2018 Carbon Policy Update

July 25th, 2018

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Agenda

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1. Background and key findings from the January 10, 2018, Utility Board study session presentation on carbon reduction policies

2. Review ballot *Initiative 1631 – Carbon Pollution Fee* and Tacoma Power economic impacts analysis

3. 2018 Legislative Session Overview

4. Discussion of 100% Clean Electricity Standard framework

5. Final thoughts and discussion

6. Seek advice on format for August 21 Joint Study Session electric sector carbon policy update with Tacoma City Council

Background

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January 10, 2018, study session:

- Presentation on the *2017* Energy + Environmental Economics (*E3) Least-Cost Carbon Emissions Reductions in the Electricity Sector* study:
  - E3 is a prominent energy consulting firm that helps utilities, regulators, policy makers, developers, and investors make the best strategic decisions possible as they implement new public policies, respond to technology advances, and address customers' shifting expectations

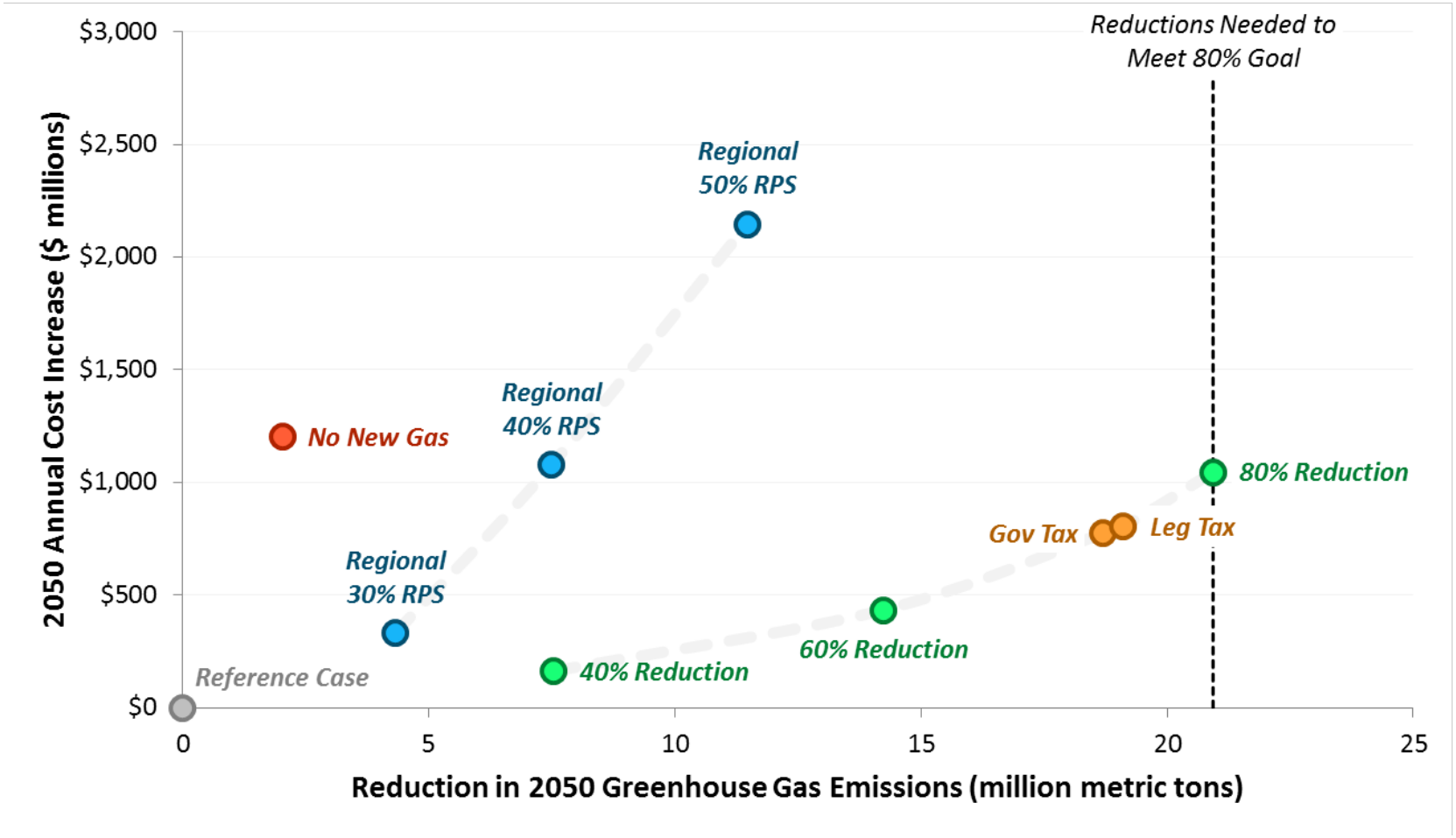
"Stakeholder of all stripes rely on E3's rigorous, unbiased analysis to inform public policy discussions"

Ralph Cavanagh, Energy Program Coordinator, National Resource Defense Council

  - Washington and Oregon footprint
  - **Key takeaway -- Among the policy options available (RPS, no new gas, tax), a price on carbon in the electric sector is by far the least-cost and most effective for achieving carbon emission reduction goals**

Cost & Emissions Impacts Summary

Energy+Environmental Economics



Note: Reference Case reflects current industry trends and state policies, including Oregon's 50% RPS goal for IOUs and Washington's 15% RPS for large utilities

Background Continued

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- Discussed potential impacts of state energy policy (RPS or carbon tax)on Tacoma Power
  - Tacoma Power analysis :
    - Evaluated potential effects of regional energy policy
    - Based upon 2017 E3 Study (WA/OR) and 2017 BPA Sensitivity Analysis (Regional)
  - Key takeaway: A carbon tax, a market-based carbon regulation approach, is a win-win-win-win for the environment, Tacoma Power, its customers, and the City of Tacoma
    - A market-based approach (such as a carbon tax) directly prices a negative externality, incentivizing reductions. A standard-based approach (such as an RPS) indirectly encourages carbon reduction through investment in eligible renewable resources
    - A carbon tax incentivizes investment in new renewable resources while still preserving the current RPS
    - A carbon tax helps reduce Bonneville Power Administration (BPA) rate increases, passing saving on to Tacoma Power customers
    - A price on carbon helps financially justify Tacoma Power's pursuit of beneficial electrification and environmentally-friendly programs and projects. Electric vehicle ownership becomes more cost-effective under a carbon tax
    - A carbon tax increases Tacoma Power's wholesale revenues, which helps mitigate upward rate pressure

Carbon Price Policy in 2018

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WA Ballot Initiative 1631: Carbon Fee

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Status:

- I-1631 proponents gathered more than 370,000 signatures , which is sufficient to put the initiative on the November ballot

Summary:

- I-1631 would create an economy-wide escalating Washington carbon "fee" beginning January 1, 2020, on most fossil fuel emissions
- The fee would start at $15 per metric ton of carbon emissions in 2020, then rises $2 + inflation until 2035. Price freezes in 2035 if GHG statutory limits are met
- Pollution fees collected would be deposited in the Clean Up Pollution Fund under three accounts
  - 70% allocation for clean air and clean energy investments
  - 25% allocation for clean water and healthy forests investments
  - 5% allocation for healthy communities investments
- The Governor would appoint a 15-member public oversight board, and three advisory panels on 1). clean air/clean energy programs, 2).healthy forests/clean water programs, and 3). Environmental and economic justice programs to oversee the allocation of fee revenue

WA Ballot Initiative 1631: Carbon Fee

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100% utility retained pollution fees:

- Electric and gas utilities may claim credits for up to 100 % of pollution fees for use on qualified GHG reduction activities
- Public utilities must develop a Clean Energy Investment Plan and gain Department of Commerce approval
- Provides new opportunities to do things the utility may not be able to do now (lack of authority, lack of federal tax incentives, non-cost effective, etc.)
- Eligible investments include, but are not limited to:
  - Investments to directly reduce energy burden on low-income households (minimum of 15%)
  - Programs, activities, or projects that reduce transportation-related carbon emissions
  - Programs, activities or projects that improve energy efficiency, including demand side management, district energy, and investment in market transformation of energy efficiency projects.
  - Programs, activities, or projects to deploy eligible renewable resources

WA Ballot Initiative 1631: Carbon Fee

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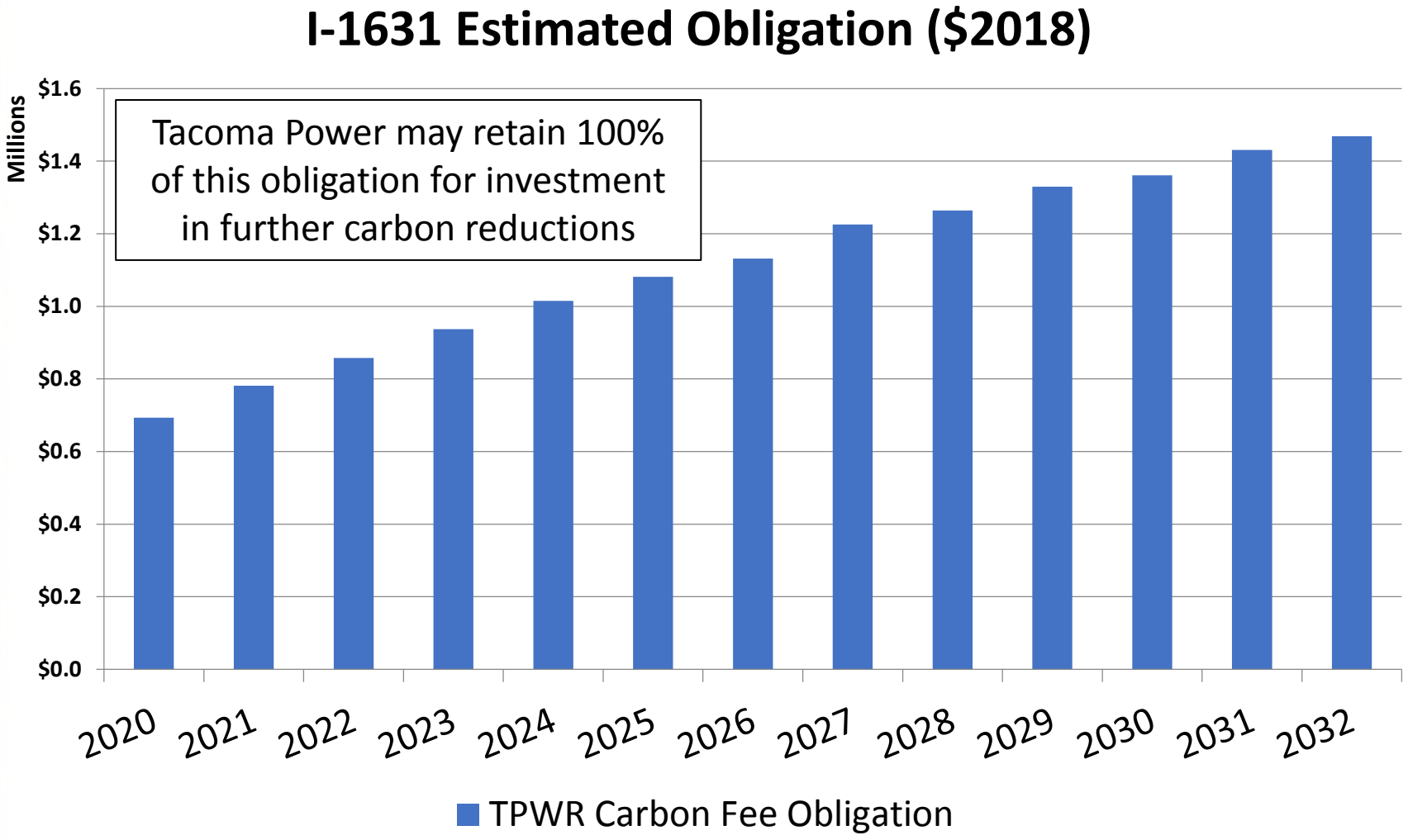

WA Ballot 1631 – Analysis

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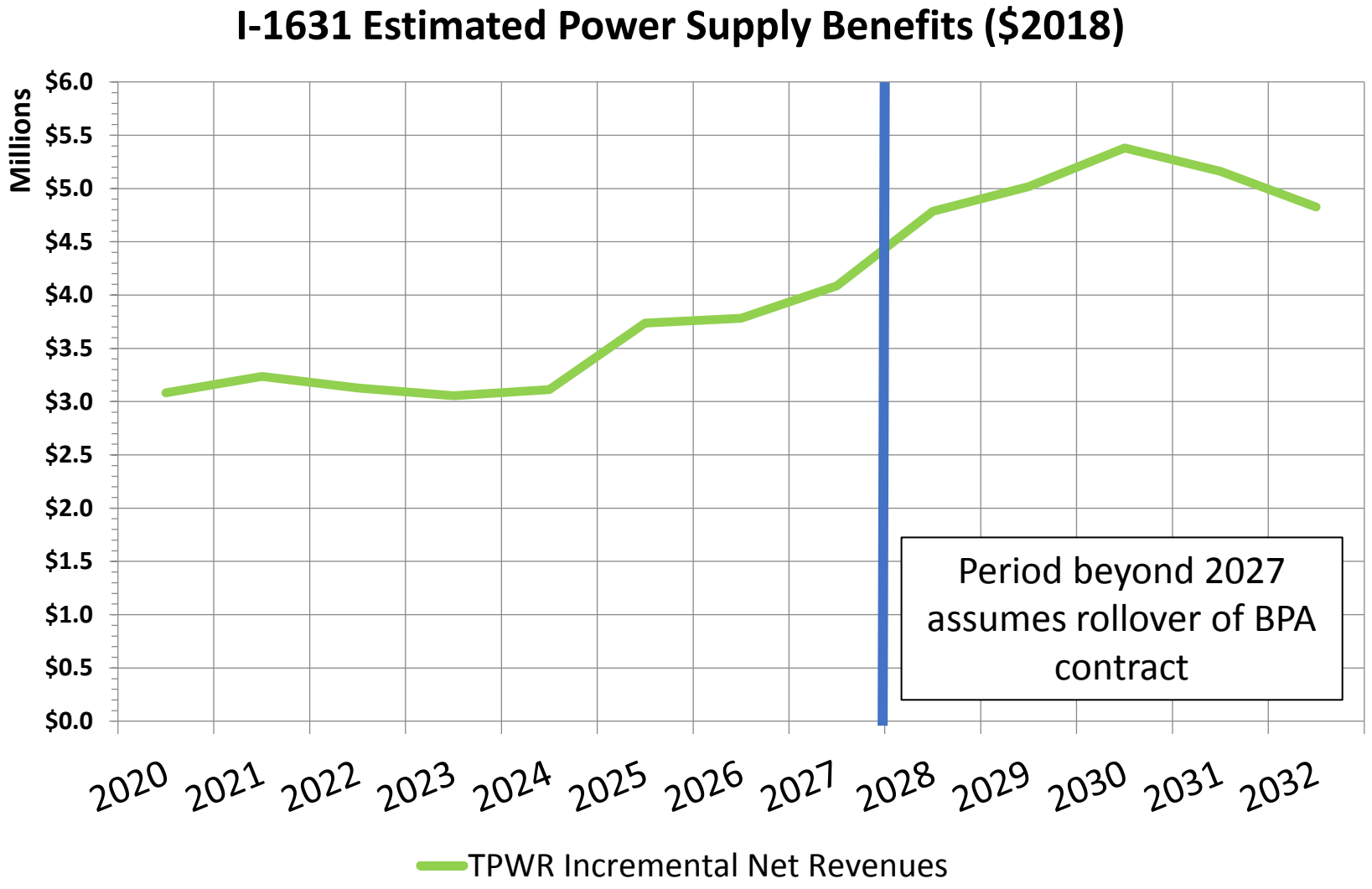

2018 Session: Carbon Tax and 100% Clean Electricity

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2018 Legislative Session Overview

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Governor's Carbon Tax bill: Senate Bill 6203

- TPU/Tacoma Power supported the development and advancement of SB 6203 through the legislative process
- Inclusive process, allowing utilities to help draft language pertaining to the electric sector to ensure the desired outcome was achieved
- Utilities helped draft language regarding application of carbon tax to electric sector in order to ensure optimal impact of policy
- TPU/Tacoma Power joined Seattle City Light as one of only two public utilities to publically support SSB 6203
- Bill continued to move along in the process, but with less than two weeks remaining in the legislative session was declared "dead" by Governor Inslee and the bill's sponsors due to lack of votes
- The Governor and some legislators quickly pivoted towards passing an environmental bill that did not include a tax, "100% Clean Electricity" was amended onto SHB 2995, without adequate dialogue or time to analyze its impacts to ratepayers or reliability

100% Clean Electricity Policy Framework

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- Eliminate the use of fossil fuels in electricity delivered to customers by setting reduction targets (based on 2017 megawatt-hour baseline) backed by financial penalties enforced by Dept. of Commerce.
- Distribution of penalty monies:
  - 1/3 for projects mitigating impacts on low-income electricity customers
  - 2/3 for projects that assist utilities in meeting carbon reduction targets

Year	Fossil Fuel Reduction Requirement	Penalty for exceeding ($/MWh)
2030	Coal Phase Out from Rates	N/A
2030	25%	$50
2035	50%	$50
2040	75%	$75
2045	100%	$100

Utility Response to SHB 2995

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Tacoma Power was not supportive of SHB 2995 moving forward in the final two weeks of the legislative session:

- The bill would have put in place a large, long-term shift in state energy policy without a holistic evaluation of effects and potential outcomes
- The bill had a very limited public hearing process due to being advanced with less than two weeks remaining in the session
- Not a multi-sector approach, with little to no nexus to decreasing other sector emissions. Does not address emissions before 2030, and does not place an explicit price on carbon emissions
- BPA expressed significant concerns about the potential of the bill to jeopardize reliable electric service in Washington both in testimony and in written correspondence to the legislature
- **TPU/Tacoma Power offered amendment language AND asked for an interim process to review the concept among others in a detailed, analytical context**

- Staff believes SB 6203 was most consistent with TPU's Legislative Policy on proposals for GHG emission reductions:

"TPU supports proposals for greenhouse gas emissions reduction that achieve the **most efficient carbon emission reduction at the least cost to utility customers**, **and are market based, economy wide, and coordinated with regional or national strategies**."

