



Electric Utility and Water Utility 5-Year Rate Proposal 2018 – 2022

City Council
Board of Public Utilities
January 18, 2018

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Outline

1. Staff Presentation

- a. Background
- b. Responses to Council Questions
- c. Modified Option 1 Rate Proposal
- d. Next Steps

2. Supplemental Information

- a. Customer Impacts
- b. Alternatives and Risks
- c. Tiered and Seasonal Water Rates

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Background

Utility 2.0 Strategic Planning Process, Financial Planning, Rate Recommendations

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UTILITY 2.0 STRATEGIC GOALS

Customer Service

Provide world-class customer-centered service in every encounter, every day.

Reliability & Resiliency

Renew, replace, upgrade, modernize and extend the water and electric system infrastructure to ensure reliability is maintained or improved and that resilience to extreme events is maintained or improved.

Affordability

Keep water and electricity rates affordable and comply with Fiscal Policy.

Sustainability

Meet all city goals and state and federal compliance targets related to efficient use of water and electricity, renewable resources, and greenhouse gas emissions.

Operational Excellence

Instill, maintain and grow a culture of learning, innovation and continuous improvement in all internal processes achieving excellence in all our operations.

Strong Workforce

Attract, retain, train, educate and promote employees ensuring that a high level of employee performance, productivity and engagement is achieved.

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Water-Energy-Life



Utility 2.0 – Planning For Our Future 10-Year Infrastructure Plan

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Utility 2.0

1. Strategic Planning (2015)
 - a. Four Board Special Meetings
 - b. Two Council/Board Workshops
 - c. One Council Workshop (Finance)
2. Option 3 Conceptual Approval
 - a. 10-Year infrastructure, technology and workforce requirements
 - b. Authorization to conduct financial planning, determine revenue needs



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Utility 2.0 (continued)

1. Financial Planning (2016)
 - a. 10-Year Financial Pro Formas
 - b. Cost of Service and Rate Design Studies
2. Strategic Plan (2017)
3. Rate Setting Process (2017-2018)
 - a. Presentation to Board (August) and City Council (September)
 - b. Community Outreach (October-November)
 - i. 55 community presentations/meetings
 - ii. Special low-income and agricultural customer outreach
 - c. Two Joint City Council and Board Workshops (November, January)

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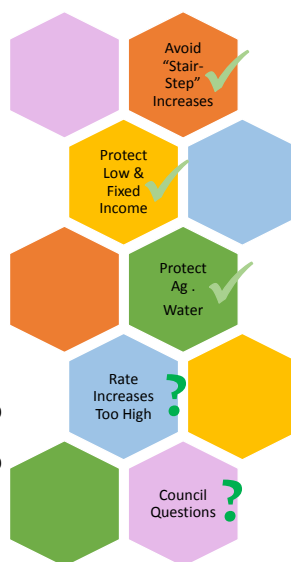


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Board, Council & Community Feedback

Expanded support level
Expanded eligibility
New water bill support

Rate Proposal Lowered:
Electric: 4.8% ↓ 3.0%
Water: 8.6% ↓ 5.7%



Regular review & oversight
Rate forecasts

Freeze Rates for 1 year
Citizen Task Force to study

40 questions submitted

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Outcomes of November 28 Workshop

1. Board & Council Conceptually Approved
 - a. Annual Financial & Rate Forecasts
 - b. Expanded Low-Income and Fixed Income Assistance
2. Council Conceptually Approved, without Board Recommendation
 - a. Agricultural Rates Task Force, with Frozen Agricultural Rates (1-year)
3. Board Recommended, Council Declined to Conceptually Approve
 - a. Revised Rate Proposal
4. Further Direction from Council
 - a. Submission of Questions regarding Revised Rate Proposal
 - b. Additional Joint Workshop in January



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Annual Financial & Rate Forecasts

1. Each December, starting in 2019, Board and Council to receive:
 - a. Annual update on spending
 - b. Five-year rate preview/forecast for years 2023-2027 to avoid future "stair step" rate increases
2. City Council may reopen current rate plan [by majority vote](#)
(Council-directed change from supermajority with Mayor's consent)
3. By the end of 2021, as part of Fiscal Year 2022-24 Two-Year Budget, a new 5-year rate package to be presented by Board to City Council for consideration starting in July 2023
4. Future rate review process, even if *de minimis*



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Low-Income and Fixed Income Assistance

1. SHARE and ESAP program enhancements
2. Comprehensive outreach campaign
3. Needs assessment
4. [Increase program assistance in parallel with rate increases](#)
(Council-directed addition to proposal)

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Agricultural Water Rates Taskforce

1. Board-appointed
2. [One-year appointment](#)
(Council-directed change from two-year appointment)
3. [Subject to Brown Act](#)
(Council-directed addition to proposal)
4. Quarterly updates to Council
5. WA-3 & WA-9 rate recommendation to Council by July 1, 2019
6. [Freezing current WA-3 and WA-9 rates until July 1, 2019](#)
(Council-directed change from system average rate increases)

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Responses to Council Questions

Responses to Questions from November 28, 2017 Workshop

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City Council Questions

1. 45 Questions/Comments Submitted by Six Council Members

2. Topics

- | | |
|--------------------------|------------------------------|
| a. Agriculture | h. Renewable Energy |
| b. Finance | i. Tiered and Seasonal Rates |
| c. General Fund Transfer | |
| d. Infrastructure | |
| e. Legal | |
| f. Overtime | |
| g. Presentation | |

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City Council Questions

- 1. Attachment 1: Staff Responses to City Council Questions**
 - a. Organized by Topic
 - b. Organized by Council Member
- 2. Attachment 2: Tiered and Seasonal Water Rates**
- 3. Attachment 4: Electric Utility Rate Alternatives – Project Impacts**
- 4. Attachment 5: Water Utility Rate Alternatives – Project Impacts**

