



# RATE FUNDED CAPITAL IMPROVEMENT PLAN

## Riverside Public Utilities

Board of Public Utilities  
August 14, 2023

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## BACKGROUND

1. On June 12, 2023, the Board approved a recommendation to the City Council to conceptually approve both the Water and Electric Five-Year Rate plans.
2. Board Members asked for an update on what capital projects have been completed since the 2018 rate increase plans and advise the planned capital investments to be funded by the currently proposed for the Electric and Water Utility Five-Year Rate Plan Proposal



## PROPOSED RESIDENTIAL 5 YEAR ELECTRIC RATE PLAN



WATER: \$0.15 Per Day



ELECTRIC: \$0.21 Per Day



REFUSE: + \$0.09 Per Day

\$0.45 Per Day

or

\$13.50 Per Month



Average rate increase per year for 5 years



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3

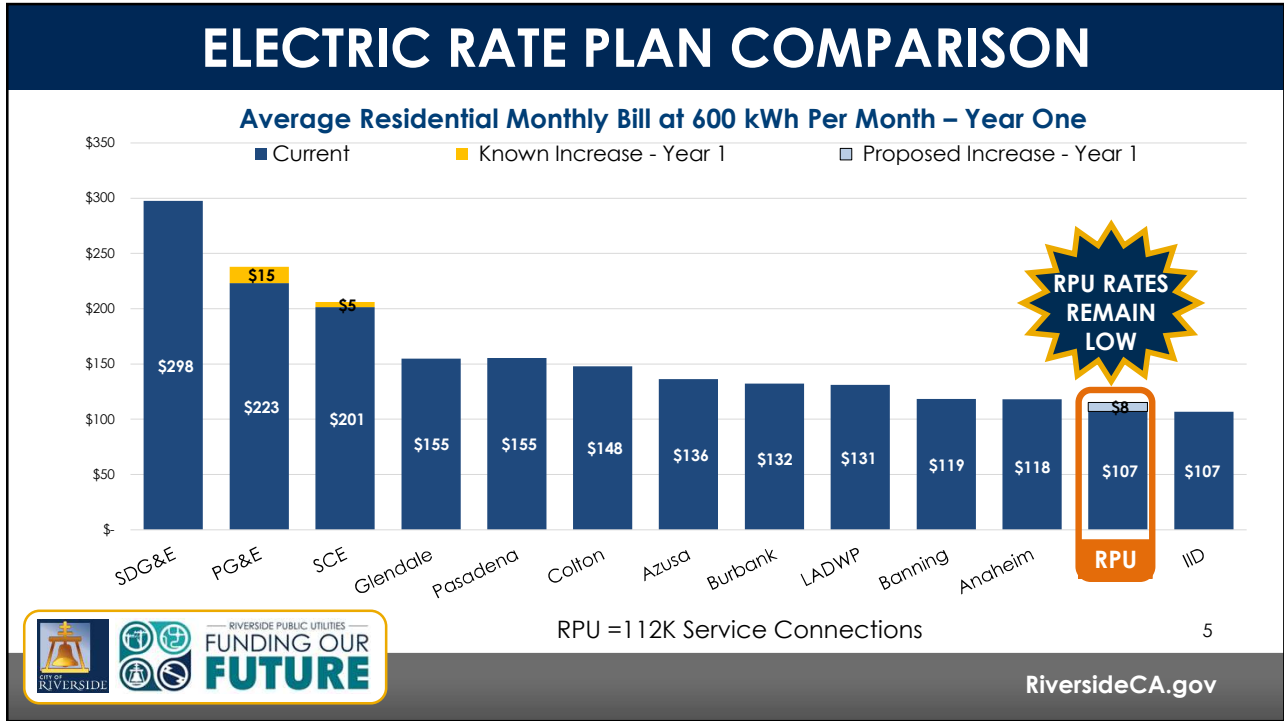
## PROPOSED ELECTRIC 5-YEAR RATE PLAN

Customer Class	Customers	Year 1 % Increase	Year 2 % Increase	Year 3 % Increase	Year 4 % Increase	Year 5 % Increase	Compound Annual Growth Rate
Residential (3 Tiers)	99,718	7.1%	7.1%	7.0%	2.3%	2.4%	28.5%
Commercial Flat (2 Tiers)	11,015	2.5%	2.8%	3.0%	3.0%	2.9%	15.1%
Commercial Demand (2 Tiers)	988	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Industrial TOU (3 periods)	622	5.9%	6.6%	6.3%	4.3%	4.3%	30.5%