Further Thoughts on SHB 2995

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- Current analytical work indicates this approach is a much more expensive and less effective way to reduce carbon
- Tacoma Power does not own any fossil fuel resources. However, under this policy framework we would still be subject to penalties based on an estimated 2.4% of electricity delivered to customers coming from non-carbon free sources
- Preliminary analysis indicated that Tacoma Power would pay an estimated $1 million in penalties beginning in 2030 increasing to as much a $9 million per year in 2045
- Penalty mechanism central to bill treats all carbon-intensive generating technologies equally, despite disparate emissions rates
- Unlike the Governor's carbon tax bill and the pending ballot initiative (I-1631), does not return penalty monies to utilities for the purposes of carbon reduction investment, e.g., electrification of transportation
- BPA power is near 100% carbon-free, but not 100% mainly due to market purchases. These penalties make BPA contract renewal less economic. ~50-60% of our current portfolio comes from BPA
- Amidst significant electricity market transformation, we are concerned about this policy's impacts on regional marketing and trading functionality and liquidity

100% Clean Electricity

Interim Work

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Interim Discussion, Processes

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- **2018 E3 study sponsors are sharing updated low-carbon scenario analysis information with policymakers and key stakeholders**
- **Multiple groups of stakeholders are looking at 100% Clean Electricity or alternative policies, including several State Senators and Representatives, the environmental community, and utilities**
- **The Governor has begun convening stakeholders to find a single path forward for the 2019 legislative session**
- **Tacoma Power and TPU Government Relations are actively engaged in multiple interim discussions**

"100% Clean Electricity"

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The Definition of 100% is Important: there are different ways to define a 100% standard for the electric sector. Reliability and costs impacts between the two are quite different.

SHB 2995 Definition	Standard RPS-style/Carbon-Free Definition
Zero carbon content energy must be used to serve demand in Washington in every hour	Renewable or zero-carbon generation credit >= demand as measured over a year

- **Absolute Zero Carbon: The E3 analysis follows the definitions used in SHB 2995, which set a regulatory standard of zero carbon used to serve electricity demand in WA.**
  - TPWR Estimated Penalties: $1 to $9 million annually ($2018 real dollars)
- **Net Zero Carbon : The more prevalent measurement used in RPS or corporate "100% renewable" or "carbon free" goals. Renewable or zero-carbon energy is netted over a year to be equal to or greater than energy used. This definition recognizes that during some hours some demand may be served with thermal content energy, but is offset by renewable or zero carbon energy in other hours.**
  - No compliance cost (TPWR already meets this standard)

2018 E3 Follow-up Studies

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E3 has completed follow-up studies individually sponsored by three organizations to explore specific question left unanswered by the original 2017 study

- Public Generating Pool, Climate Solutions, National Grid

PGP sponsored additional studies exploring the means for and cost of achieving additional CO2 emissions reductions beyond the 80% goal assumed in the original study:

- 90%, 95% and 100% GHG emissions reductions with varying quantity and price of carbon-free biogas as a substitute for fossil natural gas

Climate Solutions sponsored additional studies exploring 100% GHG emissions reductions:

- With and without biogas and small modular nuclear reactors (SMR), under alternative technology costs, and with a ceiling or "off-ramp" on compliance costs

National Grid sponsored additional studies exploring the potential role for pumped hydro storage:

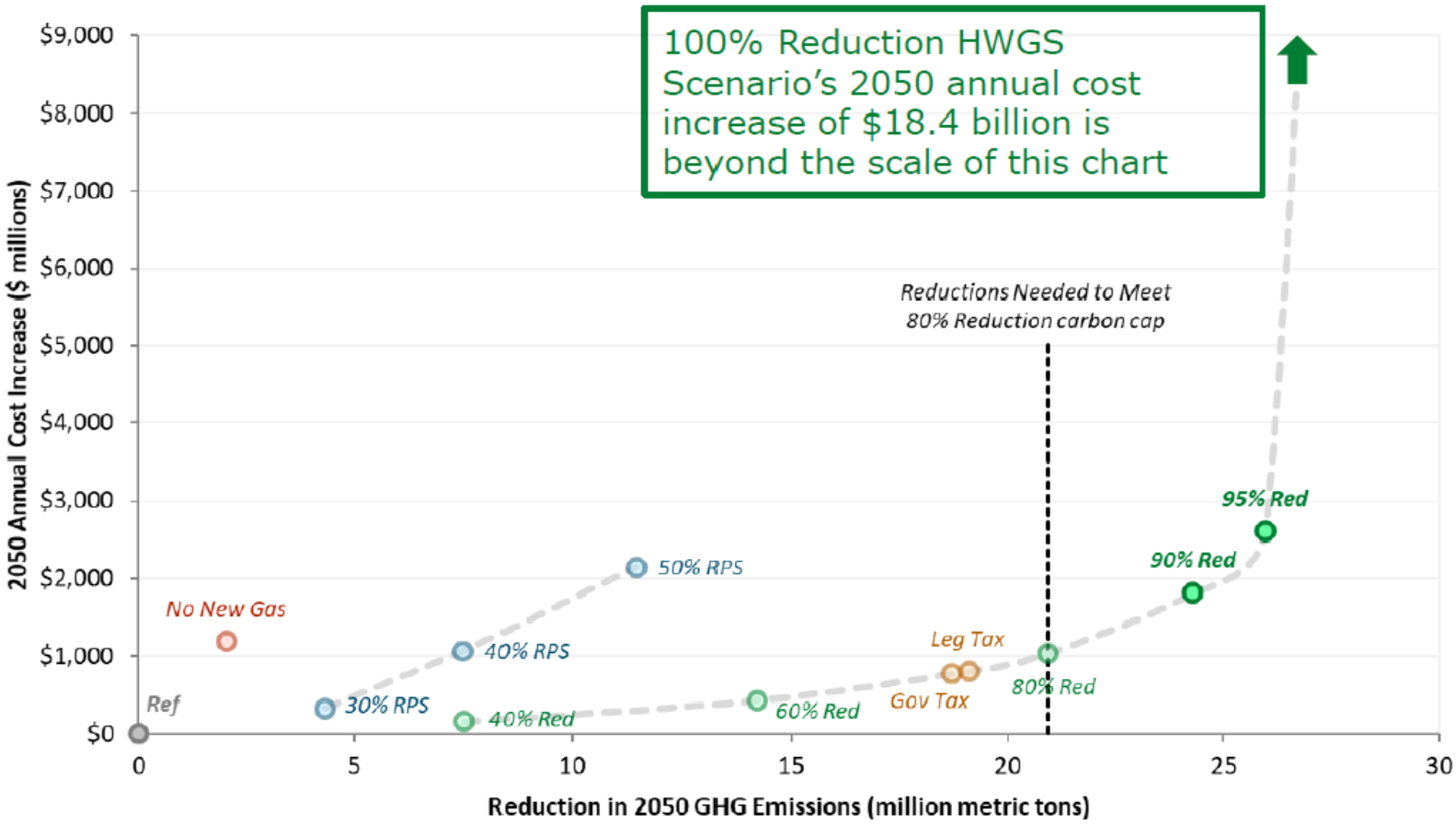
- Alternative assumptions about the cost of new pumped hydro facilities and new gas-fired generation, and accelerated coal retirement

All scenarios assume pollution fee retention by utilities

Cost & Emission Impacts Study

Energy+Environmental Economics

E3 2018 Study – Additional Carbon Cap Scenarios



Note: Reference Case reflects current industry trends and state policies, including Oregon's 50% RPS goal for IOUs and Washington's 15% RPS for large utilities

Final Thoughts

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- **Carbon Policy is complex and the details and implementation are crucial to success**
  - "Small" differences in language can have large financial, operational and environmental implications for customers
- **Tacoma Power is committed to ongoing discussions to find workable, effective, and efficient approaches to achieving deep, economy-wide decarbonization. We do not believe "100% Clean Electricity" proposals we have seen meet this standard**
- **A direct price on carbon is the most efficient, effective way to reduce carbon emissions across all sectors of the economy, and does so in a way that benefits our customers**

Next Steps

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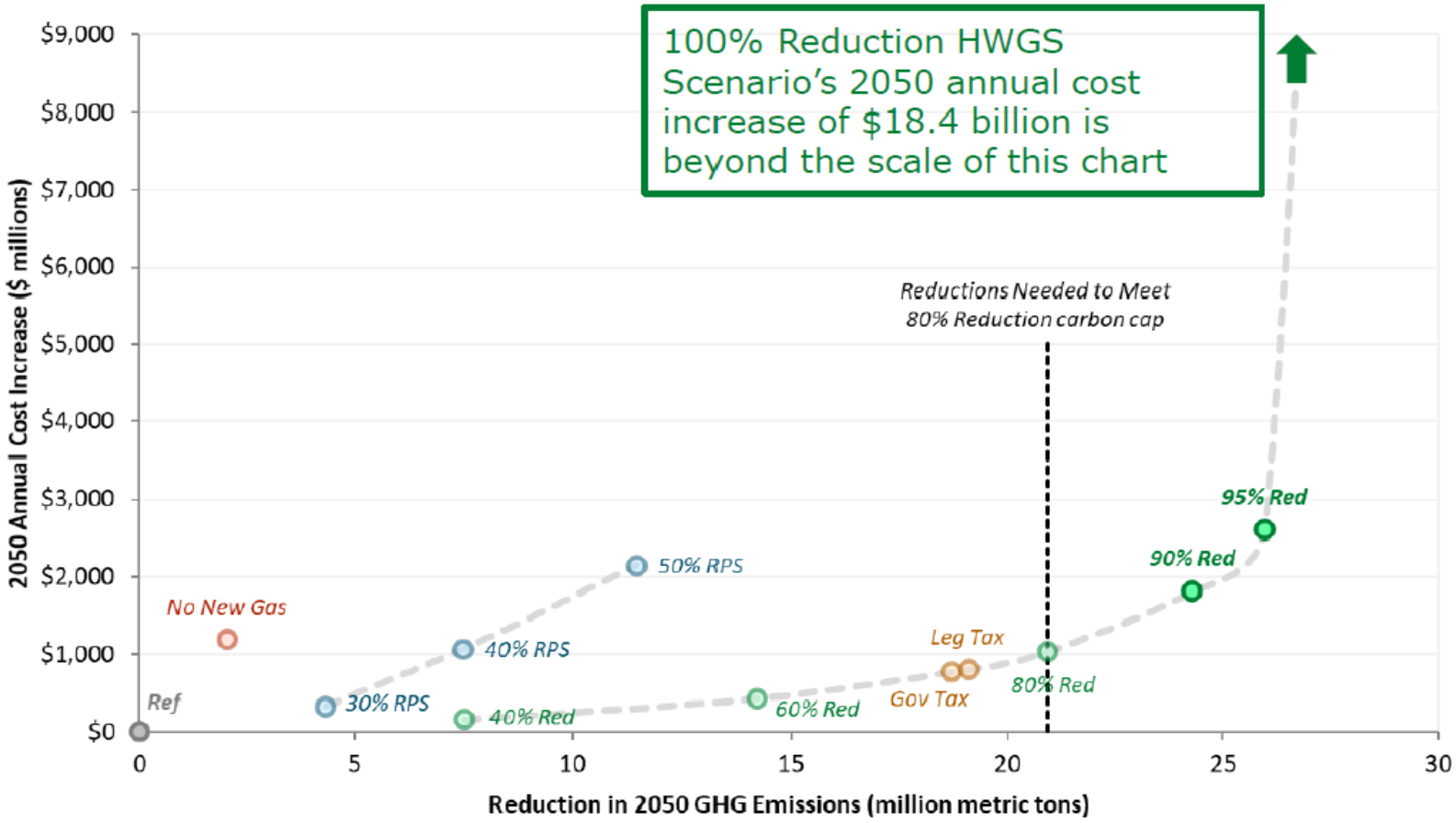
- For August 21 Joint Study Session with Tacoma City Council, please advise on:
  - Arne Olson presentation of 2018 updated E3 Low Carbon Analysis
  - Format/Focus
- Legal guidance on ballot initiative
- Continue to work with other utilities, environment community, and policy-makers on carbon legislation proposals
- Nov 6th: General Election

Discussion / Further Questions

Energy+Environmental Economics



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Appendix

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About the 2017 Study

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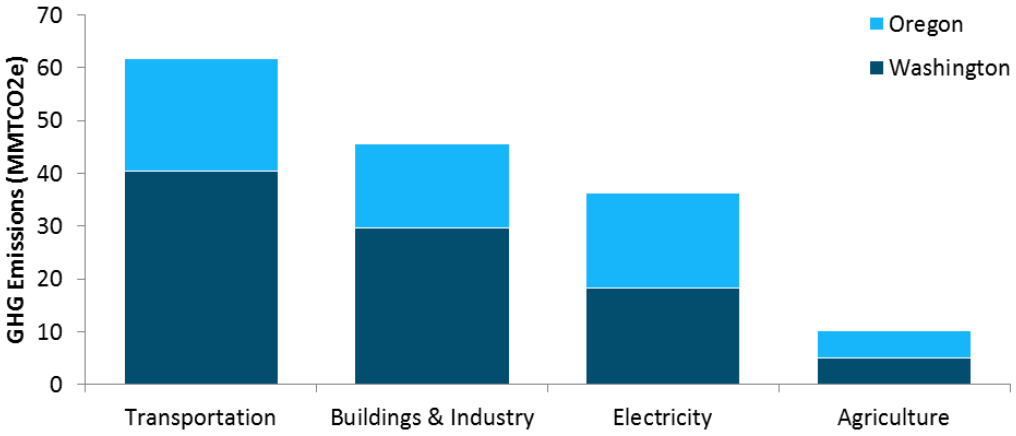
Oregon and Washington are currently exploring potential commitments to deep decarbonization in line with international goals:

- 80-91% below 1990 levels by 2050 (proposed)

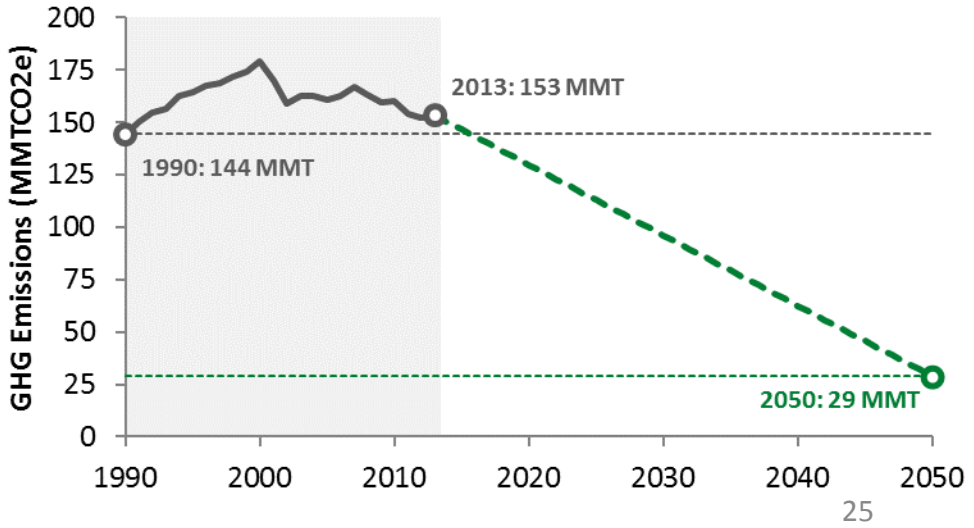
This study was conceived to inform policymakers on the effectiveness of various potential policies to reduce GHG emissions in the Northwest:

- What are the most cost-effective ways to reduce electricity sector emissions?
- What is the value of existing carbon-free resources?