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Modified Option 1 Rate Proposal

Utility 2.0 Modified Option 1 10-Year Electric and Water Infrastructure Plans

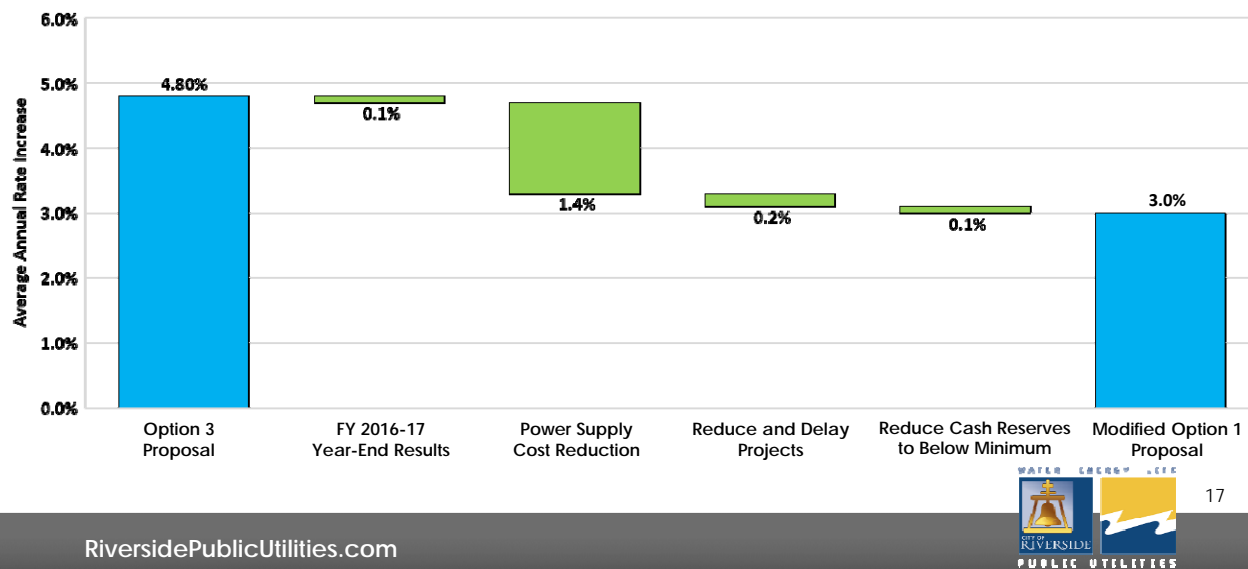
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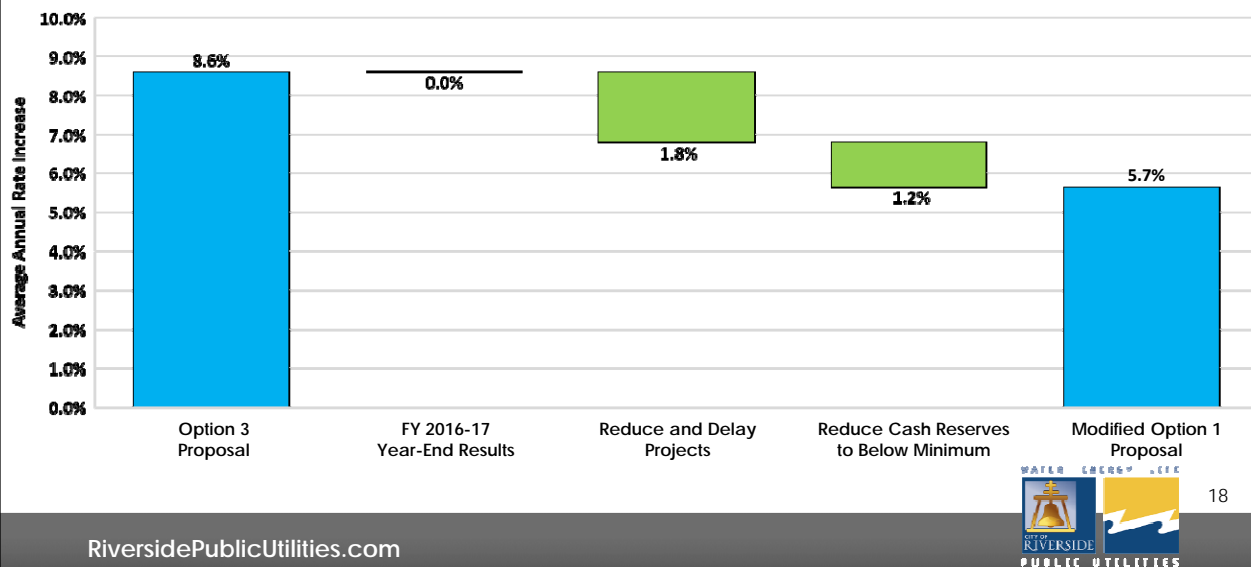
Electric Rate Proposal – What was reduced?

(Fewer projects stretched over a longer period of time – 37.5% decrease in rate proposal)



Water Rate Proposal – What was reduced?

(Fewer projects stretched over a longer period of time – 34% decrease in rate proposal)



Revised Rate Proposal – Modified Option 1

	Years 1-5 (2018-2022)		Years 6-10 Preview (2023-2027)
Electric	July 2018	2.95%	Estimated rate requirement Average annual 3.0%
	July 2019	3.0%	
	July 2020	3.0%	
	July 2021	3.0%	
	July 2022	3.0%	
Water	July 2018	4.50%	Estimated rate requirement Average annual 6.5%
	July 2019	5.75%	
	July 2020	5.75%	
	July 2021	5.75%	
	July 2022	6.50%	

Based on system average, rate increases vary by customer class and consumption levels.

