recurring projects during the 2025-2029 CIP, with \$6.6 million allocated in Fiscal Year 2025. Recurring projects in this category include the following:

- Water Distribution System Improvements (Fiscal Year 2025: \$1.0 million; 5-Year CIP: \$2.3 million)
- Water General Equipment/Tools (Fiscal Year 2025: \$0.05 million; 5-Year CIP: \$0.3 million)
- Water, Gas, Wastewater Utility GIS Data (Fiscal Year 2025: \$0.6 million; 5-Year CIP: \$2.9 million)
- Water Meters (Fiscal Year 2025: \$0.4 million; 5-Year CIP: \$1.9 million)
- Water Service Hydrant Replacement (Fiscal Year 2025: \$0.4 million; 5-Year CIP: \$2.2 million)
- Water System Supply Improvements (Fiscal Year 2025: \$4.1 million; 5-Year CIP: \$5.7 million)

Non-Recurring Projects

There is one non-recurring project in this category:

- Water Tank Seismic Water System Upgrades (Fiscal Year 2025: \$1.0 million; 5-Year CIP: \$16.9 million)

Water Main Replacements

The Water Main Replacements category accounts for the replacement of inadequately sized and structurally deficient water mains. In the next five years, it is estimated that approximately 3 miles of water mains will be replaced. Work is scheduled based on the replacement schedule of water and wastewater construction every even year and gas construction every odd year to reduce the amount of construction when prices are high and allow staff to draft and prepare plans for construction in subsequent years.

A recent study indicated that the City has already replaced many of the most leak-prone and deteriorated pipes through the past water main replacement projects 1 through 26. This study identified 11.6 miles of mains that are deteriorating or are in liquefaction zones, which will be addressed through future replacement projects. Upcoming water main replacement projects will continue to target replacement of deteriorating and seismically vulnerable pipes.

Recent Accomplishments

- Completed construction of Water Main Replacement Project 28 (WS-14001) and replaced approximately 13,700 linear feet of water main pipelines in various locations throughout the City.
- Completed design of Water Main Replacement Project 29 (WS-15002) to replace approximately 8,000 linear feet of water main pipelines in Evergreen Park and Ventura neighborhoods, as well as in the California Business District. The construction of this project started in November 2023 and the anticipated completion is in August 2024.
- Completed construction of the Water Regulation Station Improvement Project (WS-07000) and completed the seismic rehabilitation of two underground vaults. This concludes the Water Regulations Station Improvement project, which improved a total of 14 underground vaults and two above-ground water regulation facility locations.

2025-2029 Capital Improvement Program

Non-Recurring Projects

The 2025-2029 CIP includes \$24.9 million in funding for the four projects within this category, all water main replacements, with \$3.9 million appropriated for Fiscal Year 2025 and a total of \$24.9 million programmed for

the 2025-2029 CIP. The Utilities Department coordinates with the Public Works Department's street maintenance projects to minimize impact to the streets that have been recently paved when replacing water mains.

Water Fund

Project Number	Project Title	FY 2024 Budget	FY 2024 Estimate	FY 2025 Adopted	FY 2026	FY 2027	FY 2028	FY 2029	5-Year Total
SOURCE OF FUNDS									
Other									
WS-80013	Water System Customer Connections	1,100,000	1,100,000	1,128,500	1,140,100	1,152,000	1,118,000	1,118,000	5,656,600
Other Total		\$1,100,000	\$1,100,000	\$1,128,500	\$1,140,100	\$1,152,000	\$1,118,000	\$1,118,000	\$5,656,600
Transfer from Gas Fund									
WS-02014	Water, Gas, Wastewater Utility GIS Data	171,100	171,100	176,300	181,000	186,400	194,000	200,000	937,700
Transfer from Gas Fund Total		\$171,100	\$171,100	\$176,300	\$181,000	\$186,400	\$194,000	\$200,000	\$937,700
Transfer from Wastewater Collection Fund									
WS-02014	Water, Gas, Wastewater Utility GIS Data	171,100	171,100	176,300	181,000	186,400	194,000	200,000	937,700
Transfer from Wastewater Collection Fund Total		\$171,100	\$171,100	\$176,300	\$181,000	\$186,400	\$194,000	\$200,000	\$937,700
Total Sources		\$1,442,200	\$1,442,200	\$1,481,100	\$1,502,100	\$1,524,800	\$1,506,000	\$1,518,000	\$7,532,000
USE OF FUNDS									
Customer Connections									
WS-80013	Water System Customer Connections	1,072,157	1,072,157	960,500	989,000	1,018,700	1,100,000	1,100,000	5,168,200
Customer Connections Total		\$1,072,157	\$1,072,157	\$960,500	\$989,000	\$1,018,700	\$1,100,000	\$1,100,000	\$5,168,200
Main Replacements									
WS-14001	Water Main Replacement - Project 28	1,792,989	1,792,989	0	0	0	0	0	0
WS-15002	Water Main Replacement - Project 29	9,105,861	6,016,759	3,089,102	0	0	0	0	3,089,102
WS-16001	Water Main Replacement - Project 30	425,000	10,000	840,000	8,959,000	0	0	0	9,799,000
WS-19001	Water Main Replacement - Project 31	0	0	0	447,950	472,140	9,952,696	0	10,872,786
WS-20000	Water Main Replacement - Project 32	0	0	0	0	0	485,035	682,207	1,167,242
Main Replacements Total		\$11,323,850	\$7,819,748	\$3,929,102	\$9,406,950	\$472,140	\$10,437,731	\$682,207	\$24,928,130
System Improvements									
WS-11003	Water Distribution System Improvements	769,768	99,380	975,388	314,000	323,000	335,000	345,000	2,292,388
WS-13002	Water General Equipment/Tools	50,000	0	100,000	50,000	50,000	50,000	50,000	300,000
WS-80015	Water Meters	2,100,340	1,988,729	367,440	342,270	407,130	404,930	427,630	1,949,400
WS-07001	Water Recycling Facilities	391,000	0	0	0	0	0	0	0

WATER FUND

Water Fund *(Continued)*

Project Number	Project Title	FY 2024 Budget	FY 2024 Estimate	FY 2025 Adopted	FY 2026	FY 2027	FY 2028	FY 2029	5-Year Total
WS-07000	Water Regulation Station Improvements	1,257,059	1,238,540	18,519	0	0	0	0	18,519
WS-80014	Water Service and Hydrant Replacement	400,000	369,421	412,000	424,000	437,000	450,000	464,000	2,187,000
WS-11004	Water System Supply Improvements	3,616,440	197,734	4,133,706	366,000	377,000	390,000	402,000	5,668,706
WS-09000	Water Tank Seismic Upgrade and Rehabilitation	8,019,938	462,167	1,037,832	7,000,000	7,000,000	900,000	1,000,000	16,937,832
WS-02014	Water, Gas, Wastewater Utility GIS Data	1,021,055	971,055	578,800	544,000	560,000	583,000	600,000	2,865,800
System Improvements Total		\$17,625,600	\$5,327,026	\$7,623,685	\$9,040,270	\$9,154,130	\$3,112,930	\$3,288,630	\$32,219,645
Total Uses		\$30,021,607	\$14,218,931	\$12,513,287	\$19,436,220	\$10,644,970	\$14,650,661	\$5,070,837	\$62,315,975