2013 GHG Emissions for Oregon and Washington



Historical and Projected GHG Emissions



Sources: Report to the Legislature on Washington Greenhouse Gas Emissions Inventory: 2010 – 2013 (*link*); Oregon Greenhouse Gas In-boundary Inventory (*link*)

Key Findings – 2017 E3 Study (1 of 3)

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The most cost-effective opportunity for reducing carbon in the Northwest is to displace coal generation with a combination of energy efficiency, renewables and some natural gas

- Coal generation produces approximately 80% of the Northwest's electricity-sector GHG emissions today.
- A technology-neutral policy that focuses on carbon provides incentives for leveraging the lowest-cost GHG emissions reductions

Renewable generation is an important component of a low-carbon future, however a Renewables Portfolio Standard (RPS) results in higher costs and higher carbon emissions than a policy that focuses directly on carbon

- RPS policy has been successful at driving investment in renewables but has unintended consequences, such as oversupply and negative wholesale electricity prices that create challenges for reinvestment in existing zero-carbon resources

Key Findings – 2017 E3 Study (2 of 3)

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Meeting decarbonization goals becomes significantly more challenging and costly should existing zero-carbon resources retire

- A policy that encourages the retention of existing zero-carbon generation resources like hydro will help contain costs of meeting carbon goals

Prohibiting construction of new natural gas generation adds significant cost but does little to save GHG emissions

- Older gas plants run at a higher capacity factor and generate more carbon emissions
- More study is needed to determine whether the system modeled has sufficient energy and capacity to meet resource adequacy requirements

Key Findings – 2017 E3 Study (3 of 3)

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Returning revenues raised under a carbon pricing policy to the electricity sector is crucial to mitigate higher costs

- This is a common feature of carbon pricing programs adopted in other jurisdictions
- This helps ensure that electricity ratepayers are not required to pay twice: first for the cost of investments in GHG abatement measures, and second for the emissions that remain

Research and development is needed for the next generation of Energy Efficiency measures

- Higher-cost measures that have not traditionally been considered may become cost-effective in a carbon-constrained world

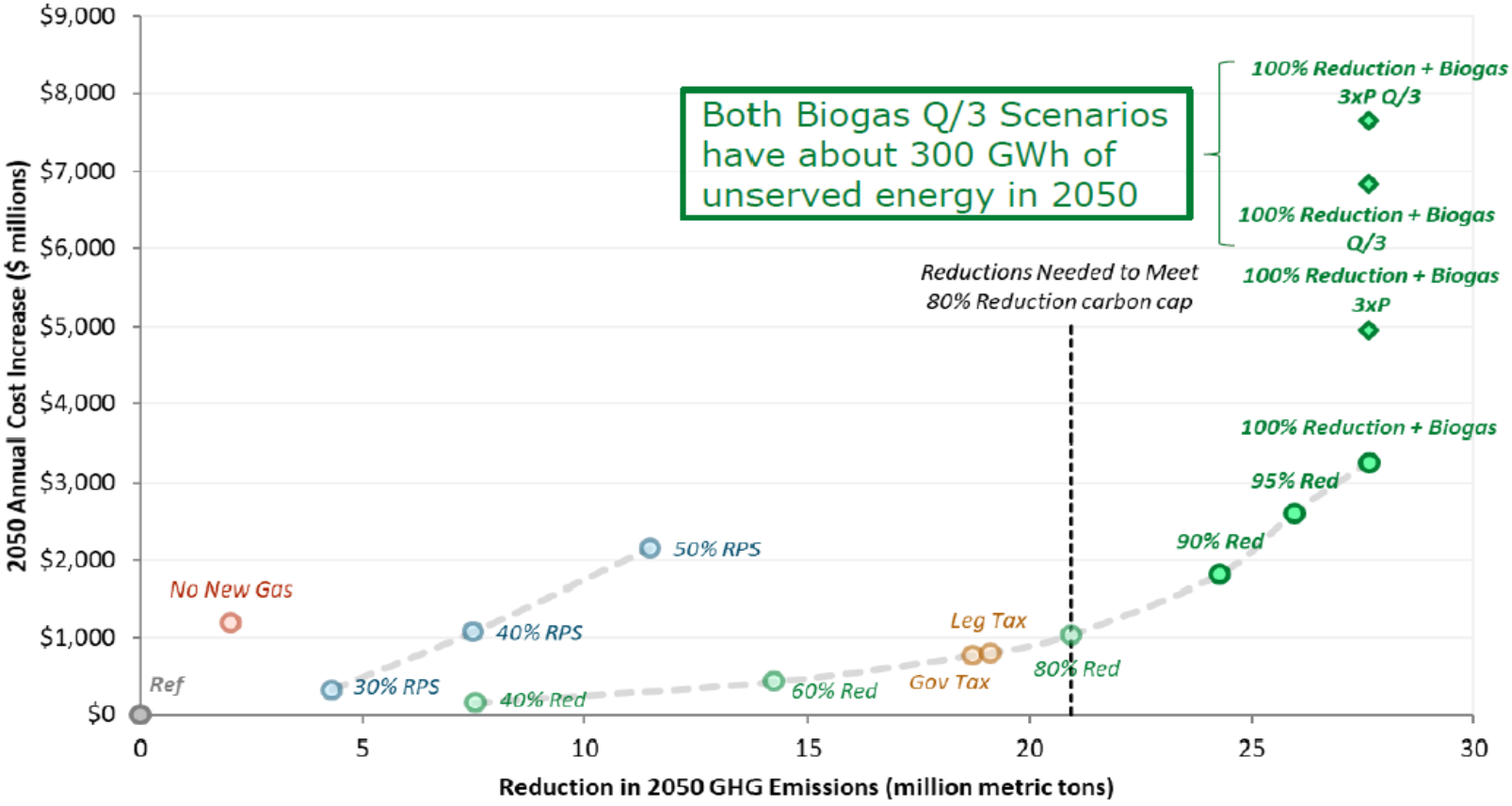
Vehicle electrification is a low-cost measure for reducing carbon emissions in the transportation sector

- Electrification may potentially increase costs for some utilities, but has benefits for society as a whole and also has benefits for utilities with surplus power supply (like us!)

Cost & Emission Impacts Study

Energy+Environmental Economics

E3 2018 Study – Biogas Scenarios



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Tacoma Water
Budget and Rate Recommendations

Scott Dewhirst, Superintendent
Sean Senescall, Finance and Analytics Manager
July 25, 2018

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Agenda

1 **Introduction**

2 **Revenue Requirement and Budget**

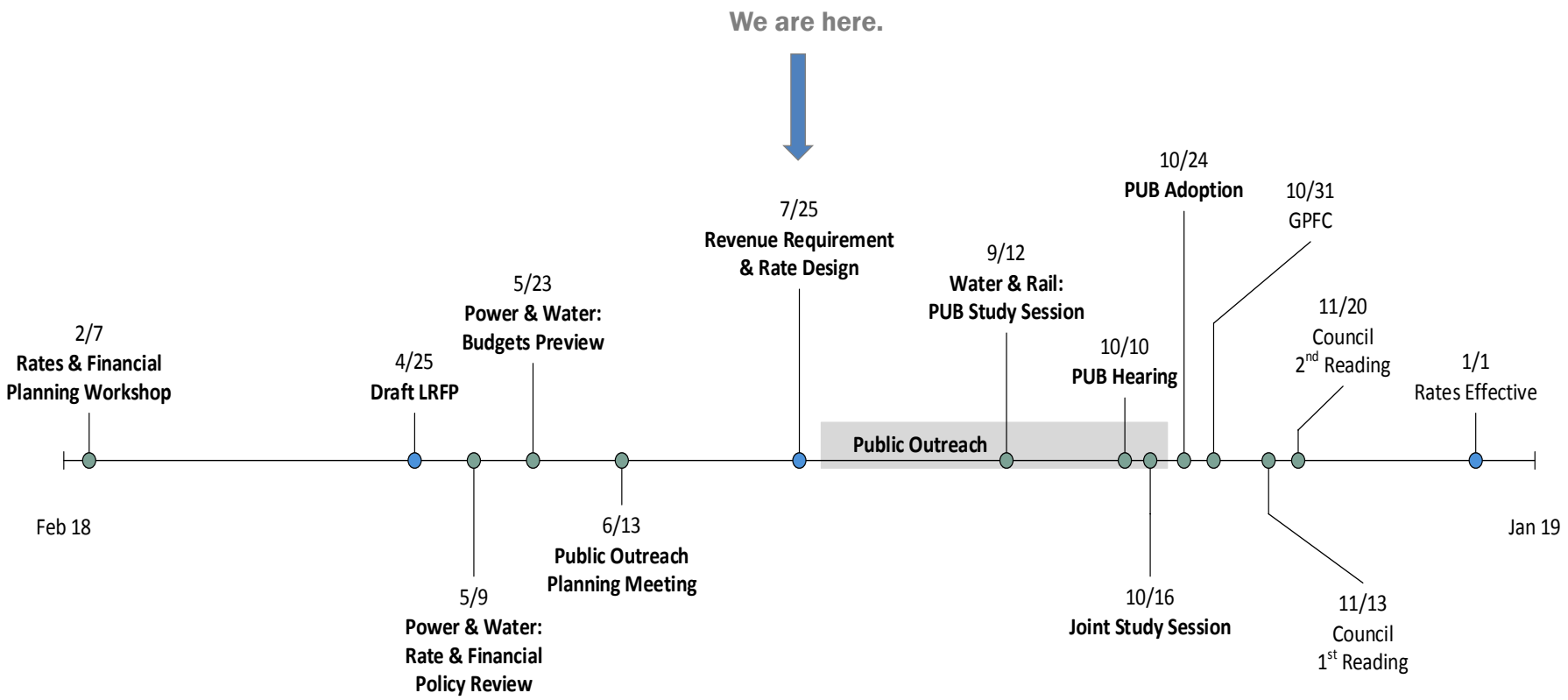
3 **Cost of Service**

4 **Rate Design**

5 **Appendix**

Introduction

Budget and Rate Timeline



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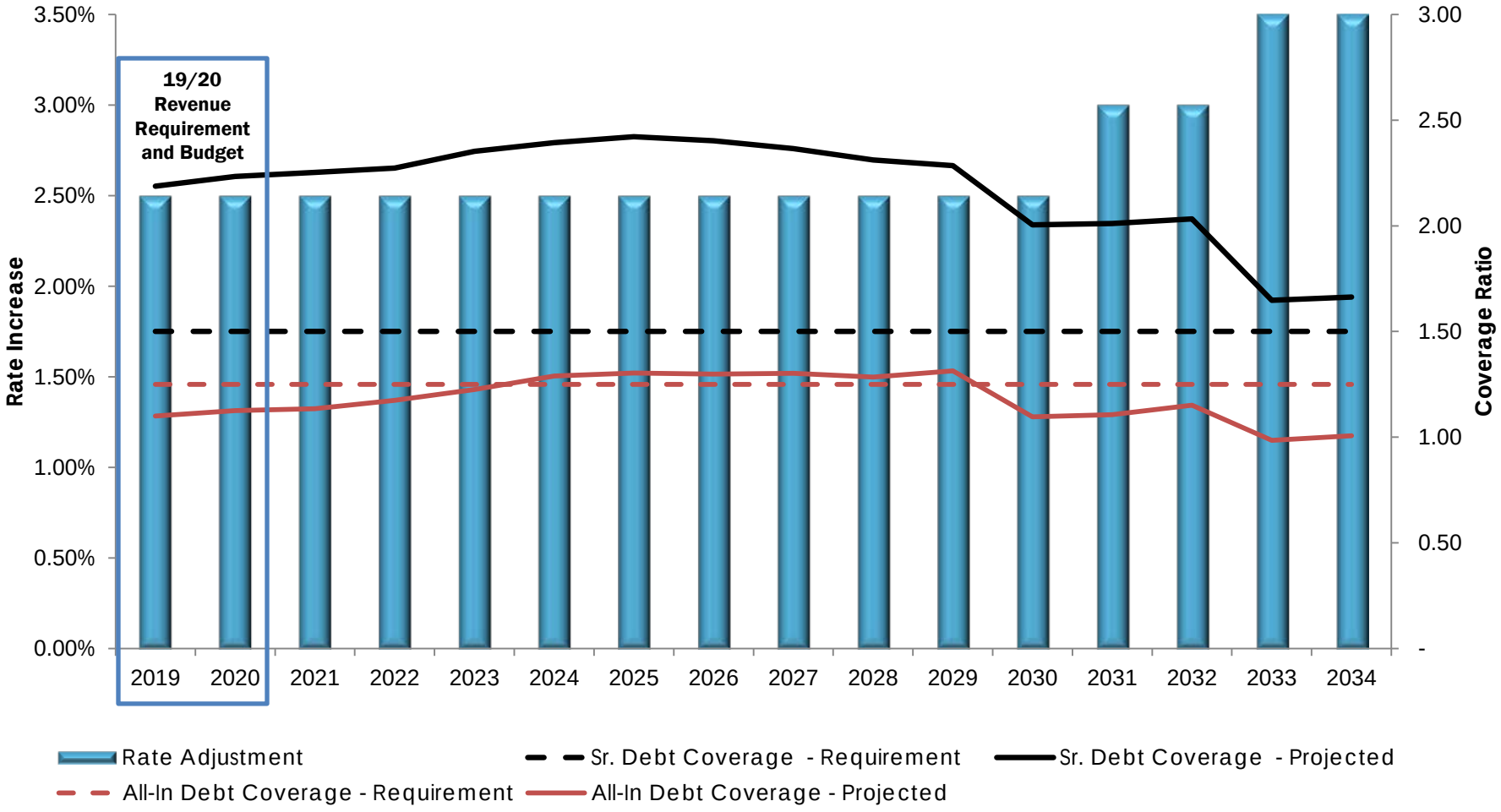
Revenue Requirement and Budget

Rate Increases and Debt Service Coverage



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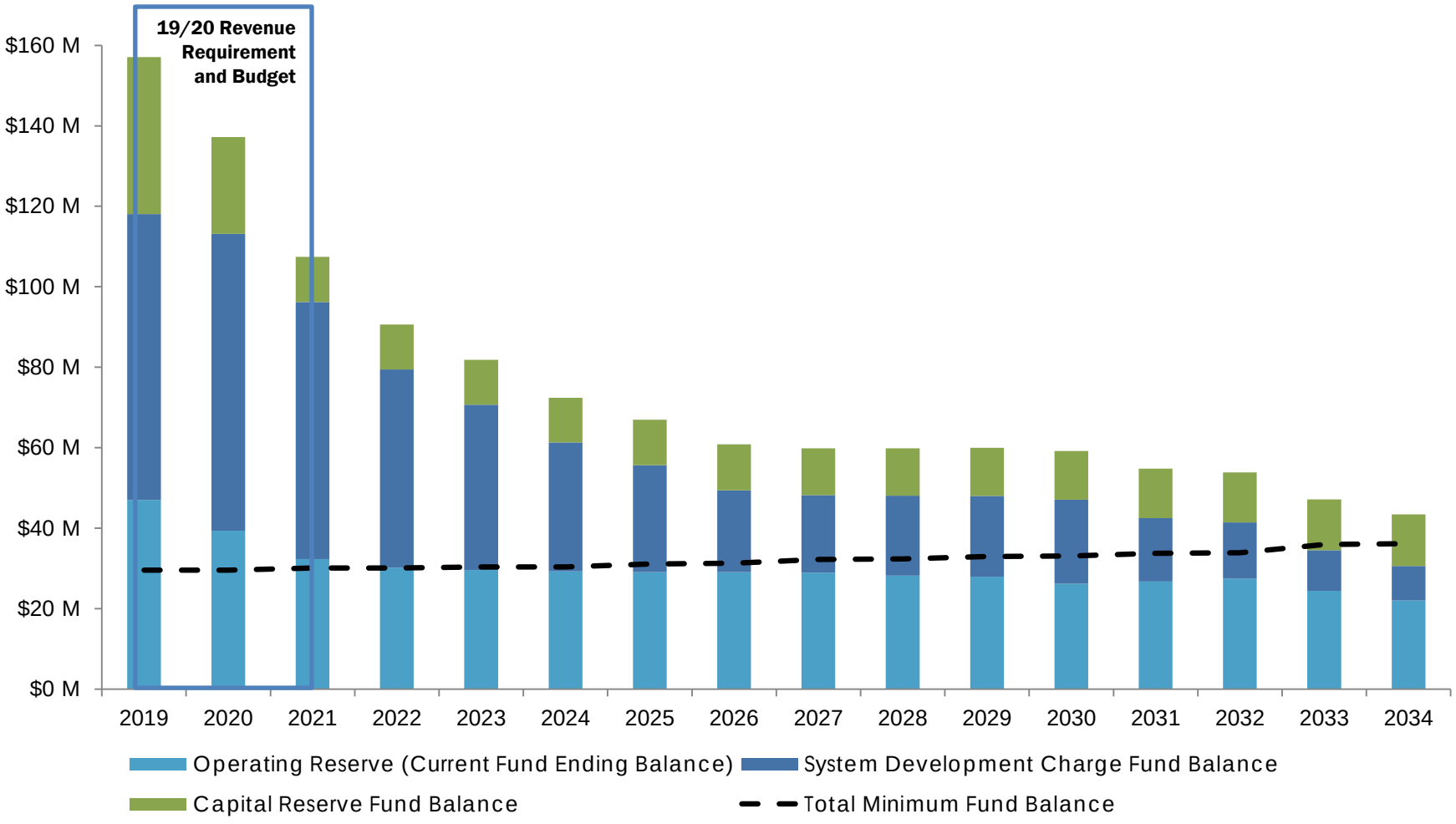
Total Fund Balance