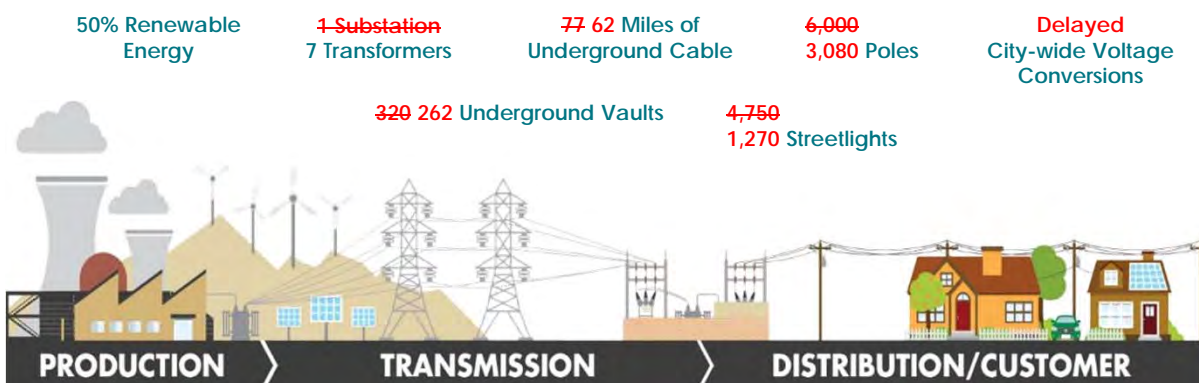
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Implementing Proposed 10-Year Electric Plan

Modified Option 1: “The \$5 \$3 Plan”



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Utility 2.0 10-Year Electric Plan

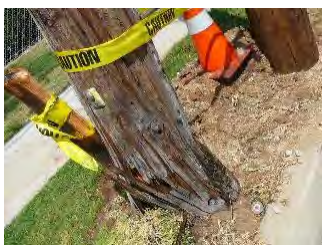
Project Category	Option 3	Modified Option 1	Reduction (\$)	Reduction (%)
1. Overhead Projects	\$150,800,000	\$89,208,000	-\$61,592,000	-41%
2. Underground Projects	\$154,423,000	\$139,326,000	-\$15,097,000	-10%
3. Substation Projects	\$98,102,000	\$88,100,000	-\$10,002,000	-10%
4. System Automation	\$108,300,000	\$96,574,000	-\$11,726,000	-11%
5. Recurring Projects	\$118,866,000	\$115,037,000	-\$3,829,000	-3%
Total:	\$630,491,000	\$528,245,000	-\$102,246,000	-16%
Rate Increase:	4.8%	3.0%		

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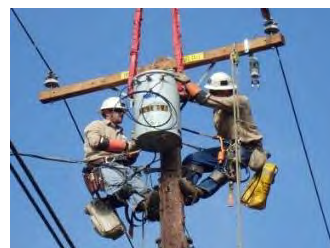


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1. Overhead Projects: \$89,208,000 10-Year Investment



- 1,270 street light retrofits
- 3,080 poles & related equipment
- 600 overhead switches replaced
- 12kV conversions in 6 years



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2. Underground Projects: \$139,326,000 10-Year Investment



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



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3. Substation Projects: \$88,100,000 10-Year Investment



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



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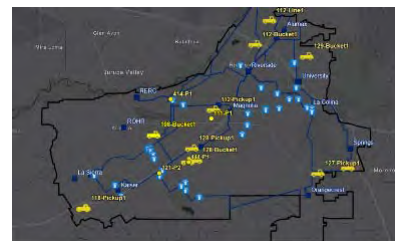
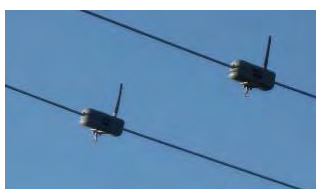


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4. System Automation: \$96,574,000 10-Year Investment



- LED Streetlight retrofit
- Electric vehicle charging stations
- Substation and distribution system monitoring and control



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5. Recurring Projects: \$115,037,000 10-Year Investment



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

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



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3.0% Electric Rate Increase

(Modified Option 1)

1. **Overhead (-\$62M)**
2. **Underground (-\$15M)**
3. **Substations (-\$10M)**
4. **Automation (-\$12M)**
5. **Recurring (-\$4M)**



Reduces Electric Pole Replacements

Reduces Neighborhood Streetlight Retrofits

Reduces Underground Conduit/Vault Replacements

Eliminates New Arlanza Substation

Eliminates GIS Integration, Customer Engagement Portal, Interactive Voice Response System

Delays Advanced Metering Infrastructure Deployment (Comm. & Industrial 1 year; Residential 2 years)

Impact: Reduced reliability balanced with increased affordability. Most vital infrastructure replaced at a sustainable rate.

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Estimated Residential Average Monthly Bill Increase for Each of the Next 5 Years

Estimated Residential 5 year Average Annual Price Change	Low-Use 355 kWh	Typical-Use 592 kWh	High-Use 1400 kWh
Electric	\$2.00 (3%)	\$3.10 (3%)	\$7.10 (3%)

Includes Public Benefits Charge and Water Conservation Surcharge

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Estimated Commercial Average Monthly Bill Increase for Each of the Next 5 Years

Estimated Commercial 5 year Average Annual Price Change	Small 500 kWh	Medium 2400 kWh	Large 8000 kWh
Electric	\$2.30 (2%)	\$10.80 (2%)	\$25.60 (2%)

Includes Public Benefits Charge and Water Conservation Surcharge

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Implementing Proposed 10-Year Water Plan

Modified Option 1: "The \$5 \$3 Plan"

3 1 Recycled Water 5 Wells ~~North Waterman~~ Treatment Plant 90 49 Miles of Distribution Pipeline 3 Pressure Stations
5 1 Storm Water Capture