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4




## PROPOSED RESIDENTIAL 5 YEAR WATER RATE PLAN



-  WATER: \$0.15 Per Day
-  ELECTRIC: \$0.21 Per Day
-  REFUSE: + \$0.09 Per Day

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**\$0.45 Per Day**  
**or**  
**\$13.50 Per Month**



Average rate  
increase per year  
for 5 years

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# PROPOSED WATER 5-YEAR RATE PLAN

Customer Class	Customers	Year 1 % Increase	Year 2 % Increase	Year 3 % Increase	Year 4 % Increase	Year 5 % Increase	Compounded Annual Growth Rate
Single Family Residential (3 tiers per class)	58,731	5.7%	6.6%	6.6%	6.7%	6.6%	36.7%
Multi Family Residential (2 tiers per class)	1,145	4.6%	6.6%	6.6%	6.7%	6.6%	35.2%
Commercial/ Industrial	5,137	8.6%	6.0%	6.1%	6.3%	6.0%	37.6%
Landscape	500	13.6%	5.9%	5.8%	6.1%	5.8%	43.0%
City Interruptible/ Recycled	530	5.8%	6.3%	6.0%	5.8%	6.3%	34.1%
Agriculture (up to 3 tiers per class)	224	1.8%	6.4%	6.5%	6.4%	6.5%	30.7%
Riverside Water Co. Irrigators (3 tiers per class)	24	19.3%	7.1%	7.0%	7.2%	6.9%	56.7%
Temporary Service	72	12.0%	7.0%	6.9%	7.1%	7.0%	46.8%

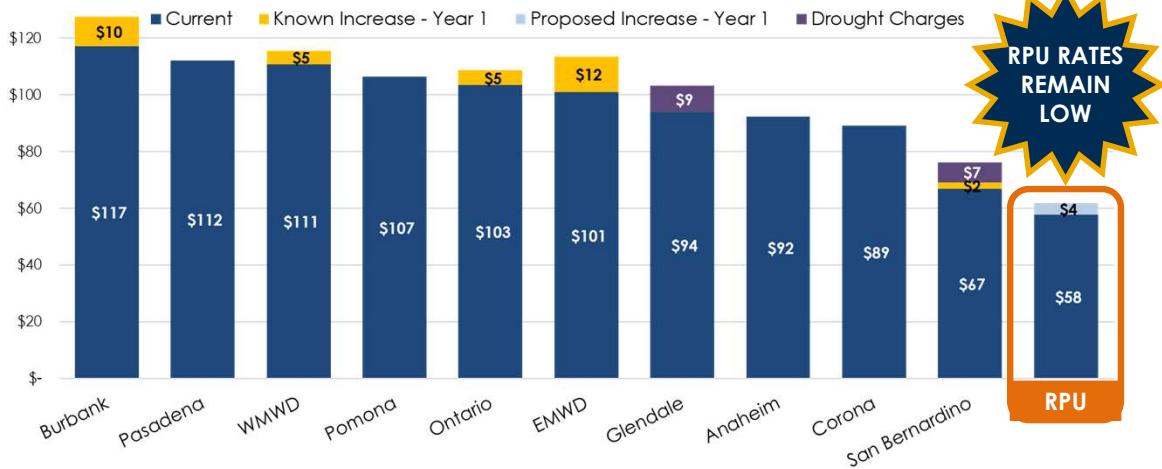


7

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# WATER RATE PLAN COMPARISON