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Revenue Requirement Analysis

O&M Expense Forecast

- Apply budget development decision making tools
- Conduct historical cost review
- Include inflation factors
- Consider strategic initiatives and additional needs or enhancements
- Plan for increasing costs
- Incorporate forecasted assessments and labor assumptions

Capital Expense Forecast

- Capital Budget and 10-year CIP developed with business case evaluations
- Funding assumptions apply existing bond fund sources first, then reasonable spend down of capital and operating reserves, then anticipated additional debt funding in 2023/24

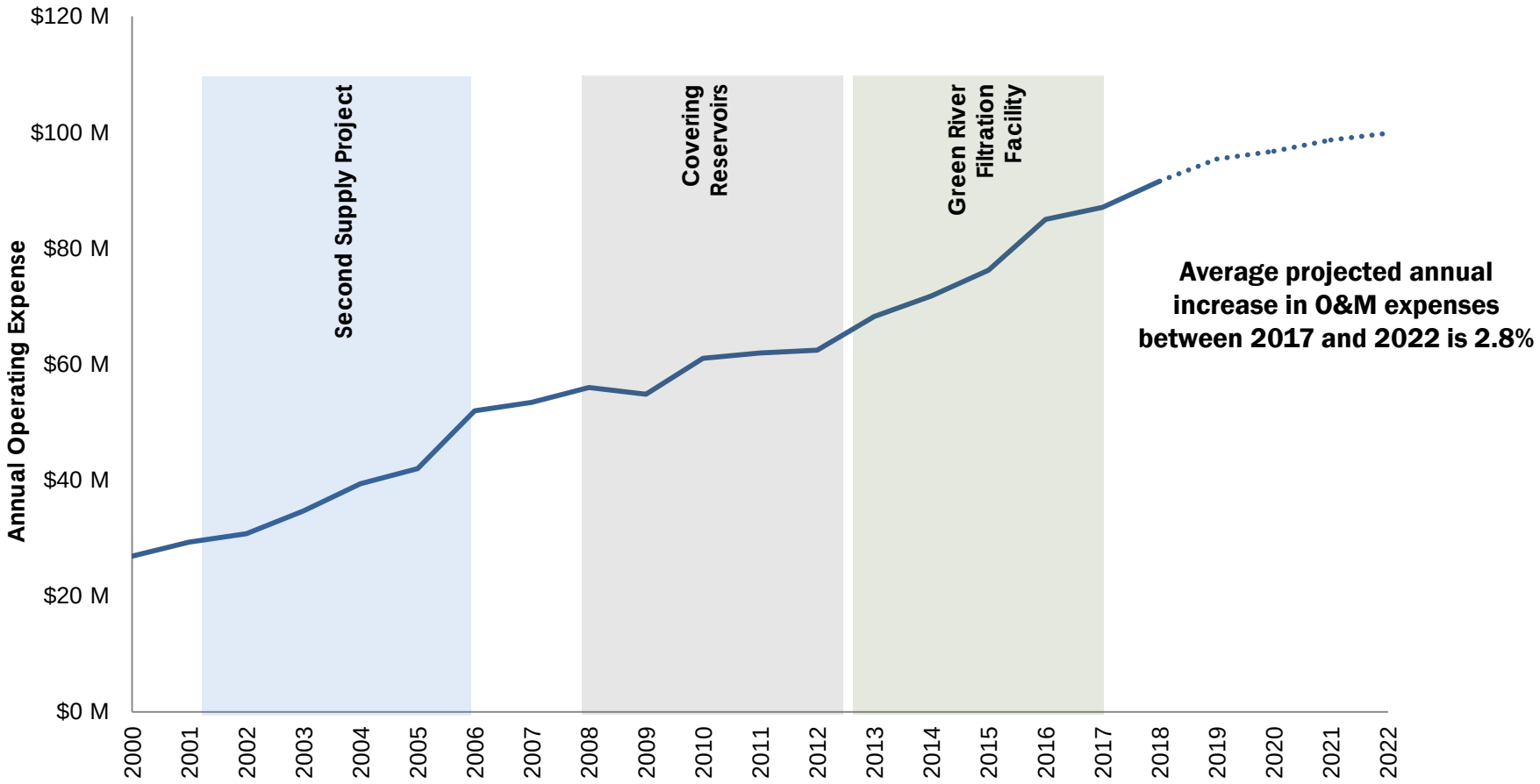
Non-Rate Revenue Forecast

- Miscellaneous fee and charge revenues projected based on recent historical trends and known future changes
- Used to reduce rate revenue requirement

Rate Revenue Requirement Forecast

- Projection of revenue under existing rates using 10-year demand forecast
- Any revenue requirement deficiencies must be addressed by rate adjustments

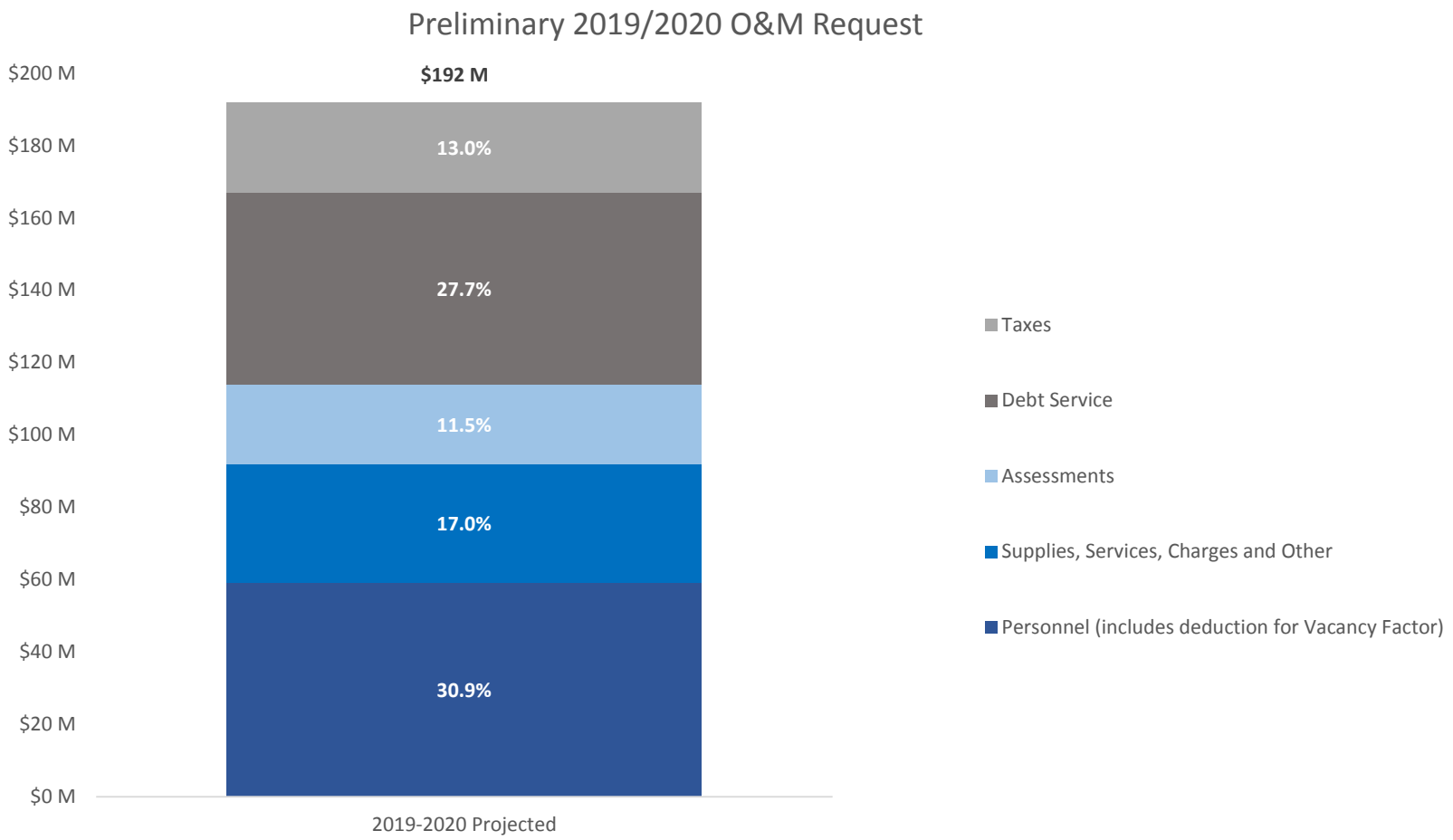
O&M Budget Overview



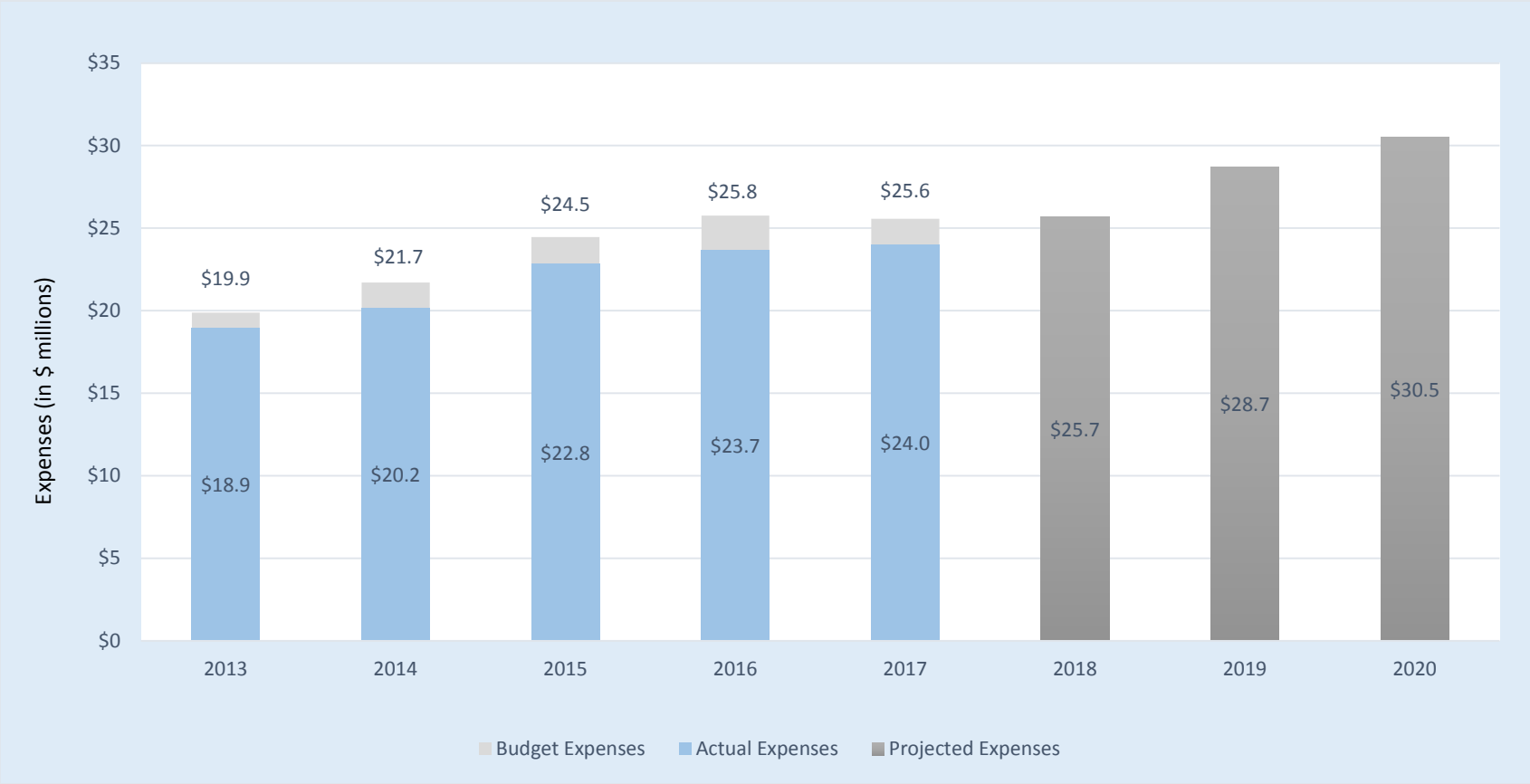
In response to 5/23 Board Study Session question from Board Member Larkin (ACTION ITEM 21).

Budget Proposal

2019/20 Preliminary O&M Budget



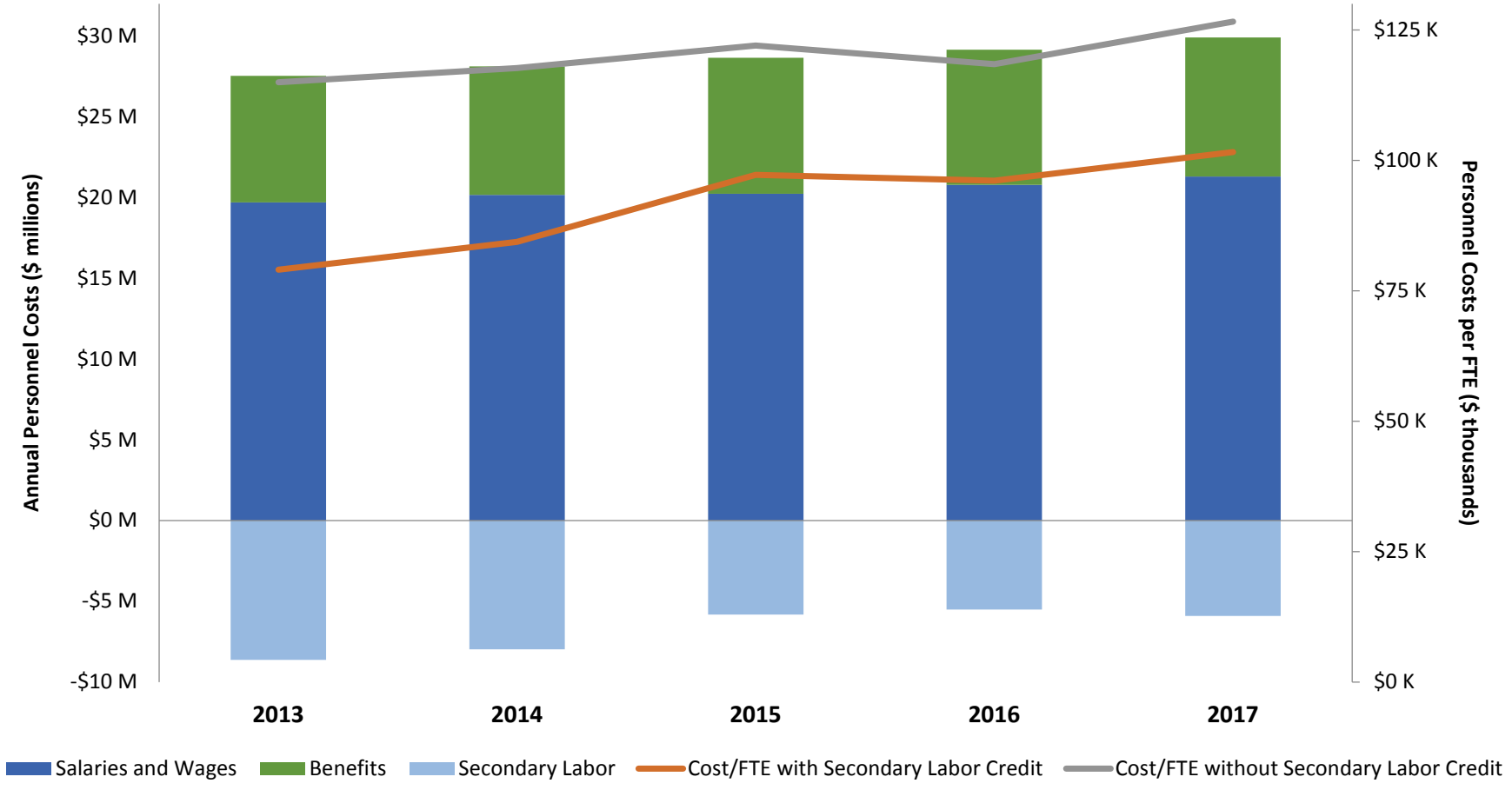
O&M Budget Overview: Personnel



Average annual increase in total personnel expense between 2016-2020 is 6.0%. Includes Vacancy Factor deduction for 2017-2020.

