

Water Division 10-Year CIP

Glendale Water & Power Commission
December 5, 2016



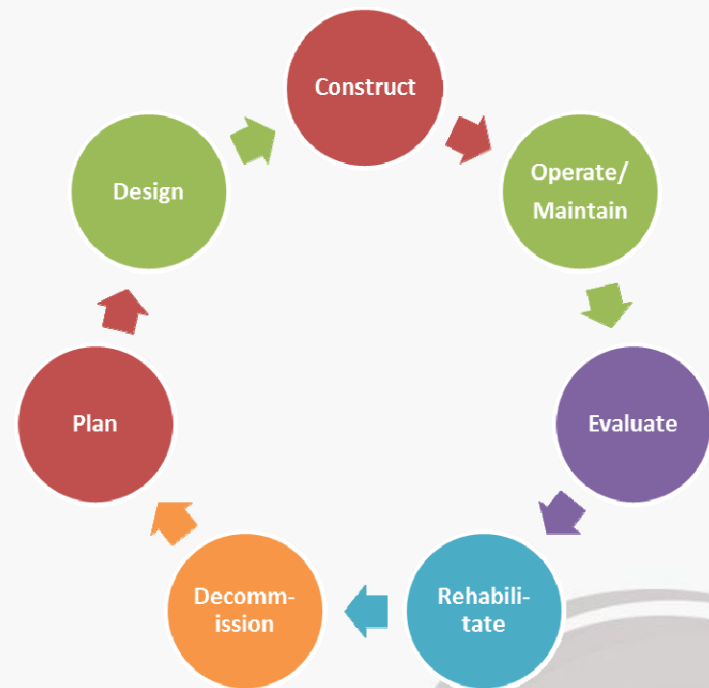
Introduction

- The 10-Year CIP is a recommendation of asset replacement and rehabilitation needs over the next 10 years.
- Overview of Asset Management vs. CIP
- Master Plan Tie-In
- High Level Budget Summary
- Breakdown by Project Category
- Funding and Implementation



Asset Management

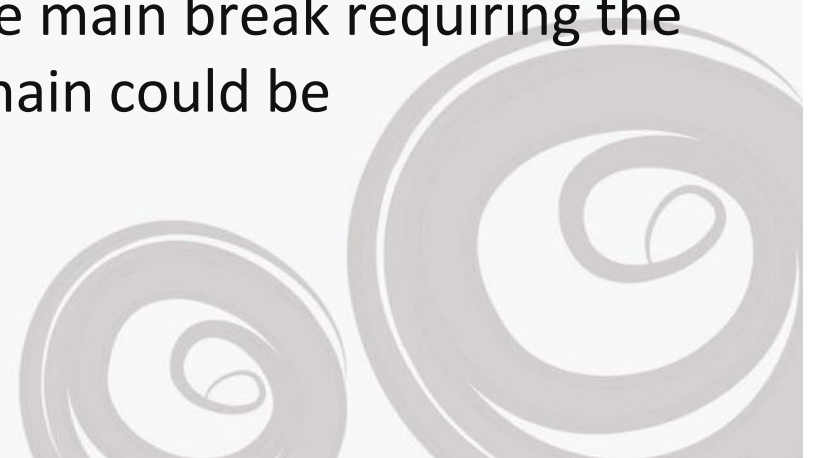
- Asset Life Cycle
 - Water utilities are asset intensive
- CIP
 - Evaluate, plan, design, construct or rehabilitate
 - Shortest portion of the cycle



Water CIP

- What is a CIP?

- Capital Improvement Programs are a set of projects that cost more than typical operations and maintenance work, and are usually planned in advance.
- O&M work is usually considered to be an “expense” instead of a “capital expenditure”. Capital items also have a longer life than an “expense” item.
- There is some overlap, i.e. a large main break requiring the installation of a section of new main could be “capitalized”.



Water Master Plan

- Completed: December 2015
- Project Outcomes:
 - Analysis of current system.
 - Projections on future system needs.
 - Assessment of current system condition.
 - Recommendations on replacement needs.
 - Initial prioritization of near, mid, and long term projects.
 - Roadmap for future work, and budgeting.
- Source document to develop the 10-Year CIP