Average Residential Monthly Bill at 21 CCF Per Month – Year One



RPU = 66K Service Connections

8

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## CAPITAL IMPROVEMENT PROGRAM (CIP)

1. Multi-year financial plan
  - a. For the repair, replacement, and/or construction of municipal facilities and infrastructure.
  - b. Strategically identifies both funded and unfunded capital improvement projects over a period of five years.
2. Definition
  - a. Long-term investment of funds to improve, repair, or replace an existing capital asset and/or construct or acquire a new capital asset.
  - b. A capital project is a City resource, infrastructure and/or property with a value of at least \$20,000 and initial useful life of at least 10 years.



9

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## RPU'S 10-YEAR CIP

On January 18, 2018, the City Council Conducted a joint workshop with the Board and approved to conceptually approve the electric and water utility five-year rate proposal 2018-2022 utilizing the Utility 2.0 Strategic Plan Modified Option 1 for electric and water utility infrastructure improvements over the **next 10 years**, with rates approximately 35% lower than the original five-year rate proposal based on Option 3 infrastructure improvements, with yearly review by the City Council.



10

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# RPU'S 10-YEAR CIP

RPU prepares two-year Operating and five-year Capital Budgets, which serve as RPU's revenue and expenditure plan. These budgets are prepared in accordance with existing City, Board, and City Council policies, procedures, and guidelines.

RPU's budget and corresponding CIP investments from the 2018 10-year CIP program, have been approved by Board and City Council:

City Council Date	Budget Fiscal Years	CIP Fiscal Years
6/18/2019	2019 – 2020 (amended)	2019 - 2024
6/16/2020	2020 – 2021	2020 -2021
6/22/2021	2021 -2022	2021 - 2022
6/21/2022	2022 - 2024	2022 -2024



# ELECTRIC CIP

The Electric Plan rate increases support investment in the electric system. The following is a summary of the 2018 investment plan, the 2018-2023 expenses, and the projects to be funded by the currently proposed for the Electric Utility Five-Year Rate Plan.

Project Category	10 Year Plan (2018-2028)	Budgeted (2018-2023)	Expenditures 2018-2023	5 Year Plan (2024-2028)
1. Overhead Projects	\$89,208,000	\$30,428,289	\$10,895,370	\$48,947,000
2. Underground Projects	\$139,326,000	\$29,966,569	\$18,973,956	\$75,125,000
3. Substation Projects	\$88,100,000	\$30,448,024	\$38,021,033	\$69,683,000*
4. System Automation	\$96,574,000	\$45,189,662	\$26,110,384	\$83,162,000
5. Recurring Projects	\$115,037,000	\$94,902,173	\$72,273,033	\$38,582,000
Total:	\$528,245,000	\$230,934,717	\$166,273,776	\$315,499,000
Rate Increase:	3%			5%

\*+/- \$40 million Hunter Substation will be funded with carryovers and/or using a portion of \$69,683,000 Substation Project funding in the 2023 5-Year Rate Plan. No additional CIP in the proposed five-year Electric Rate Plan.



# COMPLETED AND PLANNED - ELECTRIC

## 1. Overhead Projects: \$89,208,000 10-Year Investment (FY 2018-2028)

- 3,080 poles and related equipment replacements
- 600 overhead switches replacements
- 1,270 street light retrofits
- Convert 29 4kV circuits to 12kV in 6 years

### Completed:

811 streetlights replaced  
 900 poles and related equipment replaced  
 200 overhead switches replaced  
 10 circuits converted to 12kV

### Planned:

376 street light retrofits  
 1,540 poles and related equipment  
 400 overhead switch replacements  
 15 voltage conversions (4kV to 12kV)



# ELECTRIC PROJECTS COMPLETED 2018-2023

## Pole Replacement City Wide

Completed 2022

Replacing poles ensures we maintain reliable service, maintain safety for workers and the public, and meet compliance obligations.