In response to 4/25 Board Study Session question from Board Member Larkin (ACTION ITEM 16).

O&M Budget Overview: Personnel



Average annual increase in salaries and benefits per FTE is 2.5%

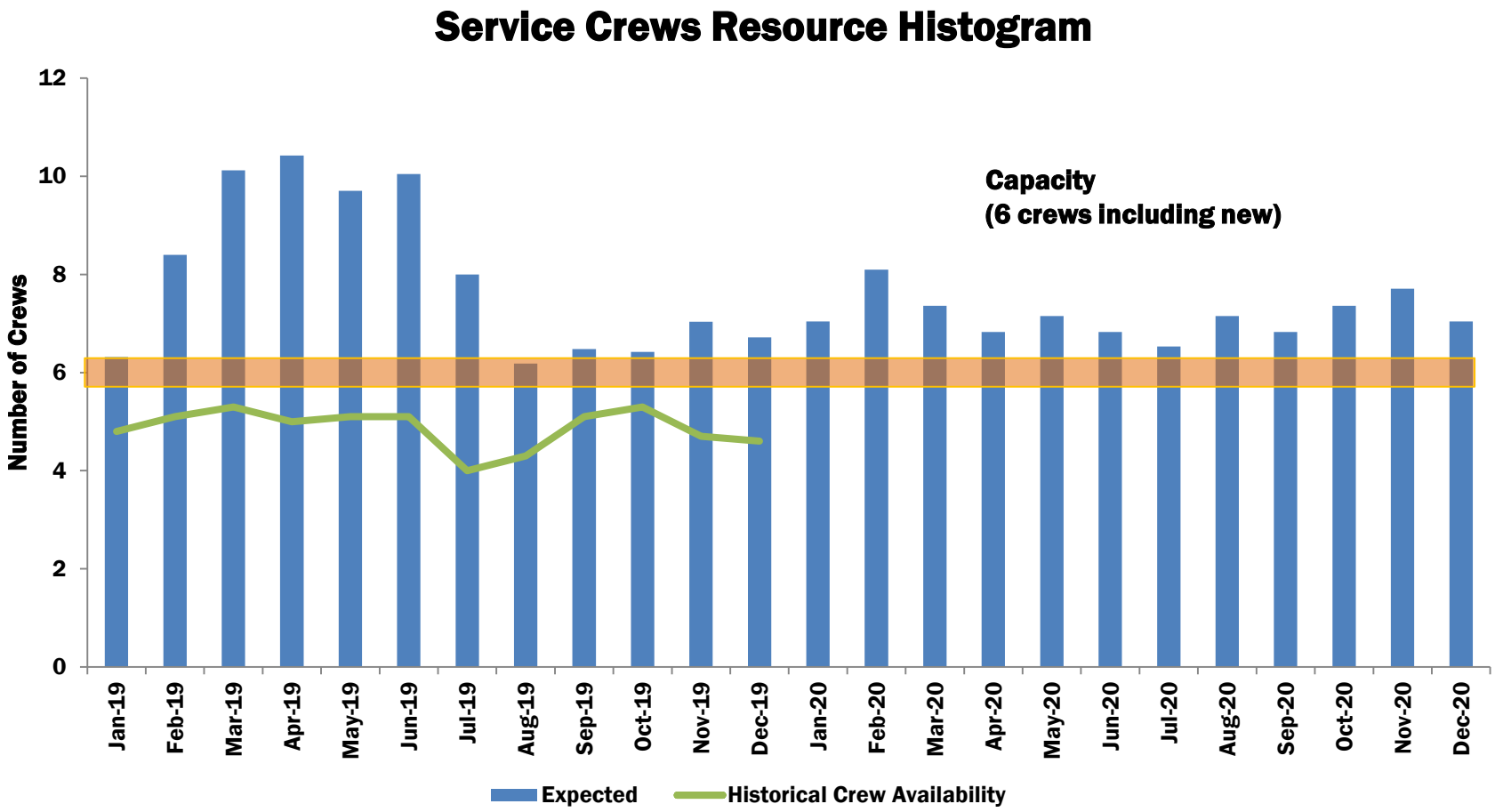
Budget Proposal

O&M Budget Overview: Personnel

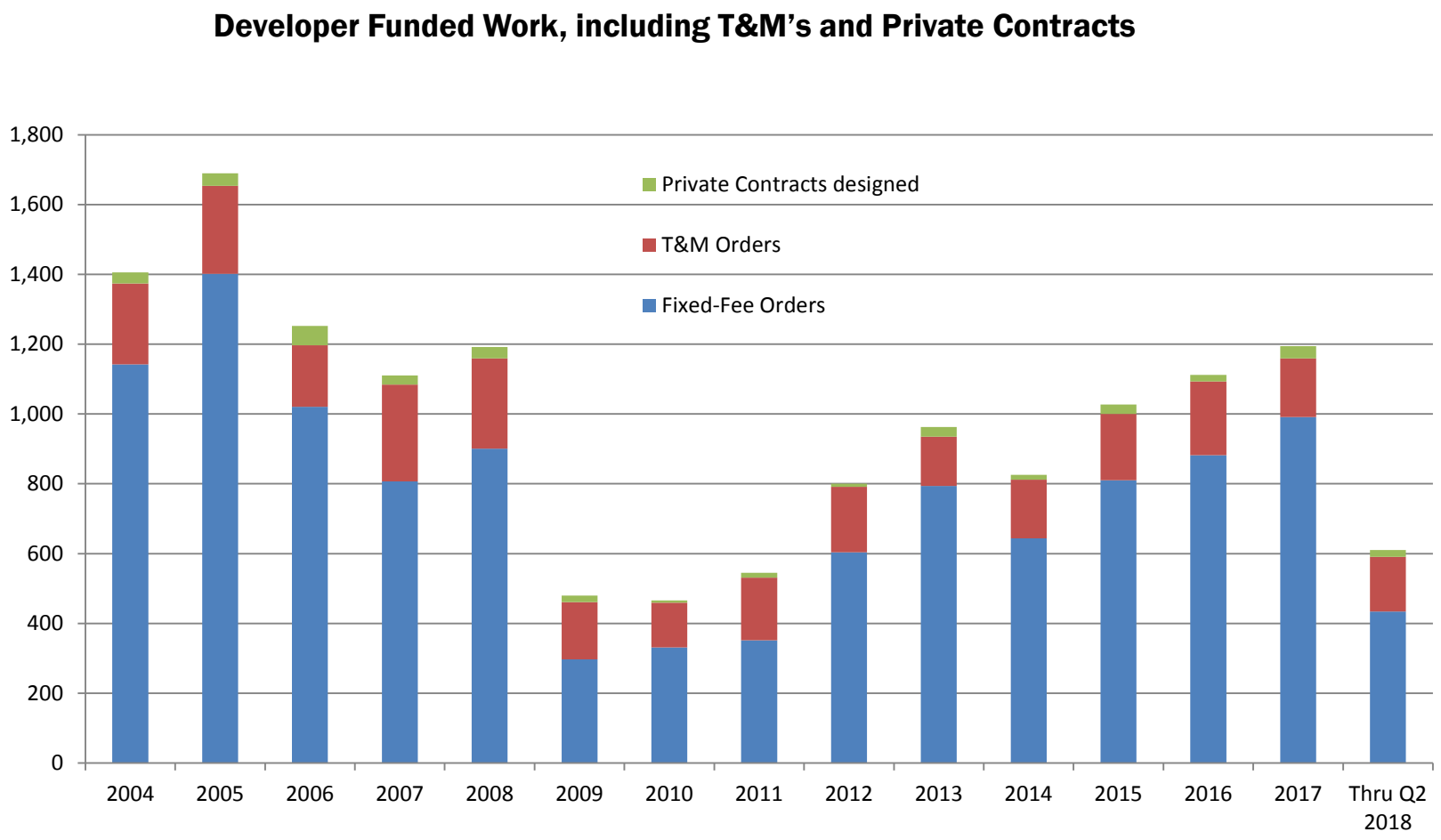
Permanent Capabilities	FTE	Project Positions	FTE
Operational Support		**Operational Innovation**	
Water Utility Workers*	2	Advanced Metering Infrastructure (AMI)	
Heavy Equipment Operator	1	Water Service Worker	2
Senior Warehouse Technician	1	Water Utility Worker	2
Regulatory Compliance (Lead Locator)	1	Water Meter Repair Worker	1
Managing Assets (Planner)	1		
Employee Engagement (Workforce Development)	1		
Operational Optimization			
Knowledge Manager	1		
Safety Manager	1		
Project Manager	1		
Total Permanent	10	Total Project	5
Total Permanent Strategic FTEs	5		
Total Permanent Operational FTEs	5		
Total Project FTEs	5	Vacancy Factor (4% + *2 Water Utility Workers)	(13)
Total New FTEs	15	Total New FTE's Less Vacancy Factor	2

The overall Personnel Expense increase is $4.8M or 8.6% over the 2017/18 budget and includes a deduction of $3.4M for the vacancy factor.