5 3 Treatment Filter Replacements Replace Techite Pipe



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Utility 2.0 10-Year Water Plan

Project Category	Option 3	Modified Option 1	Reduction (\$)	Reduction (%)
1. Water Supply	\$96,558,000	\$10,791,000	-\$85,767,000	-89%
2. Water Treatment	\$19,748,000	\$1,296,000	-\$18,452,000	-93%
3. Well Projects	\$28,777,000	\$30,499,000	\$1,722,000	6%
4. Transmission Pipelines	\$77,338,000	\$65,823,000	-\$11,515,000	-15%
5. Distribution Pipelines	\$153,209,000	\$117,790,000	-\$35,419,000	-23%
6. Distribution Facilities	\$18,802,000	\$19,268,000	\$466,000	2%
7. Reservoir Projects	\$3,977,000	\$2,440,000	-\$1,537,000	-39%
8. System Automation	\$43,118,000	\$39,209,000	-\$3,909,000	-9%
Total:	\$441,527,000	\$287,116,000	-\$154,411,000	-35%
Rate Increase:	8.6%	5.7%		

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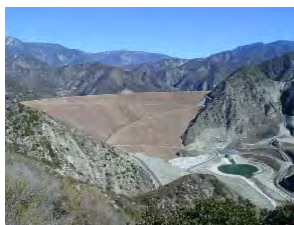


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1. Water Supply: \$10,791,000 10-Year Investment



- Recycled Water Phase 1
 - 600 acre feet new yield
- Seven Oaks Dam – Enhanced recharge project
 - 1,000 acre feet new yield



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



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

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3. Well Projects: \$30,499,000 10-Year Investment



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



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4. Transmission Pipelines: \$65,823,000 10-Year Investment



- Techite Pipeline Replacement
- Industrial Booster Station (Hunter Park) Pipeline
- Park Avenue Pipeline



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5. Distribution Pipelines: \$117,790,000 10-Year Investment



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



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6. Distribution Facilities: \$19,268,000 10-Year Investment



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

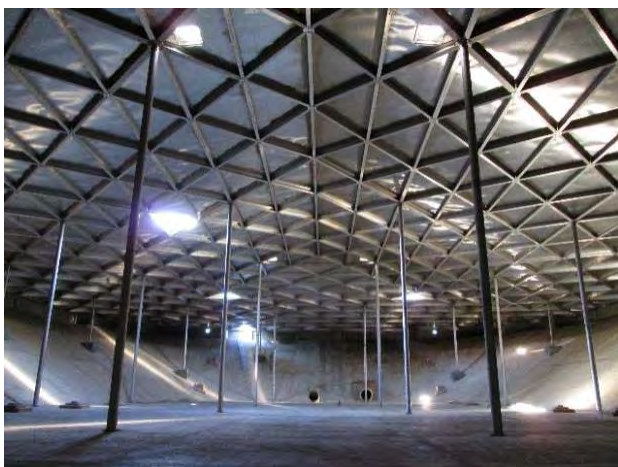


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7. Reservoir Projects: \$2,440,000 10-Year Investment



Capitalized maintenance on water storage reservoirs to secure and protect water quality.



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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

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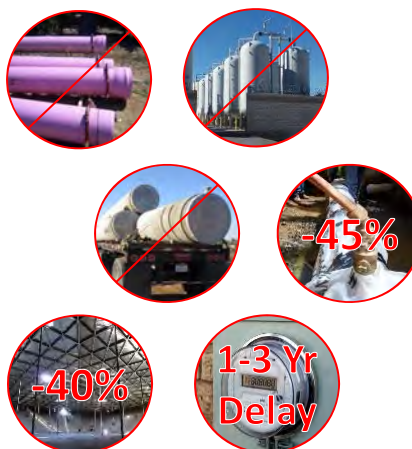


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5.7% Water Rate Increase

(Modified Option 1)

1. **Supply (-\$86M)**
2. **Treatment (-\$18M)**
3. **Wells**
4. **Transmission (-\$12M)**
5. **Distribution (-\$35M)**
6. **Reservoirs (-\$2M)**
7. **Automation (-\$4M)**



Eliminates Supply Projects and Treatment Plant
 Reduces JW North Filter Replacements
 Eliminates Victoria Ave. Transmission Main
 Reduces Pipe Replacement Rate to 170 Years
 Reduces Reservoir Maintenance
 Eliminates GIS Integrations, Customer Engagement Portal, Interactive Voice Response System
 Delays Advance Metering Infrastructure Deployment (Comm. & Industrial 1 year; Residential 3 years)

Impact: Reduced reliability balanced with increased affordability. Most vital infrastructure replaced at a sustainable rate.

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Estimated Residential Average Monthly Bill Increase for Each of the Next 5 Years

Estimated Residential 5 year Average Annual Price Change	Low-Use 12 CCF	Typical-Use 19 CCF	High-Use 29 CCF
Water	\$3.20 (10%)	\$3.50 (8%)	\$4.80 (6%)

Includes Public Benefits Charge and Water Conservation Surcharge

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Estimated Commercial Average Monthly Bill Increase for Each of the Next 5 Years

Estimated Commercial 5 year Average Annual Price Change	Small 10 CCF	Medium 37 CCF	Large 119 CCF
Water	\$3.40 (10%)	\$5.90 (7%)	\$17.40 (6%)

Includes Public Benefits Charge and Water Conservation Surcharge

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Estimated Residential Average Monthly Bill Increase for Each of the Next 5 Years

Estimated Residential 5 year Average Annual Price Change	Low-Use 355 kWh 12 CCF	Typical-Use 592 kWh 19 CCF	High-Use 1400 kWh 29 CCF
Electric	\$2.00 (3%)	\$3.10 (3%)	\$7.10 (3%)
Water	\$3.20 (10%)	\$3.50 (8%)	\$4.80 (6%)
Average Combined	\$5.20 (6%)	\$6.60 (5%)	\$11.90 (4%)