# ELECTRIC PROJECTS COMPLETED 2018-2023

Overhead Distribution  
Transformer Replacement  
City Wide

Ensuring reliable power to  
customers



15

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# COMPLETED AND PLANNED- ELECTRIC

2. Underground Projects: \$139,326,000 10-Year Investment (FY 2018-2028)

- 62 miles of cable replacement
- 262 vault replacements
- 116 switch replacements

Completed

18 miles of cable replaced  
4 vaults replaced  
10 switches replaced

Planned:

25 miles of cable replacement  
30 vault replacements  
25 switch replacements  
20 Distribution Line Extension and Line  
Rebuilds



16

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# ELECTRIC PROJECTS COMPLETED 2018-2023

Cable Replacement  
Project located in Canyon  
Crest Area

Completed 2019

New cable will provide  
reliable power to  
customers for decades.



17

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# ELECTRIC PROJECTS COMPLETED 2018-2023

Switch Replacement  
City Wide

Replacing switches  
ensures we maintain  
reliable safe service and  
meet compliance  
obligations.



18

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## COMPLETED AND PLANNED - ELECTRIC

### 3. Substation Projects: \$88,100,000 10-Year Investment (FY 2018-2028)

- 7 transformer replacements
- 5 switchgear replacements
- 70 breaker replacements
- 570 relay replacements



## COMPLETED AND PLANNED - ELECTRIC

### 3. Substation Projects: cont.

**Completed:**

3 transformers replaced and 2 transformers in the procurement process  
 2 switchgears replaced and 12 capacitors replaced  
 Approximately 280 electromechanical relays with 80 digital relays replaced  
 45 circuit breakers replaced and upgraded

**Planned:**

Harvey Lynn Switchgear 5 Relay Replacement (Phase 2)  
 Riverside Switchgear 3,4&5 phase 4 Upgrade  
 Harvey Lynn Substation Upgrade Project  
 Hunter Substation Replacement Project  
 La Colina Substation Upgrade (Phase 2)  
 La Colina - University Line Relay Replacement  
 Riverside Breaker 52-4  
 Riverside Transformer T6 Addition  
 Substation Automation System Upgrades (Phase 2)  
 Orangecrest Relay Upgrades (SWGR 1 & 2)  
 Plaza Substation 69kV Breaker Replacement  
 Plaza Substation Ring Bus Project & Retirement of T1 & T2  
 Battery Charger Replacement Program  
 Springs - Orangecrest Fiber Cable Replacement  
 Replace Radio Sites Generators  
 System - Wide relay Improvement

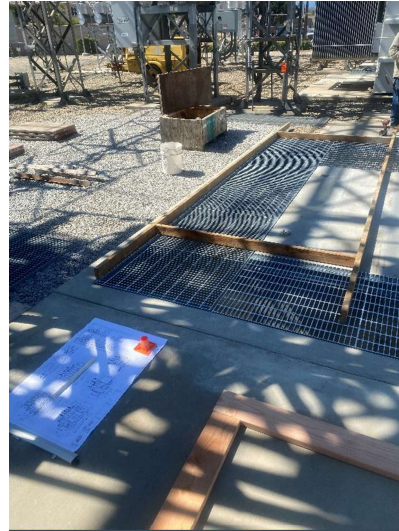


# ELECTRIC PROJECTS COMPLETED 2018-2023

Substation Transformer Foundation located at Freeman Substation

Completed 2020

Provides foundation for transformer



21



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# ELECTRIC PROJECTS COMPLETED 2018-2023

69kV Vacuum Circuit Breaker Replacement at Orangecrest Substation

Completed 2022

Provides protection from electrical faults and isolation for maintenance



22



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# ELECTRIC PROJECTS COMPLETED 2018-2023

Switchgear Replacement located at Freeman Substation

Completed 2020

Monitors electric distribution lines and opens circuit breaker when fault occurs.