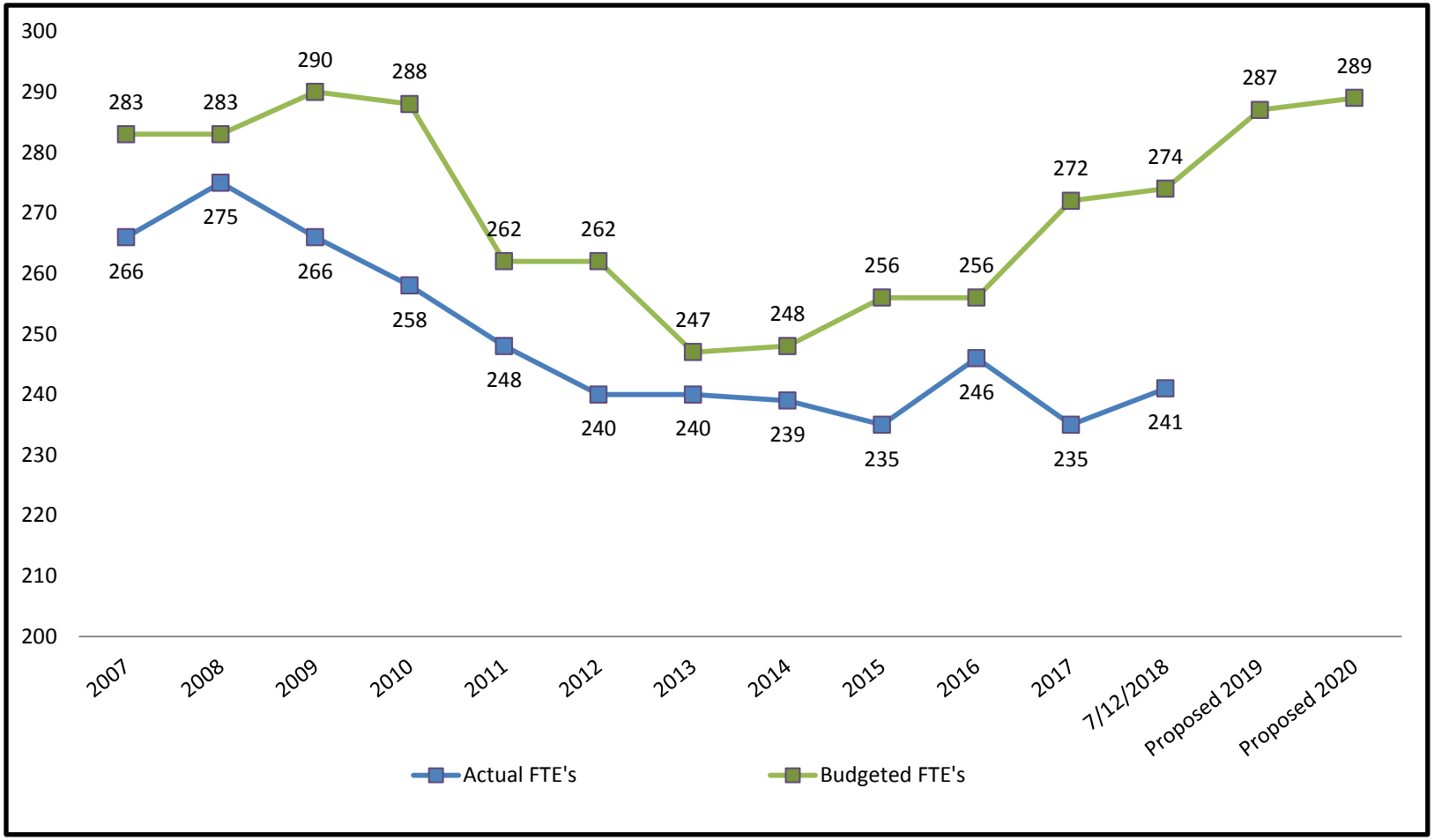
O&M Budget Overview: Personnel



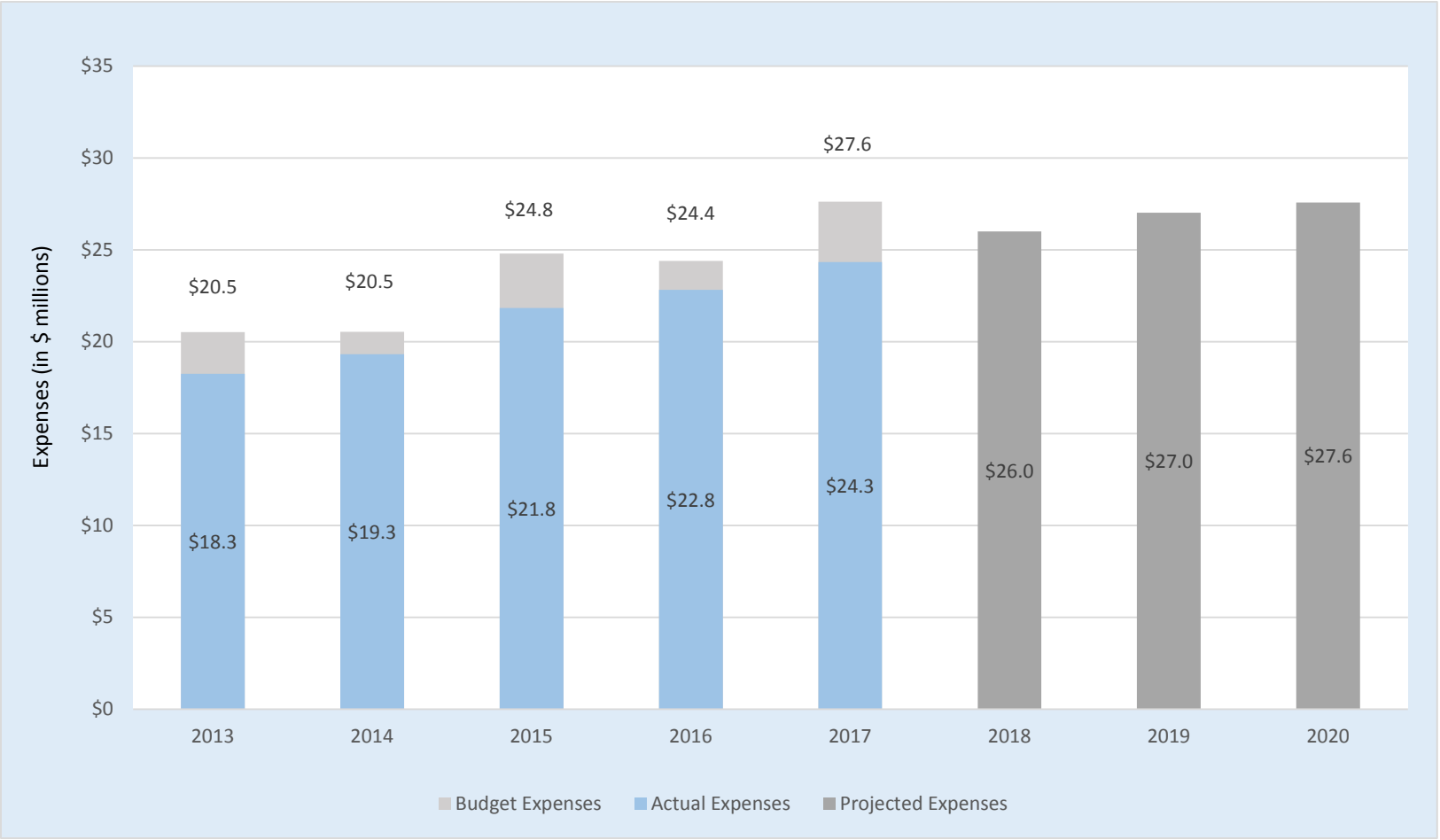
O&M Budget Overview: Personnel



O&M Budget Overview: Personnel

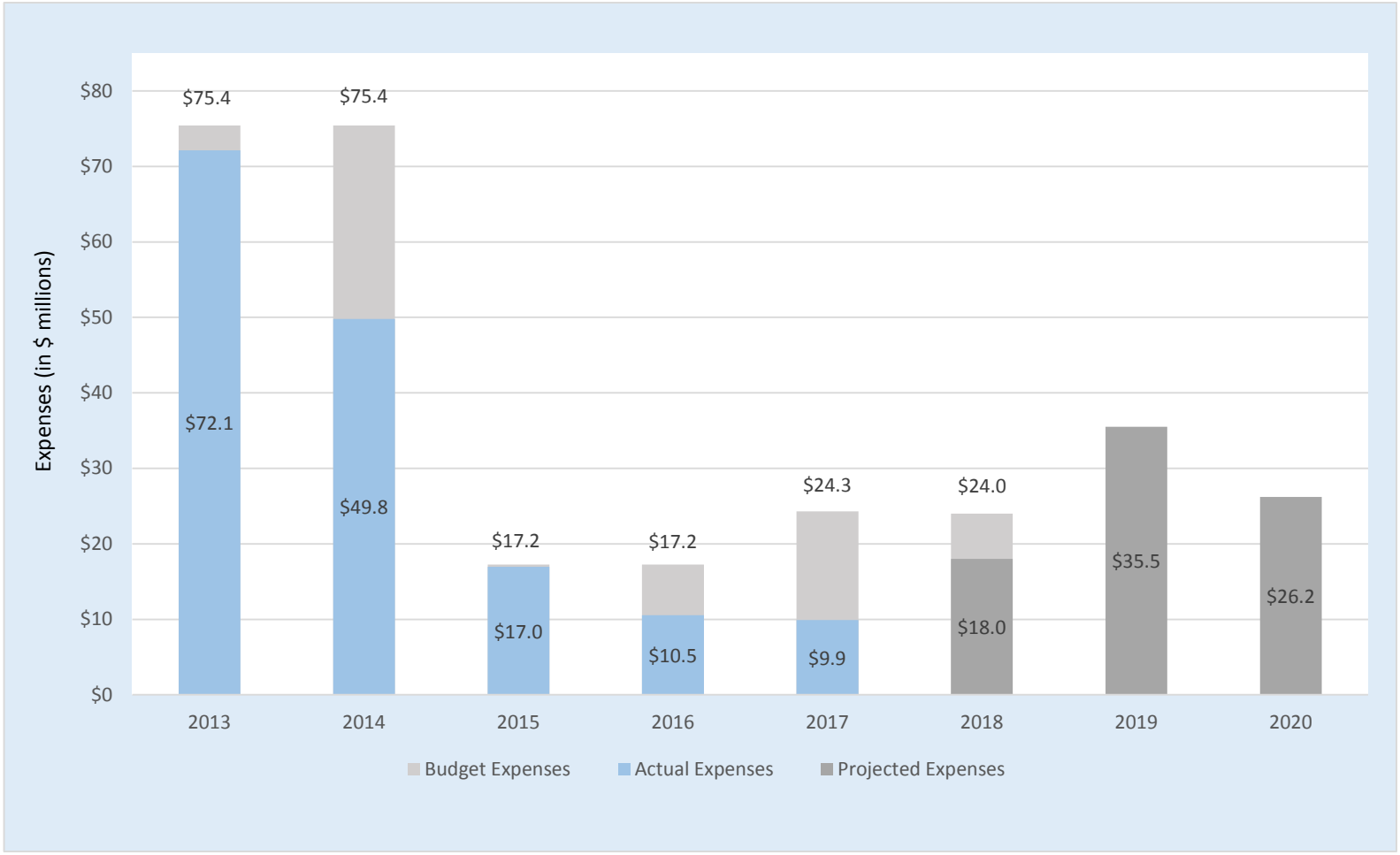


O&M Budget Overview: Supplies, Services and Charges



Average annual increase in Supplies, Services and Other Charges between 2016-2020 is 4.8%.

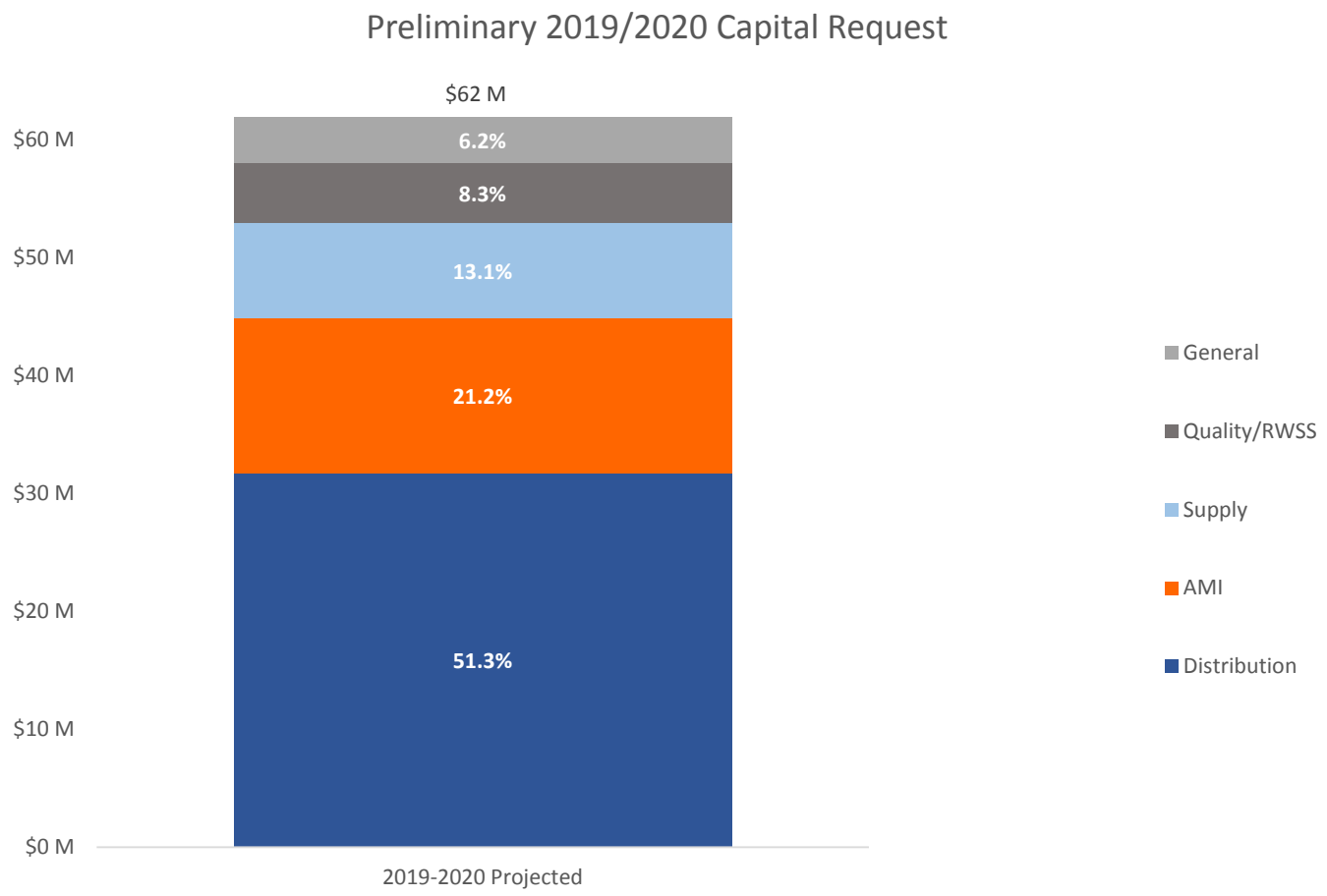
Capital Budget Overview



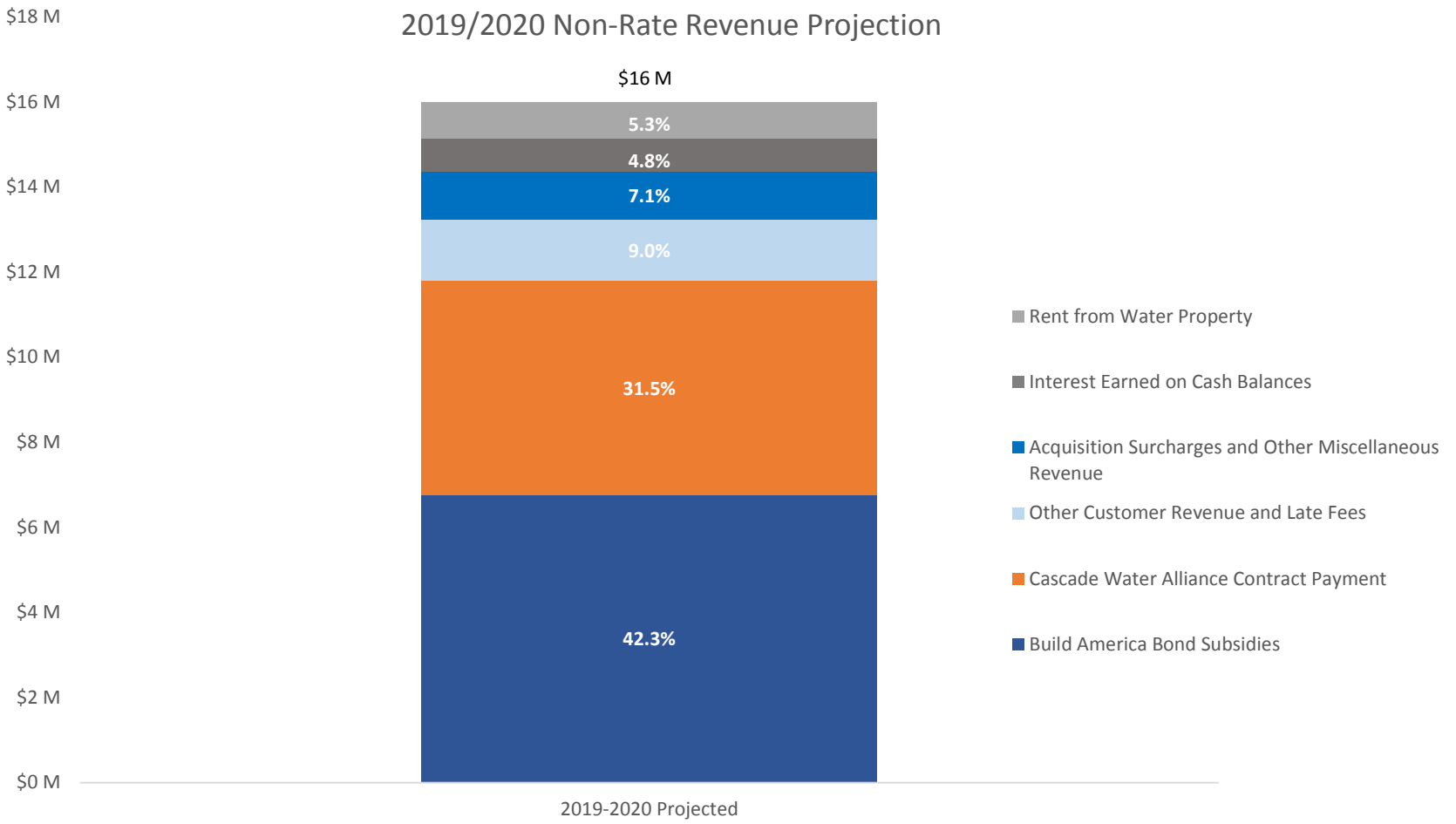
Average annual increase in budgeted Capital between 2016-2020 is 13%.