Includes Public Benefits Charge and Water Conservation Surcharge

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Estimated Commercial Average Monthly Bill Increase for Each of the Next 5 Years

Estimated Commercial 5 year Average Annual Price Change	Small 500 kWh 10 CCF	Medium 2400 kWh 37 CCF	Large 8000 kWh 119 CCF
Electric	\$2.30 (2%)	\$10.80 (2%)	\$25.60 (2%)
Water	\$3.40 (10%)	\$5.90 (7%)	\$17.40 (6%)
Average Combined	\$5.70 (4%)	\$16.70 (3%)	\$43.00 (3%)

Includes Public Benefits Charge and Water Conservation Surcharge

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Why Modified Option 1?

1. Minimum Investments in Electric/Water Infrastructure

- a. Staff recommends Utility 2.0 Modified Option 1 as the lowest-cost 10-year infrastructure plan
- b. **Any less infrastructure investments will have a negative impact on system reliability, resulting in significant costs to future ratepayers**

2. Minimum Financial Health of Utilities

- a. Staff recommends Utility 2.0 Modified Option 1 to maintain reserves at lowest levels allowed under Council-approved policies
- b. **Any lower reserves will have a negative impact on bond ratings, resulting in significant costs to future ratepayers**

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Risks with Modified Option 1 Rate Plan

- 1. Revised rate plan reduces resiliency and increases risk
- 2. Replacement rates for poles and pipes declines and is not sustainable
 - a. No anticipated immediate impacts
 - b. Long term replacement rate must be changed to meet expected life of these assets
- 3. More repairs moved to reactive and emergency basis – longer service interruptions
- 4. Infrastructure that leaves our community most vulnerable, such as transmission lines and substations, are replaced at sustainable rate

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THE PRESS-ENTERPRISE

December 8, 2017

Blown water main in Riverside shuts down 3rd Street near 215 Freeway



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Next Steps

Staff recommendations to advance the proposal

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Next Steps

Activity	Date
RPU/City Council Joint Workshop	January 18, 2018
Update Rate Schedules Based on Revised Revenue Requirements and Effective Dates	February 2018
Public Hearing before Board of Public Utilities	May 14, 2018
City Council consideration of Rate Recommendations	May 22, 2018
Rates Effective	July 1, 2018

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Revised Rate Proposal – Modified Option 1

	Years 1-5 (2018-2022)	
Electric	July 2018	2.95%
	July 2019	3.0%
	July 2020	3.0%
	July 2021	3.0%
	July 2022	3.0%
Water	July 2018	4.50%
	July 2019	5.75%
	July 2020	5.75%
	July 2021	5.75%
	July 2022	6.50%

Based on system average, rate increases vary by customer class and consumption levels.

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Recommendations

That the City Council and Board of Public Utilities:

1. Receive staff's presentation with additional requested information regarding the electric and water utility five-year rate proposal 2018-2022;
2. 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 ten years, with rates approximately 35% lower than the original five-year rate proposal based on Option 3 infrastructure improvements; and
3. Direct staff to prepare all documents necessary for public noticing of the rate proposal, to update proposed rate schedules and fiscal policies to reflect changes due to the rate proposal, and to update any other documents necessary for the public hearing to be held before the Board of Public Utilities on May 14, 2018 and final rate recommendations to the City Council on May 22, 2018, with new rates effective July 1, 2018.

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Supplemental Information

Customer Impacts

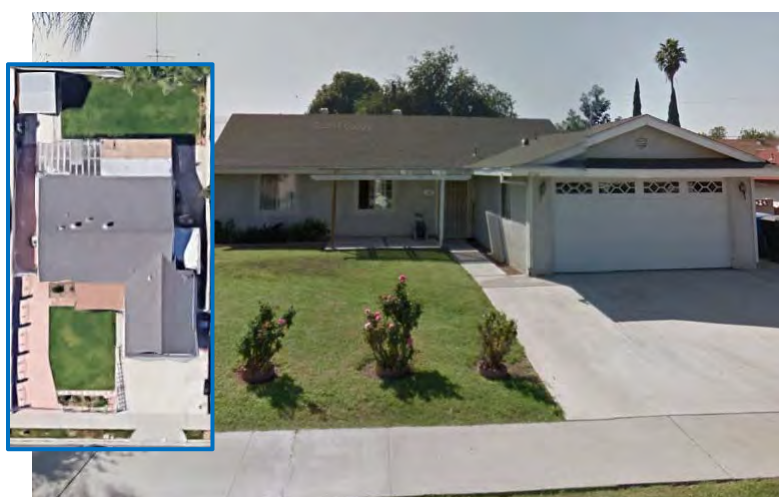
Rate proposal impacts on different types of customers and usage patterns

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Typical Residential Customer



Estimated

Average Annual Monthly Bill Increase

Water:

\$3.30 for 18 ccf

Electricity:

\$2.90 for 575 kWh

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Low Water/Electricity Use Residential Customer



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Estimated

Average Annual Monthly Bill Increase

Water:

\$2.80 for 6 ccf

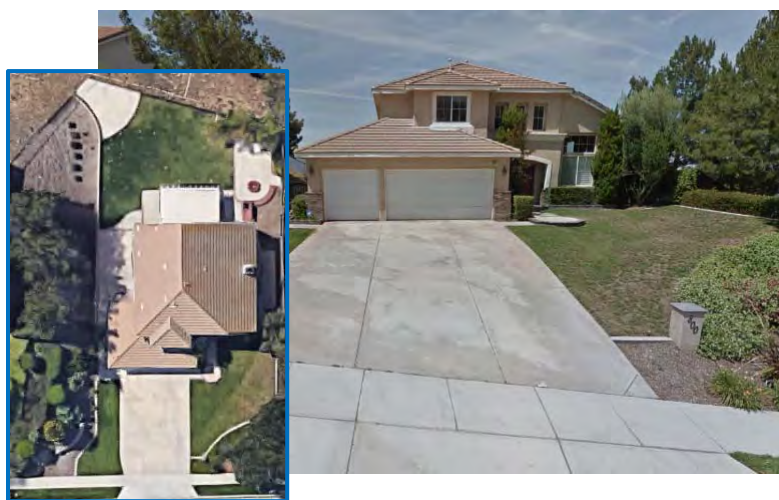
Electricity:

\$1.90 for 238 kWh



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High Water/Electricity Use Residential Customer



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Estimated

Average Annual Monthly Bill Increase

Water:

\$6.90 for 44 ccf

Electricity:

\$5.80 for 1,047 kWh



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Small Neighborhood Restaurant



Estimated

Average Annual Monthly Bill Increase

Water:

\$5 for 45 ccf

Electricity:

\$8 for 2,144 kWh

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Mid-Size Restaurant



Estimated

Average Annual Monthly Bill Increase

Water:

\$7 for 57 ccf

Electricity:

\$26 for 8,140 kWh

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Large Restaurant



Estimated

Average Annual Monthly Bill Increase

Water:

\$17 for 238 ccf

Electricity:

\$181 for 44,593 kWh

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Full Service Hotel



Estimated

Average Annual Monthly Bill Increase

Water:

\$57 for 1,309 ccf

Electricity:

**\$935
for 218,360 kWh**

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Manufacturer



Estimated

Average Annual Monthly Bill Increase

Water:

\$97 for 4,019 ccf

Electricity:

**\$3,389
for 688,800 kWh**

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Warehouse/Distribution



Estimated

Average Annual Monthly Bill Increase

Water:

\$23 for 443 ccf

Electricity:

**\$934
for 200,975 kWh**

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Large Medical



Estimated
Average Annual
Monthly Bill Increase

Water:
\$125 for 2,576 ccf

Electricity:
\$3,293
for 812,600 kWh

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Small Office



Estimated
Average Annual
Monthly Bill Increase

Water:
\$3 for 7 ccf

Electricity:
\$10 for 2,180 kWh

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Large Office



Estimated

Average Annual Monthly Bill Increase

Water:

\$18 for 127 ccf

Electricity:

\$155 for 35,880 kWh

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Large Retail



Estimated

Average Annual Monthly Bill Increase

Water:

\$29 for 292 ccf

Electricity:

**\$1,730
for 253,933 kWh**

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Alternatives and Risks

Rate alternatives and associated risks

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3.0% Electric Rate Increase

(Modified Option 1)

1. **Overhead (-\$62M)**
2. **Underground (-\$15M)**
3. **Substations (-\$10M)**
4. **Automation (-\$12M)**
5. **Recurring (-\$4M)**



Reduces Electric Pole Replacements

Reduces Neighborhood Streetlight Retrofits

Reduces Underground Conduit/Vault Replacements

Eliminates New Arlanza Substation

Eliminates GIS Integration, Customer Engagement Portal, Interactive Voice Response System

Delays Advanced Metering Infrastructure Deployment (Comm. & Industrial 1 year; Residential 2 years)

Impact: Reduced reliability balanced with increased affordability. Most vital infrastructure replaced at a sustainable rate.

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2.9% Electric Rate Increase

1. Overhead (-\$62M)
2. Underground (-\$15M)
3. Substations (-\$10M)
4. **Automation (-\$21M)**
5. Recurring (-\$4M)



**Eliminates
Residential "Smart" LED
Street Lighting System**

Impact: Shifts use of carbon reduction credits from LED streetlights to renewable energy. Loss of public safety, aesthetic benefits for most neighborhoods.

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2.8% Electric Rate Increase

1. Overhead (-\$62M)
2. Underground (-\$15M)
3. Substations (-\$10M)
4. **Automation (-\$27M)**
5. Recurring (-\$4M)



**Eliminates
Residential &
Arterial "Smart" LED
Street Lighting System**

Impact: Shifts use of all carbon reduction credits from LED streetlights to renewable energy. Loss of public safety, aesthetic benefits for entire city.

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2.7% Electric Rate Increase

1. Overhead (-\$62M)
2. Underground (-\$15M)
3. Substations (-\$10M)
4. **Automation (-\$37M)**
5. Recurring (-\$4M)



Reduces Outage Management
Delays and Extends Advanced Metering Infrastructure

Impact: Reduces ability to predict and detect outages automatically. Reduces customer and operational benefits.

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2.6% Electric Rate Increase

1. Overhead (-\$62M)
2. Underground (-\$15M)
3. Substations (-\$10M)
4. **Automation (-\$43M)**
5. Recurring (-\$4M)



Eliminates Outage Management
Eliminates Operational Data Management

Impact: Eliminates ability to predict and detect outages automatically. Loss of operational benefits of data integration to support utility reporting/compliance.

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2.5% Electric Rate Increase

1. Overhead (-\$62M)
2. Underground (-\$15M)
3. Substations (-\$10M)
4. **Automation (-\$49M)**
5. Recurring (-\$4M)



Impact: Further reduces and delays customer and operational benefits.

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73

5.7% Water Rate Increase

(Modified Option 1)

1. **Supply (-\$86M)**
2. **Treatment (-\$18M)**
3. Wells
4. **Transmission (-\$12M)**
5. **Distribution (-\$35M)**
6. **Reservoirs (-\$2M)**
7. **Automation (-\$4M)**



Impact: Reduced reliability balanced with increased affordability. Most vital infrastructure replaced at a sustainable rate.