23

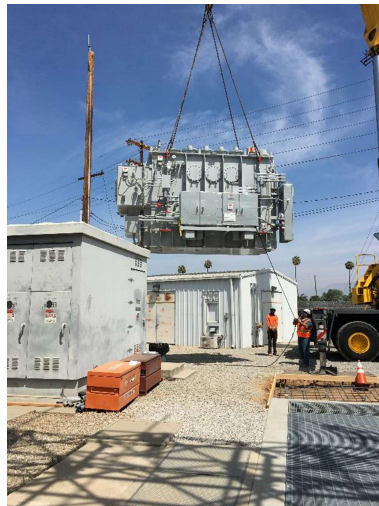
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# ELECTRIC PROJECTS COMPLETED 2018-2023

Substation Transformer Replacement located at Freeman Substation

Completed 2020

Steps down voltage from 69,000 Volts (69kV) to 12,000 Volts (12KV), provides Power to ~4,000 Customers



24

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# ELECTRIC PROJECTS COMPLETED 2018-2023

Switchgear Replacement located at Riverside Substation

Completed 2022

Monitors electric distribution lines and opens circuit breaker when fault occurs.



25

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# COMPLETED AND PLANNED- ELECTRIC

4. System Automation: \$96,574,000 10-Year Investment (FY 2018-2028)
- Citywide streetlight LED lamp replacement program
  - Electric vehicle charging stations
  - Substation and distribution system monitoring and control

**Completed**  
 Replaced over 25,000 high pressure sodium lamps with new LED luminaires  
 Established electrical service four (4) for privately owned electric vehicle charging stations  
 Completed substation teleprotection and substation automation projects, including Remote Terminal Units (RTU) upgrades.

**Planned:**  
 6,000 Citywide streetlight LED lamp replacement program for Historic Districts  
 Electric vehicle charging stations and Infrastructure upgrades  
 Substation and distribution system monitoring and control  
 Outage Management System  
 Advanced Distribution Management System



26

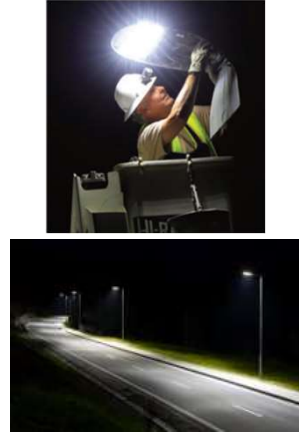
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# ELECTRIC PROJECTS COMPLETED 2018-2023

LED Streetlight Replacement City Wide

Completed 2023

Greatly reduces energy use. LED lights have a longer life and reduce overall maintenance costs for bulb replacement.



27

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# COMPLETED AND PLANNED- ELECTRIC

## 5. Recurring Projects: \$115,037,000 10-Year Investment (FY 2018-2028)

Facilities needed to serve new customers and expanded load, including:

- Services and meters for new customers
- Line extensions and rebuilds
- Overhead to underground conversions

### Completed

Issued to Construction over 710 new Electric Service designs and meter panel upgrades for new customer/developer driven projects, including but not limited to new line extensions and overhead to underground conversions.

Notable projects include:

- 2 new Feeder Line Extensions for CARB
- UCR North District Phase 1 Line Extension
- Nordstrom Feeder Line Extension
- The Exchange Development Line Extension
- Iowa Avenue Road Widening and Overhead to Underground Conversion
- UCR Linden Avenue Overhead to Underground Conversion Phase 1

### Planned:

Facilities needed to serve new customers and expanded load, including:

- Services and meters for new customers
- Line extensions and rebuilds
- Overhead to underground conversions



28

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# ELECTRIC PROJECTS COMPLETED 2018-2023

Services and meters for new customers

Line extensions and rebuilds

Ensuring that we meet the needs of our customers



# WATER CIP

The Water Plan rate increases support investment in the water system. The following is a summary of the 2018 investment plan, the 2018-2023 expenses, and the projects to be funded by the currently proposed for the Water Utility Five-Year Rate Plan.