Budget Decision

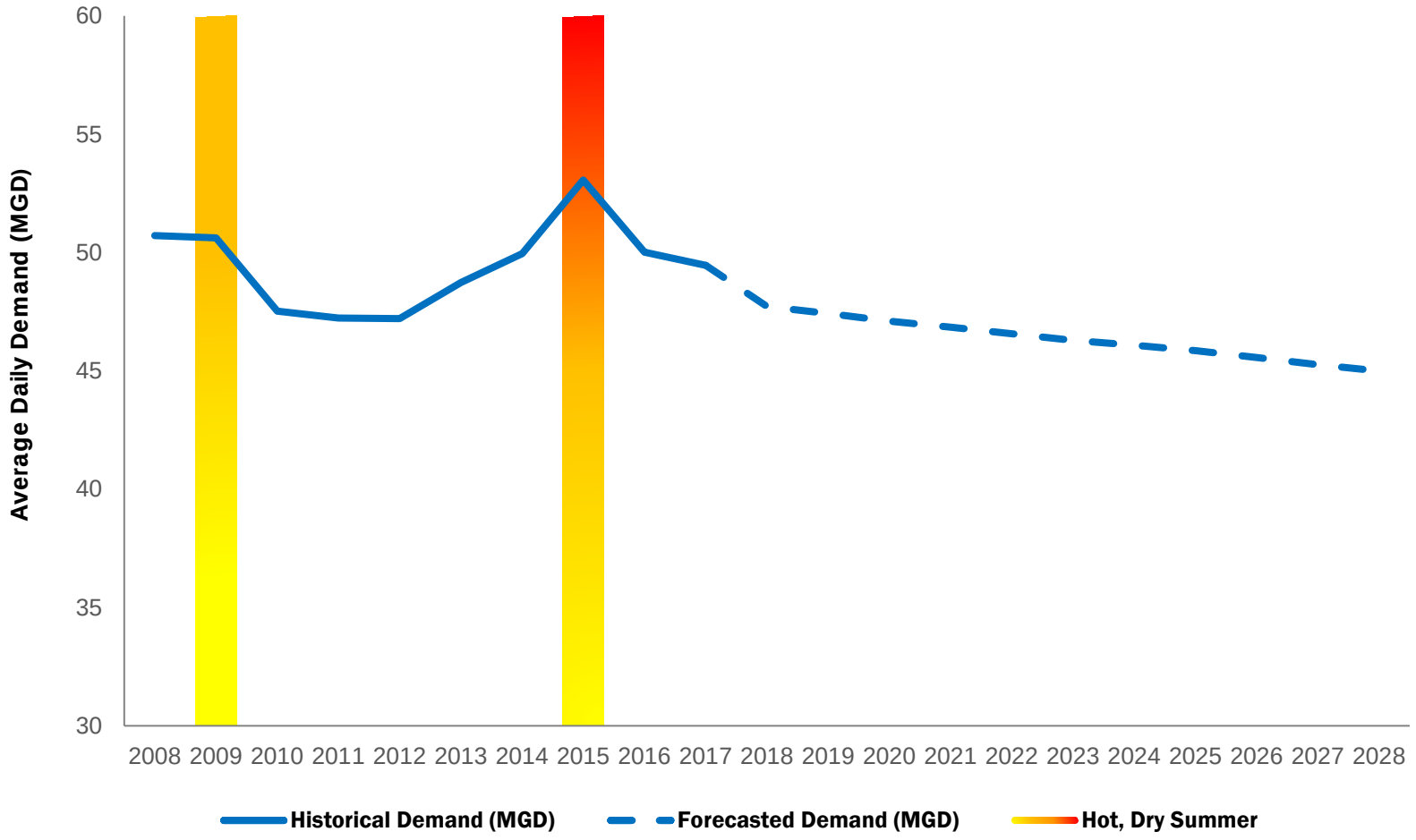
2019/20 Preliminary Capital Budget



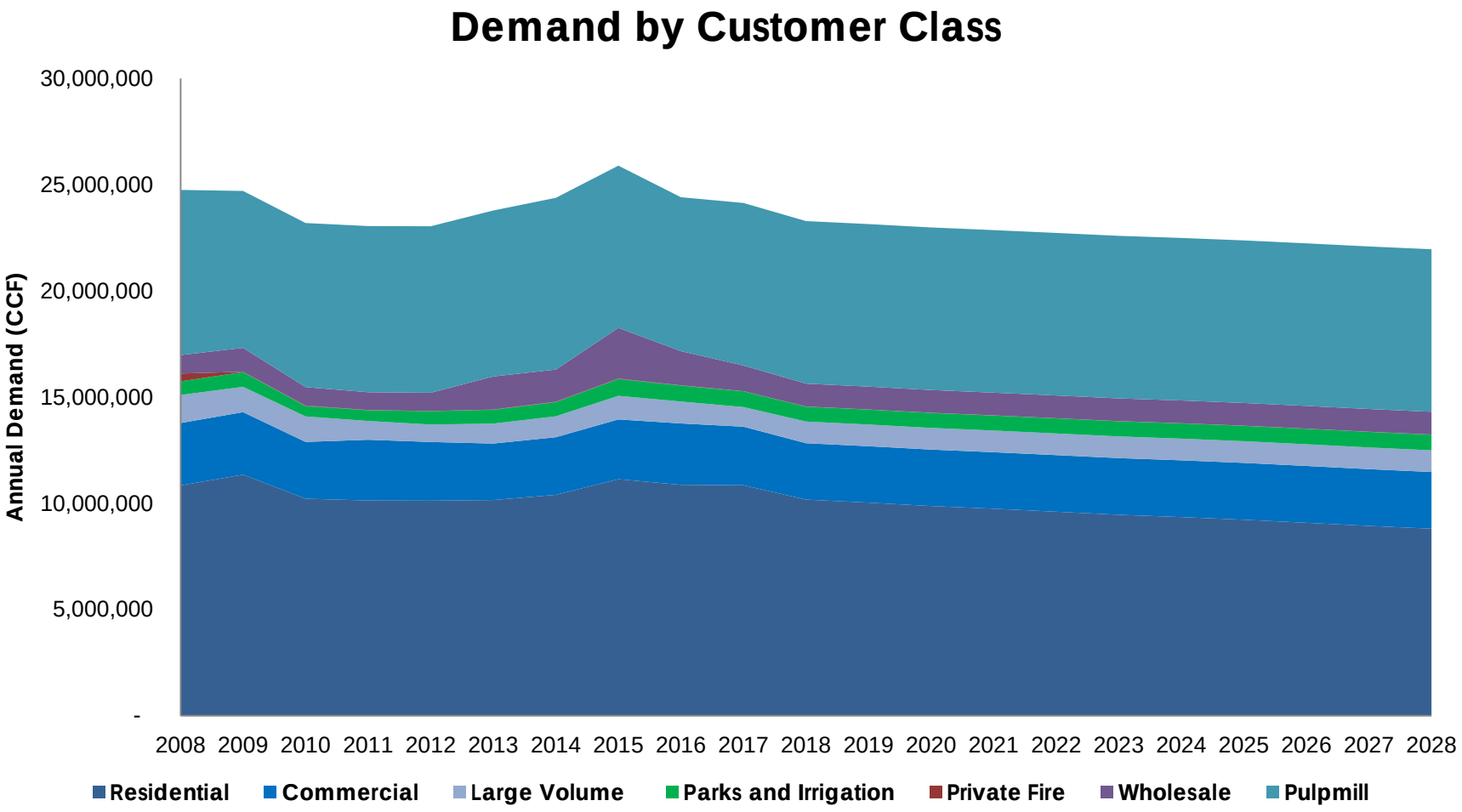
Revenue Overview: Non-Rate Revenue



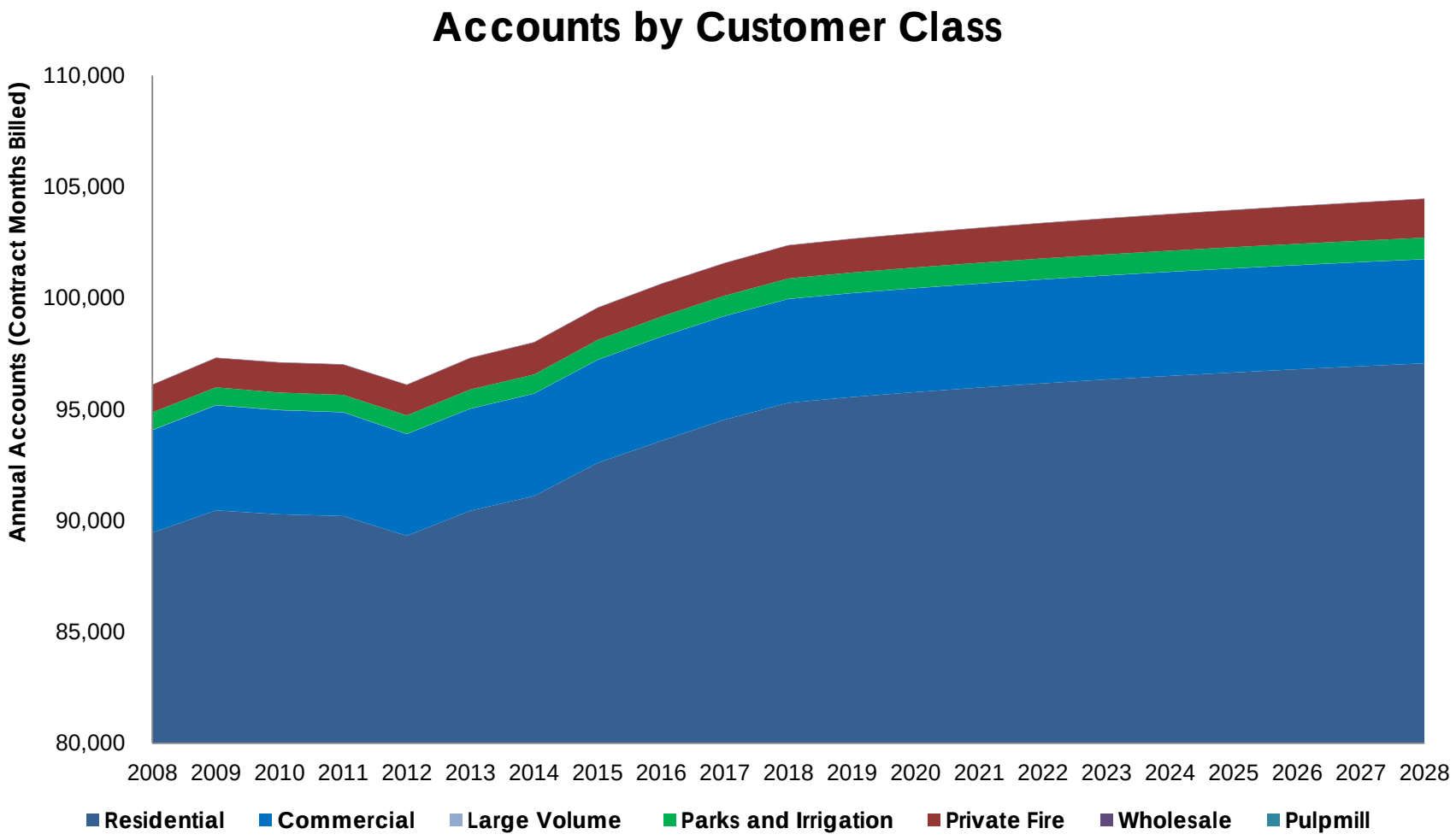
Rate Revenue Forecast



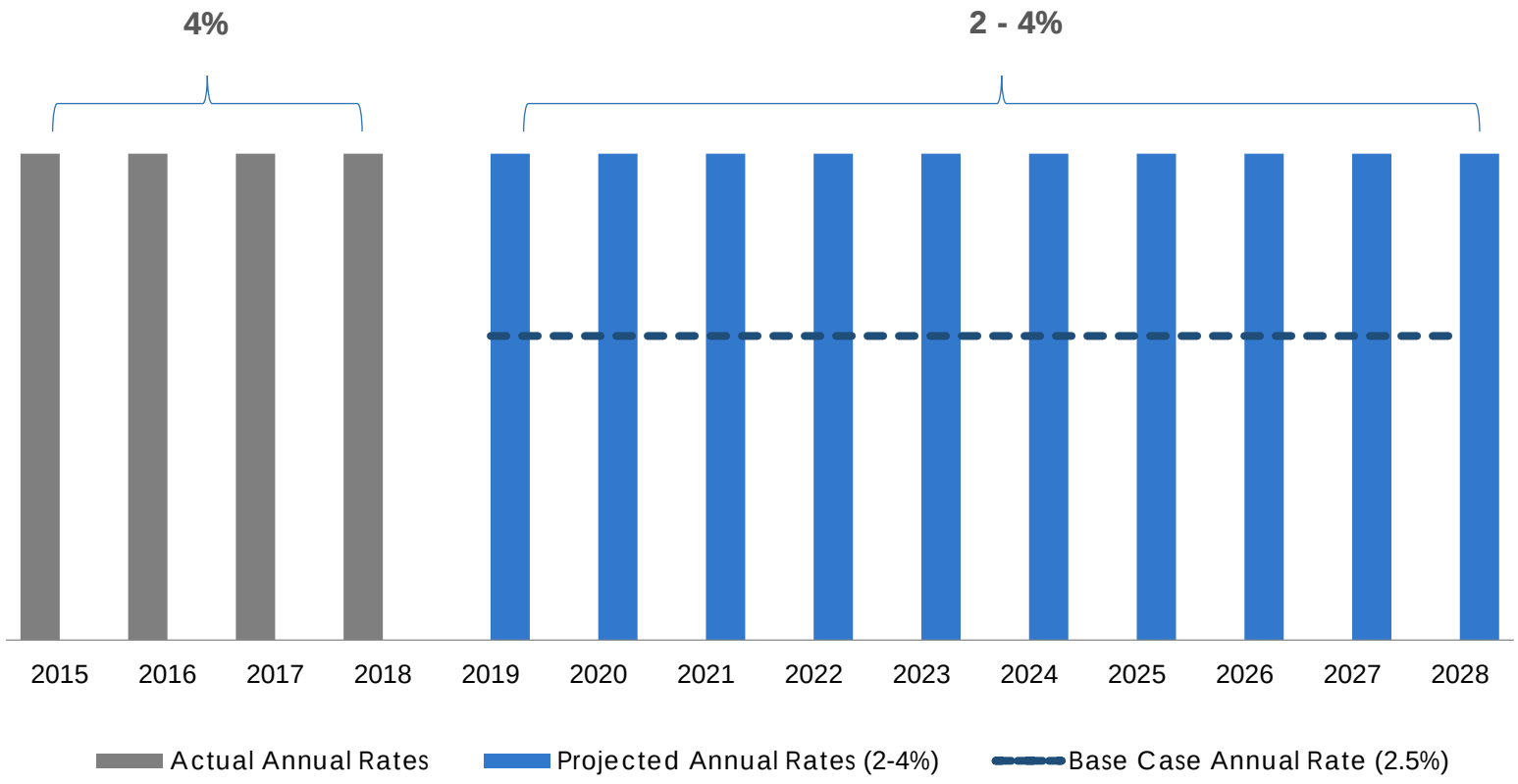
Rate Revenue Forecast: Demand



Rate Revenue Forecast: Accounts



Forecast of Projected Rate Increases



This forecast is subject to change, and is dependent upon actual financial performance in future years.

Source: Tacoma Power Long Range Financial Plan

Cost of Service

Cost of Service Analysis

Tacoma Public Utilities is a Cost-of-Service Organization

- Rates set based on **cost to serve customers**.
- Customer Classes are groups of customers with similar **usage characteristics** that influence cost, such as **infrastructure** requirements and **consumption** patterns
- A **cost-of-service analysis (COSA)** determines the cost of serving each Customer Class:
  - Standard utility practice
  - Conducted every budget cycle
  - Reviewed by third-party consultant

The COSA calculates the total revenue that should be collected from each rate class.

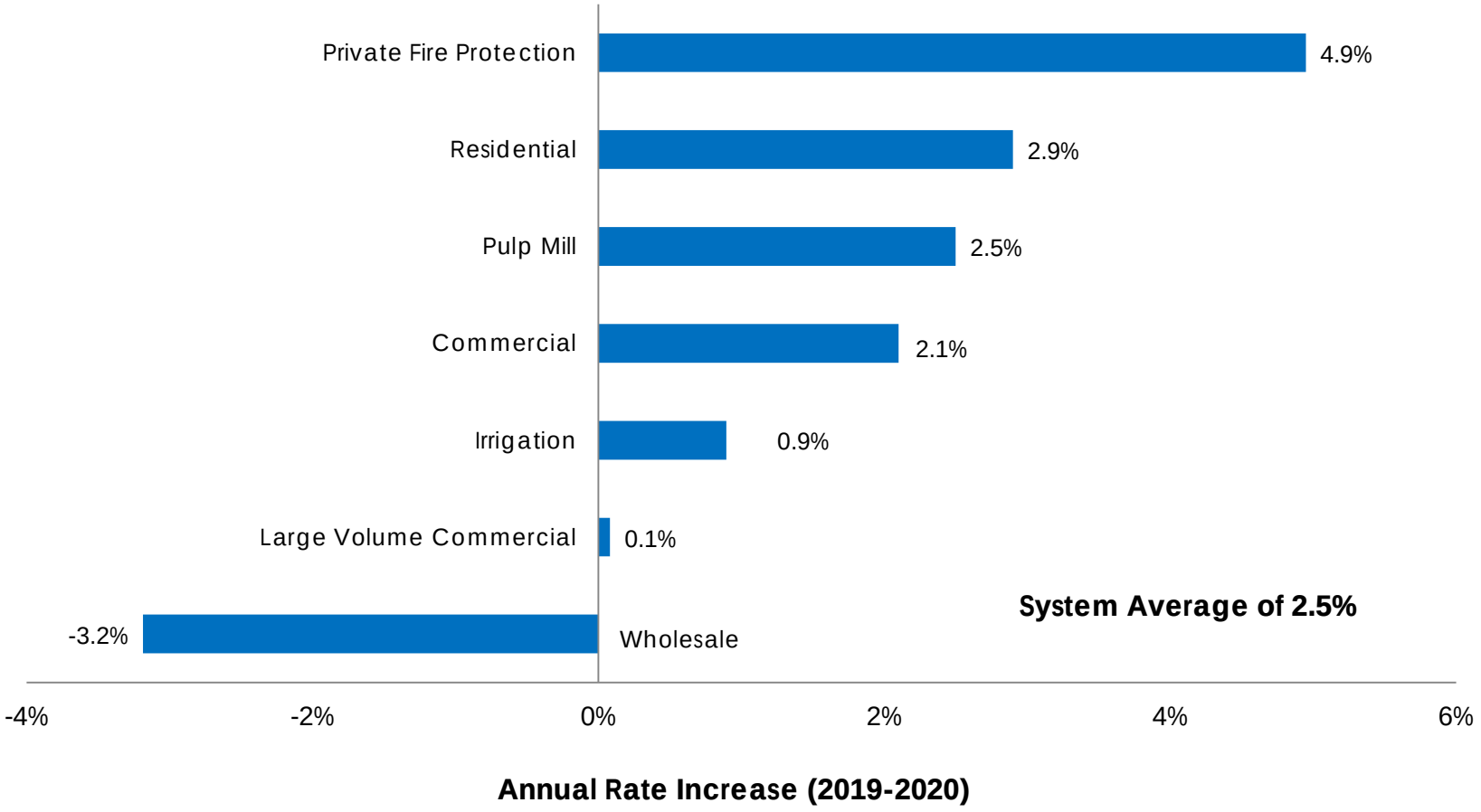
Customer Class Overall Revenue Requirement

Customer Class	2019-2020 Revenues @ Current Rates	2019-2020 Revenues @ Proposed Rates	Additional Revenue Required
Residential	$ 111,273,911	$ 116,141,841	$ 4,867,930
Irrigation	6,449,180	6,536,106	86,926
Commercial	21,772,140	22,470,052	697,912
Large Volume Commercial	4,278,790	4,284,057	5,267
Wholesale	5,674,463	5,406,285	(268,177)
Private Fire Protection	5,617,189	6,042,306	425,117
Pulp Mill	13,305,109	13,808,208	503,099
System	**$ 168,370,781**	**$ 174,688,855**	**$ 6,318,075**

Large Volume Commercial

✓ US Oil ✓ GP Gypsum ✓ Boeing ✓ James Hardie ✓ Frederickson Power ✓ Niagara Bottling

Proposed Rate Increases by Customer Class

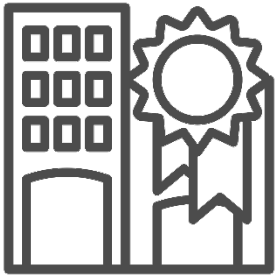


Rate Design

Principles of Rate Design

Legal

- Fair
- Just
- Reasonable
- Non-Discriminatory



Industry-Standard

- Revenue Stability
- Cost Causation
- Economic Efficiency
- Equity
- Bill Stability

TPU Principles

- Affordability
- Environment
- Public Involvement

Policy Decision

Rate Recommendation (Scenario 1)

Scenario 1 applies a 0% increase to the fixed rate for each class (except for Irrigation and the Pulp Mill), while incorporating fire protection fees.