Eliminates Supply Projects and Treatment Plant
 Reduces JW North Filter Replacements
 Eliminates Victoria Ave. Transmission Main
 Reduces Pipe Replacement Rate to 170 Years
 Reduces Reservoir Maintenance
 Eliminates GIS Integrations, Customer Engagement Portal, Interactive Voice Response System
 Delays Advance Metering Infrastructure Deployment (Comm. & Industrial 1 year; Residential 3 years)

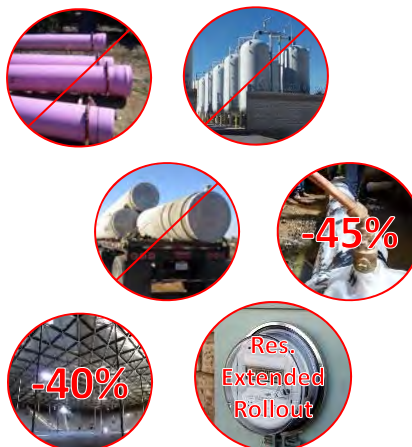
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74

5.5% Water Rate Increase

1. Supply (-\$86M)
2. Treatment (-\$18M)
3. Wells
4. Transmission (-\$12M)
5. Distribution (-\$35M)
6. Reservoirs (-\$2M)
7. **Automation (-\$6M)**



Extends Residential Advanced Metering Infrastructure Rollout to 7 Years; Scope Reduced by 12%

Eliminates Work, Asset and Inventory Management Systems

Eliminate Future Phases of Operations Data Management System

Reduced SCADA Network Communications

Impact: Reduces or eliminates customer and operational benefits. Reduces reliability, increases operating costs, and lengthens repair cycle times.

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75

5.0% Water Rate Increase

1. Supply (-\$86M)
2. Treatment (-\$18M)
3. Wells
4. Transmission (-\$12M)
5. Distribution (-\$35M)
6. Reservoirs (-\$2M)
7. **Automation (-\$13M)**



Delays Residential Advanced Metering Infrastructure by 5 Years; Scope Reduced by 13%

Eliminate Mobile Applications

Impact: Delays, reduces, and eliminates customer and operational benefits. Continues reliance on paper and inefficient manual processes.

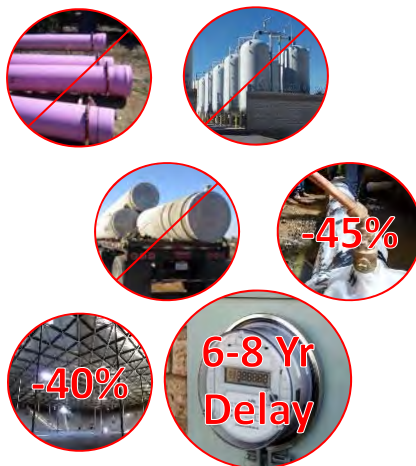
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76

4.5% Water Rate Increase

1. Supply (-\$86M)
2. Treatment (-\$18M)
3. Wells
4. Transmission (-\$12M)
5. Distribution (-\$35M)
6. Reservoirs (-\$2M)
7. **Automation (-\$20M)**



**Delays Comm. & Industrial
Advanced Metering
Infrastructure by 6 Years**

**Delays Residential
Advanced Metering
Infrastructure by
8 Years; Scope Reduced by
46%**

Impact: Further delays and significantly reduces customer and operational benefits.

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77

4.0% Water Rate Increase

1. Supply (-\$86M)
2. Treatment (-\$18M)
3. Wells
4. Transmission (-\$12M)
5. **Distribution (-\$38M)**
6. Reservoirs (-\$2M)
7. **Automation (-\$26M)**



**Reduces Pipe Replacement
Rate to 180 Years**

**Delays Comm. & Industrial
Advanced Metering
Infrastructure by 7 Years**

**Delays Residential
Advanced Metering
Infrastructure by
10+ Years; Scope Reduced
by 82%**

**Delay SCADA Network
Communications**

Impact: More reduced reliability. Further delays and significantly reduces customer and operational benefits.

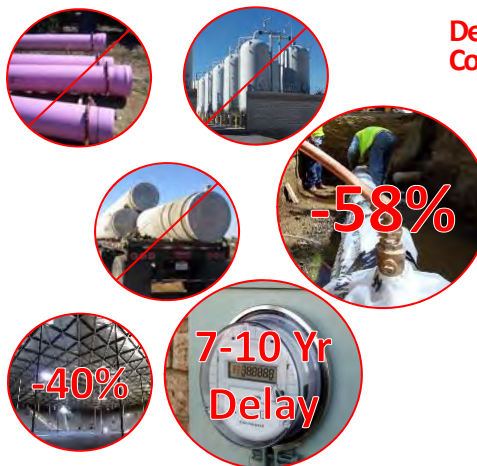
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78

3.5% Water Rate Increase

1. Supply (-\$86M)
2. Treatment (-\$18M)
3. Wells
4. Transmission (-\$12M)
5. **Distribution (-\$54M)**
6. Reservoirs (-\$2M)
7. **Automation (-\$28M)**



Reduces Pipe Replacement Rate to 220 Years

Delay SCADA Network Communications

Impact: Severely reduced reliability. Further reduces customer and operational benefits.

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79

3.0% Water Rate Increase

1. Supply (-\$86M)
2. Treatment (-\$18M)
3. Wells
4. **Transmission (-\$25M)**
5. **Distribution (-\$56M)**
6. Reservoirs (-\$2M)
7. **Automation (-\$31M)**



Reduces Pipe Replacement Rate to 230 Years

Reduces Techite Pipe Replacement by 1.4 miles

Eliminates Residential Advanced Metering Infrastructure

Impact: More severely reduced reliability. Risk of losing groundwater transmission pipes, requiring expensive imported water.