Project Category	10 Year Plan (2018-2028)	Budgeted (2018-2023)	Expenditures 2018-2023	5 Year Plan (2024-2028)
1. Water Supply	\$10,791,000	\$12,291,304	\$10,026,110	\$28,000,000
2. Water Treatment	\$1,296,000	0		\$1,296,000
3. Well Projects	\$30,499,000	\$15,124,388	\$11,718,676	\$15,552,000
4. Transmission Pipelines	\$65,823,000	\$29,681,357	\$20,787,935	\$36,142,000
5. Distribution Pipelines	\$117,790,000	\$46,573,283	\$56,249,000	\$74,317,000
6. Distribution Facilities	\$19,268,000	\$11,581,246	\$16,197,230	\$7,872,000
7. Reservoir Projects	\$2,440,000	0		\$1,288,000
8. System Automation	\$39,209,000	\$17,859,939	\$2,844,856	\$19,225,000
Total:	\$287,116,000	\$133,111,517	\$117,823,807	\$183,692,000
Rate Increase:	5.7%			6.5%



# COMPLETED AND PLANNED - WATER

## 1. Water Supply: \$10,791,000 10-Year Investment (FY 2018-2028)

- Recycled water phase 1 - 600 acre feet new yield
- Seven Oaks Dam Enhanced recharge project - 1,000 acre feet new yield

### Completed:

Seven Oaks Dam Enhanced Recharge Phase 1A – 1 Storm Water Capture  
 Jackson Street Recycled Water Pipeline, Phase 1

### Planned:

Seven Oaks Dam Enhanced Recharge Phase 1B NEW INVESTMENT  
 Riverside Habitat Parks and Water Project - West Branch NEW INVESTMENT



# WATER PROJECTS COMPLETED 2018-2023

Water Supply

Enhanced Recharge 1A

Seven Oaks Dam

Completed: 02/2023

Groundwater recharge sediment liner to prevent groundwater mounding





## COMPLETED AND PLANNED - WATER

### 2. Water Treatment \$1,296,000 10-Year Investment

- Partial replacement of membrane filters at the John W. North Water Treatment Plant

Completed:  
None - Not Required

Planned:  
John W. North Water Treatment Plant - 3 Filter Replacements



33

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## COMPLETED AND PLANNED - WATER

### 3. Well Projects: \$30,499,000 10-Year Investment (FY 2018-2028)

- 3-5 well rehabilitations annually
- 5 new drinking water wells
- 2 new irrigation wells

Completed:  
14 Wells Rehabilitated  
2 new water wells (Warren 4R and Gage 29-3R)

Planned:  
Drilling and equipping Gage 29-2R  
Rehabilitation of wells - Garner 6 and Garner D



34

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# WATER PROJECTS COMPLETED 2018-2023

Well Projects

Gage 29-3R

Gage Well Field  
San Bernardino

1/2020-2/2022

94-year groundwater  
Well replacement



35



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# COMPLETED AND PLANNED - WATER

4. Transmission Pipelines: \$65,823,000 10-Year Investment (FY 2018-2028)

- Techite pipeline replacement
- Industrial booster station (Hunter Park) pipeline
- Park Avenue pipeline

Completed:  
2.3 miles of Techite Replaced (all  
Techite Pipe within Magnolia  
replaced)

Planned: \$36,142,000 (FY2024-2028)  
2.4 miles of Techite to be replaced  
Park Ave. Transmission Main  
Replacement



36

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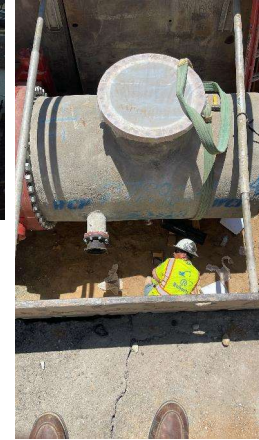
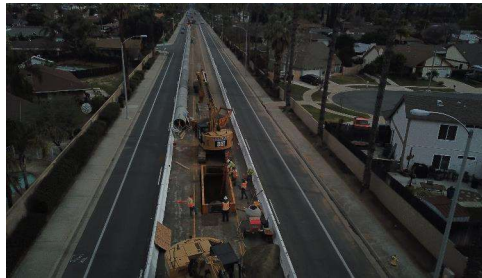
# WATER PROJECTS COMPLETED 2018-2023