Implementation Figure

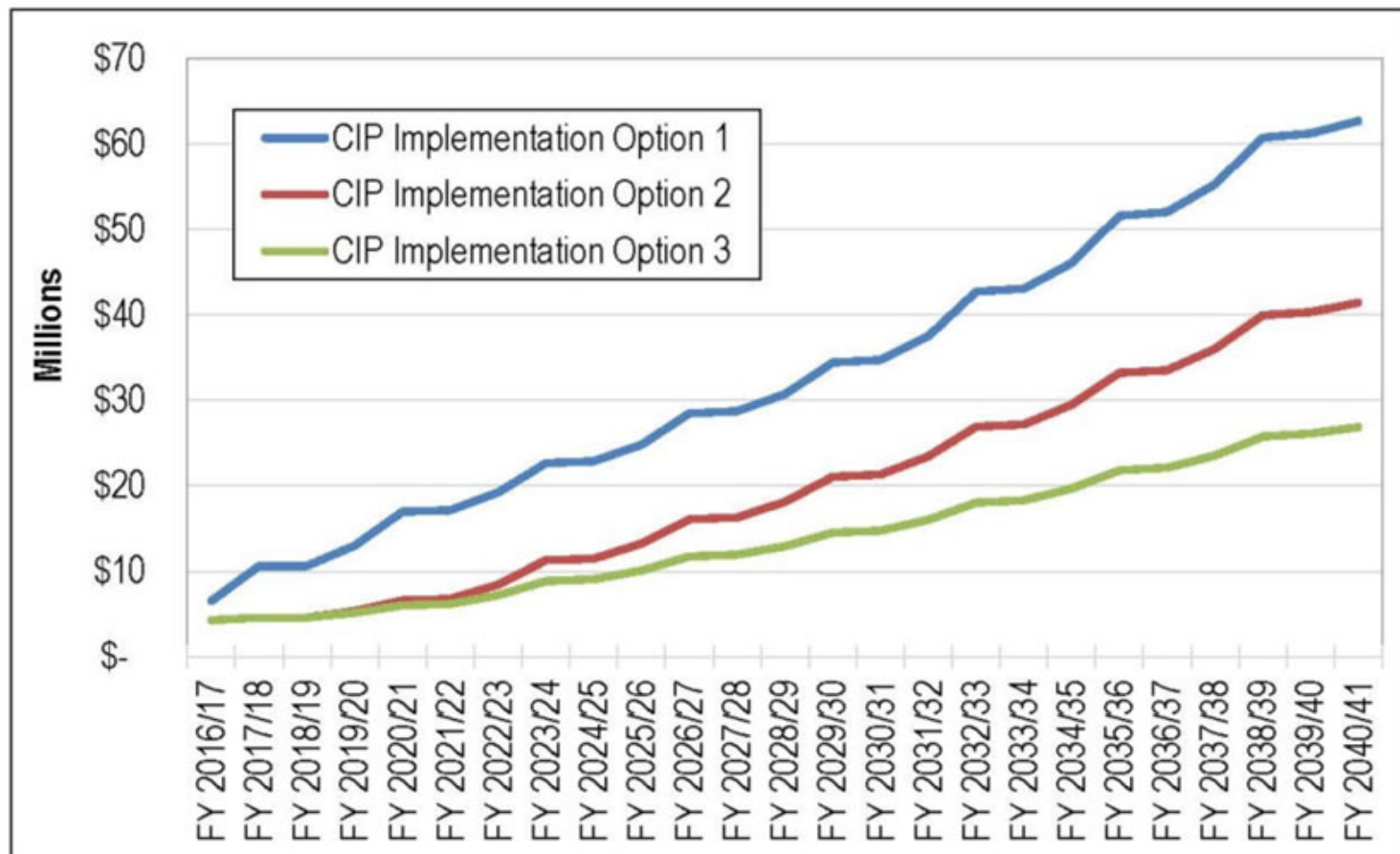


Figure ES.16 Annual Financial Impact to Water Fund

Implementation Table

**Table ES.8 Average Annual Water Fund Impacts
Water Master Plan
City of Glendale**

		Phase 1	Phase 2	Phase 3
Implementation Option		FY 2016/17 through FY 2020/21	FY 2021/22 through FY 2030/31	FY 2031/32 through FY 2040/41
Option 1	Average Annual Impact	\$11,566,000	\$26,388,000	\$51,306,000
Option 2	Average Annual Impact	\$5,082,000	\$14,418,000	\$33,163,000
Option 3	Average Annual Impact	4,928,000	10,735,000	21,828,000

Proposed Annual Budgets

- 2017/2108 Under Current Rates
- 2018/2019 to 2022/2023 all of Phase 1's budget, from the Water Master Plan, at the Option 3 spending level (\$25 million) plus the Option 3 budgets of 2021/2022 and 2022/2023 (\$20 million).
- Equates to \$45 million divided by 5 years, or approximately \$9 million per year
- Final four years set at a rate between Option 2 and Option 3 in order to avoid the build-up of a larger backlog of work