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80

2.5% Water Rate Increase

1. Supply (-\$86M)
2. Treatment (-\$18M)
3. Wells
4. **Transmission (-\$32M)**
5. **Distribution (-\$63M)**
6. Reservoirs (-\$2M)
7. Automation (-\$31M)



Reduces Pipe Replacement Rate to 270 Years

Reduces Techite Pipe Replacement by 2.2 miles

Impact: Unacceptably reduced reliability. Significant risk of losing groundwater transmission pipes, requiring expensive imported water.

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Tiered and Seasonal Water Rates

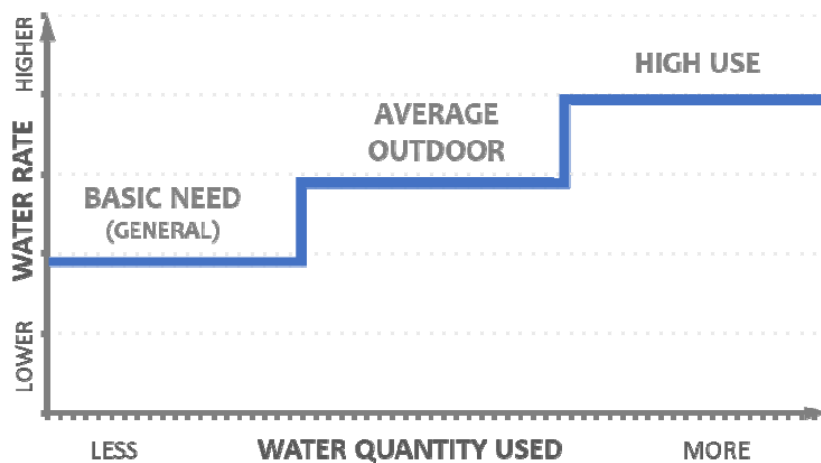
Inclining Tiered Rates, Seasonal Pricing, and Budget-Based Tiered Rates

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Inclining Tiered Rates

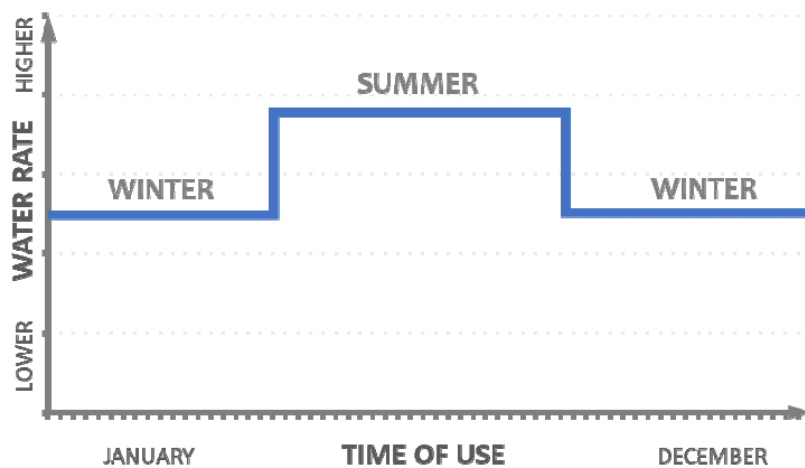


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Seasonal Pricing

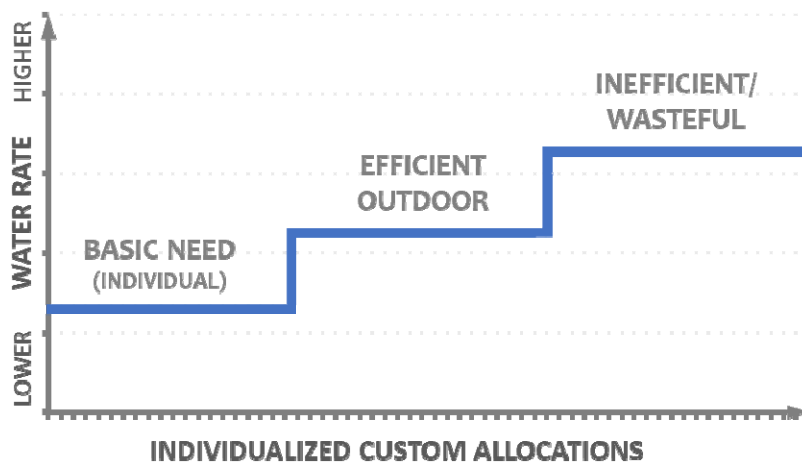


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Budget-Based Tiered Rates

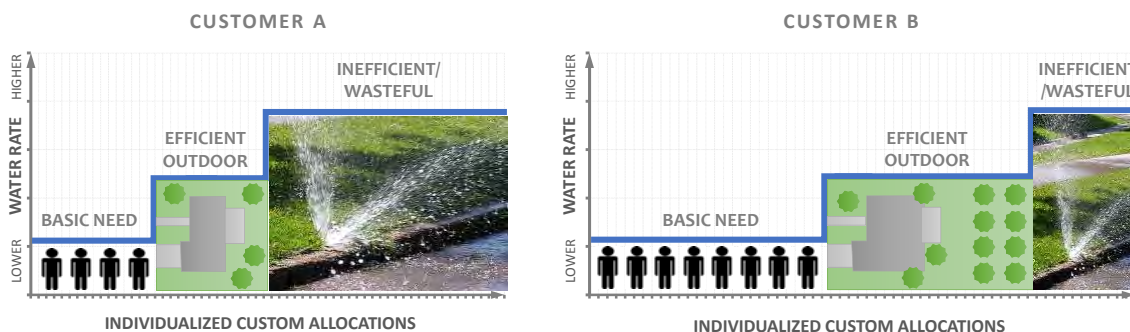


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Budget-Based Tiered Rates



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