Transmission Pipelines

Lincoln Techite Pipe Replacement

Fenwick to Jefferson  
7/2021-7/2023

Replacement of aging water transmission pipe



37

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# COMPLETED AND PLANNED - WATER

5. Distribution Pipelines: \$117,790,000 10-Year Investment (FY 2018-2028)

- Neighborhood pipeline replacements - averaging 4.9 miles per year (170-year replacement cycle)

Completed:

Neighborhood pipeline replacements – 11.2 miles of pipeline replaced (350+ year replacement cycle)

Planned:

Neighborhood pipeline replacements per budget



38

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# WATER PROJECTS COMPLETED 2018-2023

Distribution Pipelines

Wells and Cypress Ave

7/2021-12/2021

Replacement of aging water distribution pipe and service laterals



39



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# COMPLETED AND PLANNED- WATER

## 6. Distribution Facilities \$19,268,000 10-Year Investment (FY 2018-2028)

- Canyon Crest pump station replacement
- Crest pump station replacement
- Polk/Magnolia pressure control station replacement
- Replace/rebuild 4,500 meters annually

### Completed:

Mission Inn and Canyon Crest Boosters constructed  
 Magnolia Pressure Reducing Station constructed  
 10,035 small meters replaced; 155 large meters replaced; 1,655 large meters tested/calibrated

### Planned:

Water meter replacements  
 Booster station motor and pump replacements  
 Pressure reducing station replacements



40

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# WATER PROJECTS COMPLETED 2018-2023

Distribution Facilities

Canyon Crest Booster

830 El Cerrito Drive

Start-End  
2/2021-08/2023

Aging infrastructure replacement to maintain system pressure



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# COMPLETED AND PLANNED - WATER

7. Reservoir Projects: \$2,440,000 10-Year Investment (FY 2018-2028)

- Rehabilitation of water storage reservoirs to secure and protect water quality

Completed:  
None needed

Planned:  
Reservoir Rehabilitation



42

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# COMPLETED AND PLANNED - WATER

## 8. System Automation \$39,209,000 10-Year Investment

- Automated metering infrastructure
- Production, treatment and distribution system monitoring to improve security and efficiency
- Operational data management system to improve management control and efficiency

Completed:  
SCADA Phase I (Network Communication)

Planned:  
SCADA Phase II and III (Network Communication)  
Advanced Metering Infrastructure



43

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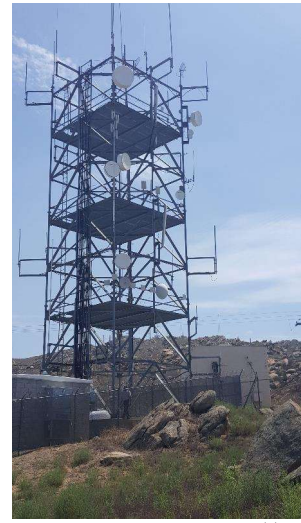
# WATER PROJECTS COMPLETED 2018-2023

System Automation  
Network Communication

SCADA Phase I  
Systemwide

Start-End  
2/2019-6/2022

Operate and monitor  
water system facilities



44



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# STRATEGIC PLAN ALIGNMENT



## Strategic Priority 5 - High Performing Government

**Goal 5.4** - Achieve and maintain financial health by addressing gaps between revenues and expenditures and aligning resources with strategic priorities to yield the greatest impact.

### Cross-Cutting Threads



Community Trust



Fiscal Responsibility



Sustainability & Resiliency



Equity



Innovation



4545

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# RECOMMENDATION

That the Board of Public Utilities receive an update on the Capital Improvement Plan budgets and expenditures for fiscal years 2018-2023 and the planned capital investments to be funded by the currently proposed Electric and Water Utility Five-Year Rate Plan Proposal introduced to the Board on June 12, 2023.



46

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