Year	Proposed Budget
2017/2018	\$7.3 million
2018/2019	\$9.3 million
2019/2020	\$9.2 million
2020/2021	\$9.1 million
2021/2022	\$8.9 million
2022/2023	\$9.1 million
2023/2024	\$12.0 million
2024/2025	\$12.1 million
2025/2026	\$12.6 million
2026/2027	\$11.9 million

Budgets by Group

Major Group	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
Pipelines	\$2.9 mil	\$5.9 mil	\$5.0 mil	\$5.3 mil	\$5.7 mil
Facilities and Plants	\$2.7 mil	\$1.1 mil	\$1.8 mil	\$1.3 mil	\$0.8 mil
Annual Programs	\$1.7 mil	\$2.3 mil	\$2.4 mil	\$2.5 mil	\$2.4 mil
Total	\$7.3 mil	\$9.3 mil	\$9.2 mil	\$9.1 mil	\$8.9 mil

Major Group	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027
Pipelines	\$5.7 mil	\$7.2 mil	\$7.3 mil	\$7.4 mil	\$7.1 mil
Facilities and Plants	\$0.8 mil	\$1.2 mil	\$1.2 mil	\$1.6 mil	\$1.2 mil
Annual Programs	\$2.6 mil	\$3.6 mil	\$3.6 mil	\$3.6 mil	\$3.6 mil
Total	\$9.1 mil	\$12.0 mil	\$12.1 mil	\$12.6 mil	\$11.9 mil

Pipelines

- 380 Miles of pipelines total
- Vary by size, material, year of installation, current condition
- Upgrades needed due to age and condition, to address service level issues like improving flow during high demands and fires and to provide redundancy.
- The age & condition replacements were phased:
replace 29.7 miles of 4 inch,
replace 18.4 miles of 6 inch
installed before 1945, replace
66.7 miles of 6 inch installed
between 1945 and 1970, etc.



Pipeline Map

Pipeline Projects

Major Group	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
Pipeline Management Program	\$1.3 mil	\$2.3 mil	\$3.9 mil	\$3.2 mil	\$4.1 mil
Fire Flow Improvements	\$0.0 mil	\$0.9 mil	\$0.0 mil	\$0.0 mil	\$1.6 mil
Capacity Improvements	\$1.6 mil	\$2.7 mil	\$1.1 mil	\$2.1 mil	\$0.0 mil
Total	\$2.9 mil	\$5.9 mil	\$5.0 mil	\$5.3 mil	\$5.7 mil

Major Group	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027
Pipeline Management Program	\$4.2 mil	\$5.9 mil	\$5.4 mil	\$3.5 mil	\$4.1 mil
Fire Flow Improvements	\$1.5 mil	\$1.3 mil	\$1.4 mil	\$2.1 mil	\$3.0 mil
Capacity Improvements	\$0.0 mil	\$0.0 mil	\$0.5 mil	\$1.8 mil	\$0.0 mil
Total	\$5.7 mil	\$7.2 mil	\$7.3 mil	\$7.4 mil	\$7.1 mil

Facilities and Plants

- Potable and Recycled Systems
- 22 pressure zones
- 32 reservoirs and tanks
- 31 pump stations
- 72 pumps and motors
- 16 wells
- 6 interconnections
- 3 pressure regulating stations
- 2 treatment plants
- 5 chemical facilities
- 2 turbine-generators
- 6 dams
- Plus the SCADA system



Facility and Plant Projects

Major Group	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
Portable Power Back-up Program		\$0.3 mil	\$0.4 mil	\$0.1 mil	
Chevy Chase 1666 Tank Removal and Pump Upgrades			\$0.1 mil	\$0.4 mil	
Allen Tank Removal and Pump Upgrades		\$0.1 mil	\$0.5 mil		
Glorietta Well 7	\$2.0 mil	\$0.6 mil			
Glendale Heights Tank Replacement	\$0.7 mil	\$0.1 mil			
Reservoir Wood Roof Replacement Program			\$0.8 mil	\$0.8 mil	\$0.8 mil
Total	\$2.7 mil	\$1.1 mil	\$1.8 mil	\$1.3 mil	\$0.8 mil

Major Group	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027
Chevy Oaks Recycled Pump Station				\$0.2 mil	
Verdugo Basin Production Study		\$0.2 mil			
Direct Potable Reuse Study		\$0.1 mil	\$0.1 mil	\$0.1 mil	
Grandview Solar Generation/Battery Storage Project			\$0.1 mil	\$0.5 mil	
Reservoir Wood Roof Replacement Program	\$0.8 mil	\$0.9 mil	\$1.0 mil	\$0.8 mil	\$1.2 mil
Total	\$0.8 mil	\$1.2 mil	\$1.2 mil	\$1.6 mil	\$1.2 mil

Annual R&R

- Annual rehabilitation and replacement (R&R)
- Spans each asset category
- Cost drives need to capitalize
- 34,000 service lines, meters, endpoints
- 9,000 valves
- 3,100 fire hydrants
- Smaller budgets



Annual R&R Projects

Major Group	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
Service Line Replacement Program	\$0.0 mil	\$0.05 mil	\$0.05 mil	\$0.05 mil	\$0.05 mil
Meter & Endpoint Replacement Program	\$0.0 mil	\$0.0 mil	\$0.0 mil	\$0.0 mil	\$0.35 mil
Hydrant Replacement Program	\$0.0 mil	\$0.15 mil	\$0.15 mil	\$0.15 mil	\$0.15 mil
Valve Replacement & Installation Program	\$0.0 mil	\$0.5 mil	\$0.5 mil	\$0.5 mil	\$0.3 mil
Slope & Access Road Stabilization Program	\$1.0 mil	\$0.05 mil	\$0.05 mil	\$0.05 mil	\$0.05 mil
Pumping Unit Efficiency Program	\$0.05 mil	\$0.2 mil	\$0.2 mil	\$0.2 mil	\$0.15 mil
Tank Rehabilitation Program	\$0.3 mil	\$0.35 mil	\$0.35 mil	\$0.35 mil	\$0.35 mil
System Optimization Upgrades	\$0.0 mil	\$0.5 mil	\$0.65 mil	\$0.75 mil	\$0.5 mil
Water Quality Enhancement Program	\$0.2 mil	\$0.1 mil	\$0.1 mil	\$0.1 mil	\$0.1 mil
Facility Security and Landscaping Upgrade Program	\$0 mil	\$0.2 mil	\$0.2 mil	\$0.2 mil	\$0.2 mil
Large Tool Replacements	\$0 mil	\$0.01 mil	\$0.01 mil	\$0.01 mil	\$0.01 mil
Fleet Replacements	\$0.14 mil	\$0.15 mil	\$0.15 mil	\$0.15 mil	\$0.15 mil
Total	\$1.7 mil	\$2.3 mil	\$2.4 mil	\$2.5 mil	\$2.4 mil

Annual R&R Projects – Cont.

Major Group	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027
Service Line Replacement Program	\$0.05 mil	\$0.05 mil	\$0.05 mil	\$0.05 mil	\$0.05 mil
Meter & Endpoint Replacement Program	\$0.4 mil	\$0.4 mil	\$0.4 mil	\$0.4 mil	\$0.4 mil
Hydrant Replacement Program	\$0.15 mil	\$0.15 mil	\$0.15 mil	\$0.15 mil	\$0.15 mil
Valve Replacement & Installation Program	\$0.3 mil	\$0.3 mil	\$0.3 mil	\$0.3 mil	\$0.3 mil
Slope & Access Road Stabilization Program	\$0.05 mil	\$0.05 mil	\$0.05 mil	\$0.05 mil	\$0.05 mil
Pumping Unit Efficiency Program	\$0.15 mil	\$0.2 mil	\$0.2 mil	\$0.2 mil	\$0.2 mil
Tank Rehabilitation Program	\$0.4 mil	\$0.65 mil	\$0.65 mil	\$0.65 mil	\$0.65 mil
System Optimization Upgrades	\$0.65 mil	\$1.3 mil	\$1.3 mil	\$1.3 mil	\$1.3 mil
Water Quality Enhancement Program	\$0.1 mil	\$0.1 mil	\$0.1 mil	\$0.1 mil	\$0.1 mil
Facility Security and Landscaping Upgrade Program	\$0.2 mil	\$0.2 mil	\$0.2 mil	\$0.2 mil	\$0.2 mil
Large Tool Replacements	\$0.01 mil	\$0.01 mil	\$0.01 mil	\$0.01 mil	\$0.01 mil
Fleet Replacements	\$0.15 mil	\$0.15 mil	\$0.15 mil	\$0.15 mil	\$0.15 mil
Total	\$2.6 mil	\$3.6 mil	\$3.6 mil	\$3.6 mil	\$3.6 mil

Implementation

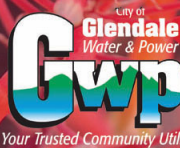
- Process
 - Approvals
 - COSA
 - Staffing
 - Delivery
- Policy
 - Risk Tolerance
 - Levels of Service
 - Unplanned Outages
 - Future Cost Control
- Policy – Cont.
 - Rates
 - Funding Mechanism
- Rate Implications
 - PAYGO
 - Bonds
 - Future Generations Charge
 - COSA



Q & A

**Less water
doesn't
mean less
lovely.**

Make your garden a beautiful California
friendly garden with drought tolerant plants.



Every drop counts, let's do everything we can.