Customer Class	Overall	Ready to Serve Charge (Fixed)	Rate per CCF (Variable)
Residential	2.9%	0.2%	6.3%
Irrigation	0.9%	-25.0%	7.1%
Commercial	2.1%	0.1%	3.8%
Large Volume Commercial	0.1%	0.0%	0.1%
Wholesale	-3.2%	0.0%	-3.5%
Private Fire Protection	4.9%	4.8%	0.0%
Pulp Mill	2.5%	2.5%	2.5%

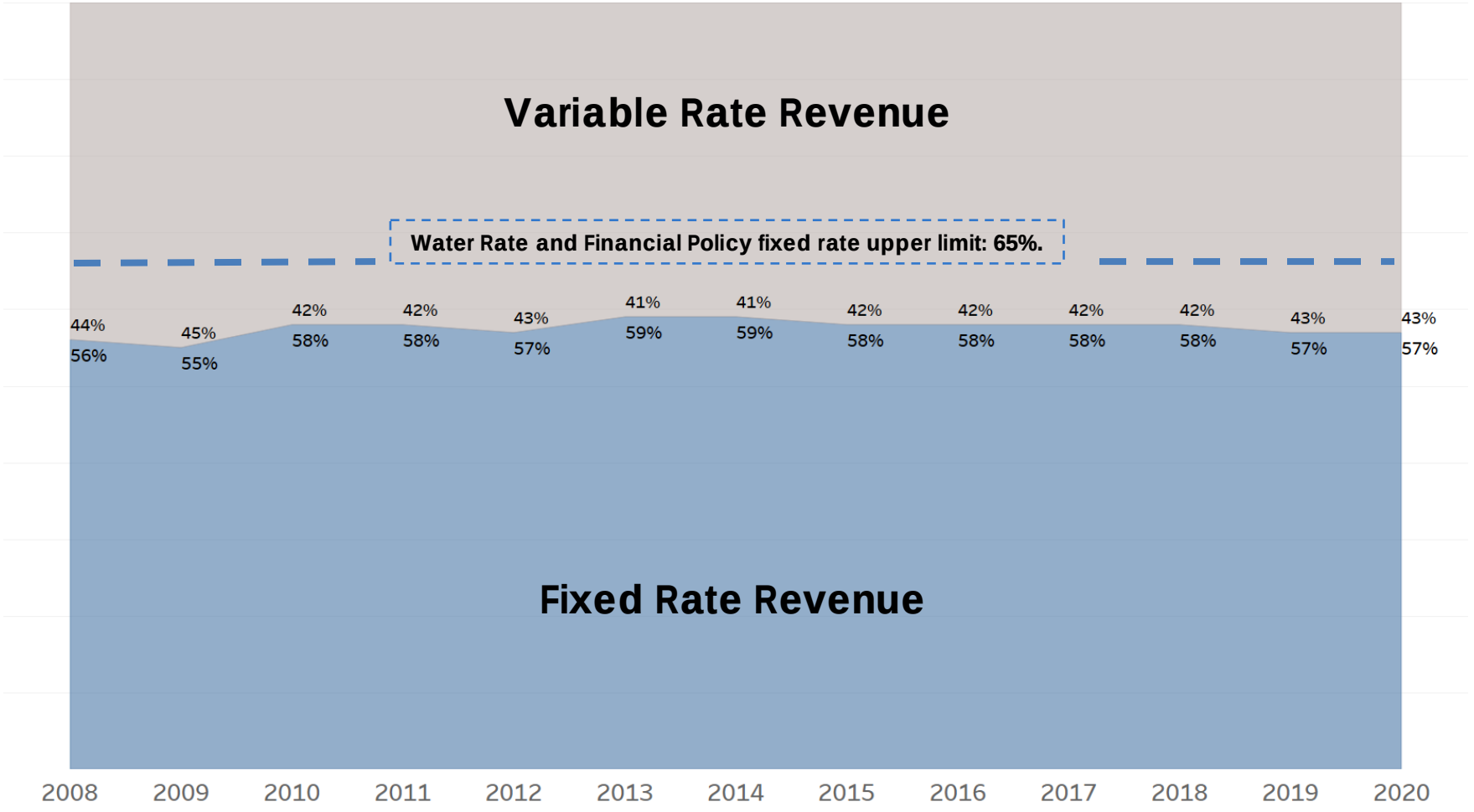
Policy Decision

Rate Recommendation (Scenario 2)

Scenario 2 applies a 2.5% increase to the fixed rate for each class (except for Irrigation), while incorporating fire protection fees.

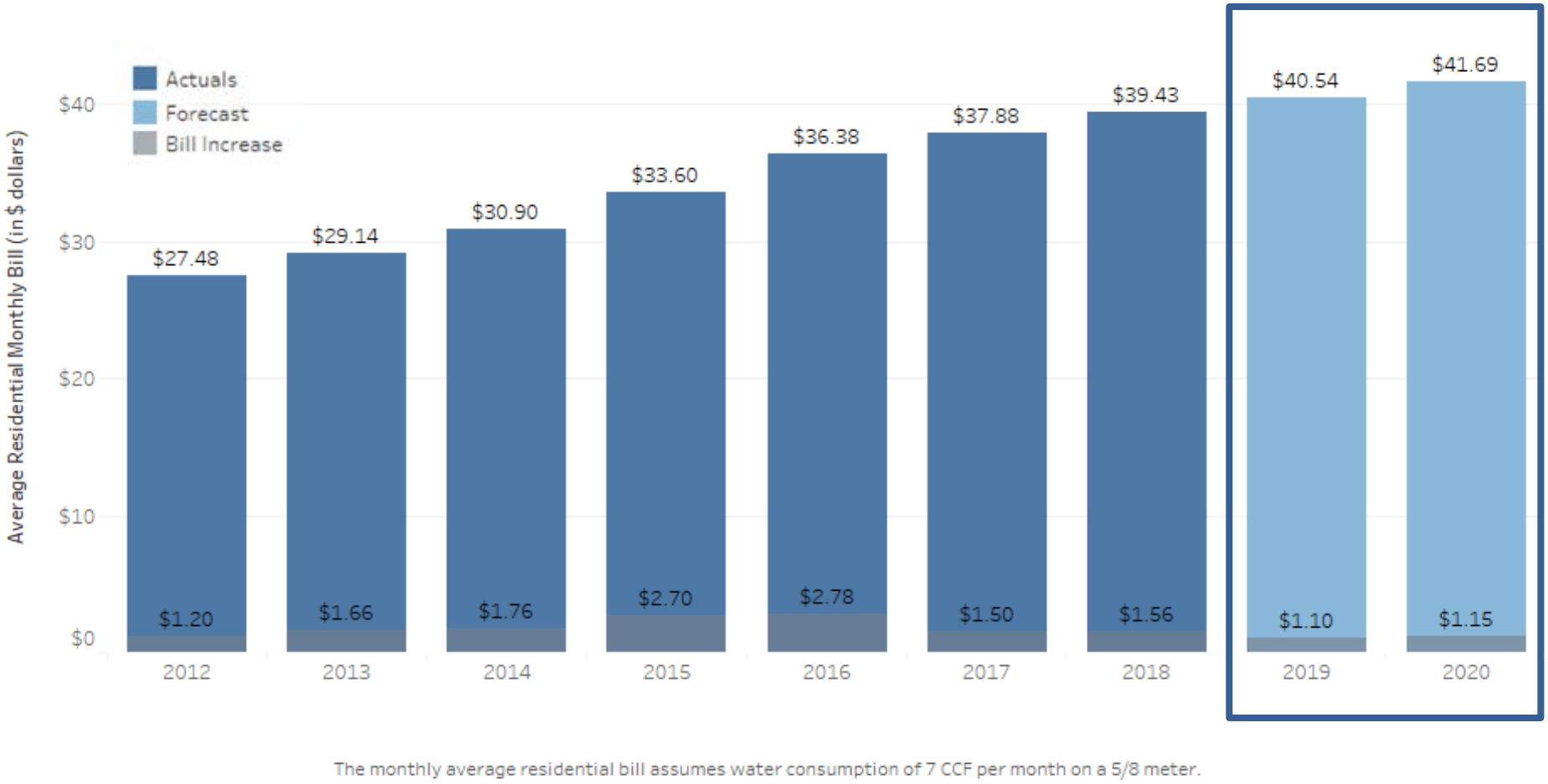
Customer Class	Overall	Ready to Serve Charge (Fixed)	Rate per CCF (Variable)
Residential	2.9%	2.9%	2.8%
Irrigation	0.9%	-25.0%	7.1%
Commercial	2.1%	2.5%	1.7%
Large Volume Commercial	0.1%	2.5%	0.0%
Wholesale	-3.2%	2.5%	-3.7%
Private Fire Protection	4.9%	4.8%	0.0%
Pulp Mill	2.5%	2.5%	2.5%

Residential Fixed/Variable Rate Recovery



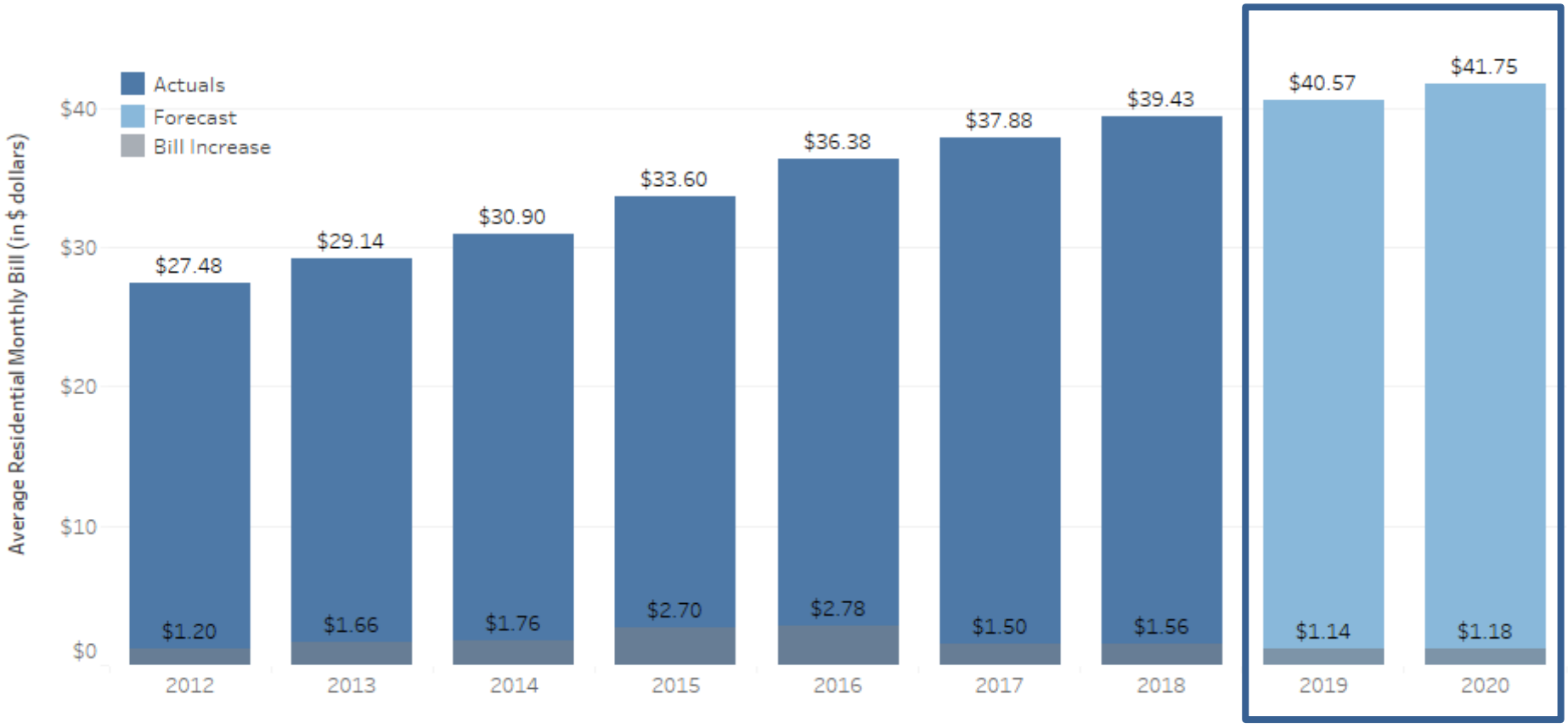
The projected 2019-2020 recovery ratio is for Scenario 1. Scenario 2's projected recovery ratio would be 42% variable and 58% fixed.

Sample Monthly Bill Increase (Scenario 1)



The monthly average residential bill assumes water consumption of 7 CCF per month on a 5/8 meter.

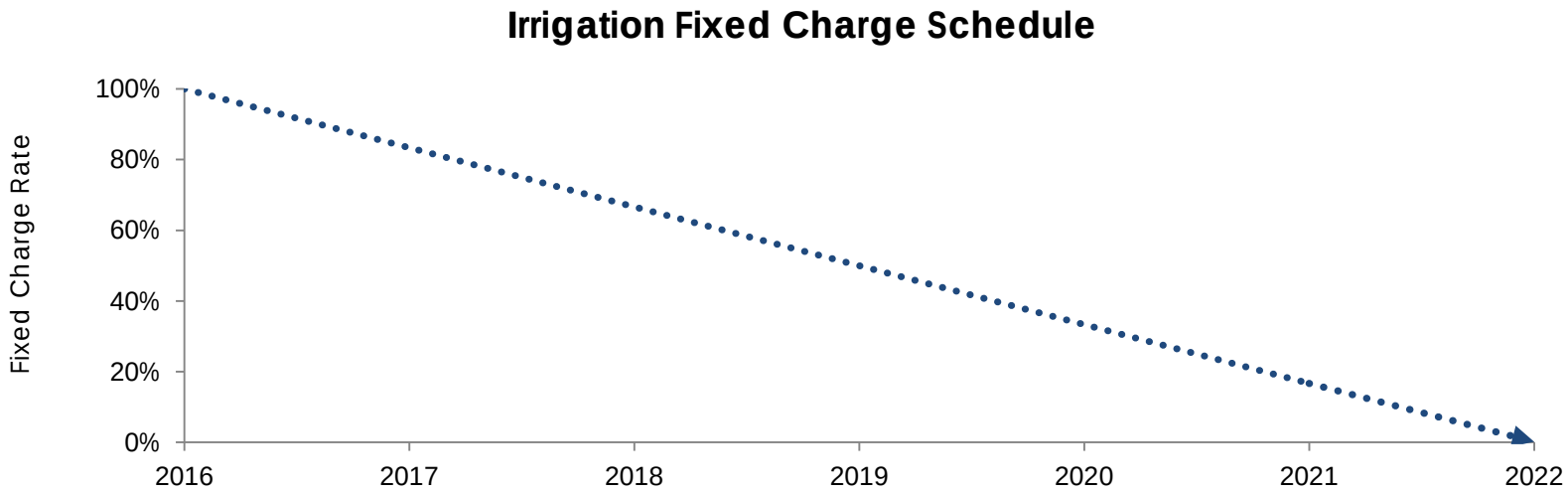
Sample Monthly Bill Increase (Scenario 2)



The monthly average residential bill assumes water consumption of 7 CCF per month on a 5/8 meter.

Policy Decision

Irrigation Timeline



Fixed charge to gradually phase out over 6 years, transitioning to a purely variable rate structure by 2022

Objectives

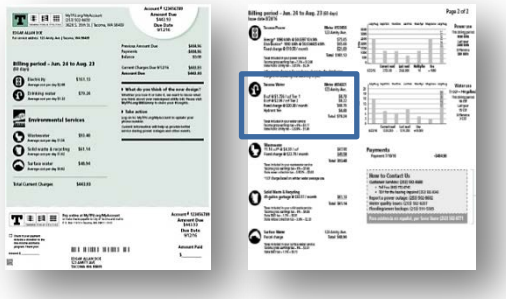
- Improve operational efficiency by reducing truck rolls
- Strengthen seasonal conservation signal
- Will position the utility well to explore AMI-supported rate design alternatives

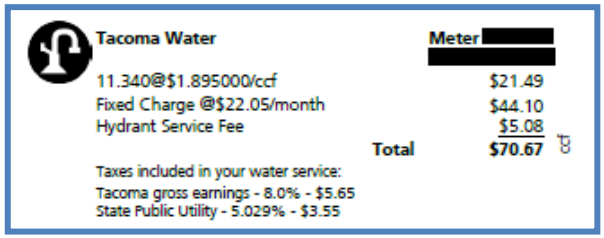
Policy Decision

Public Fire Protection: Inside City

- Recover public fire protection costs from the fixed component of the rate, and remove "Hydrant Service Fee" as a separate line item on the bill

Sample 2018 Residential Bi-Monthly Bill





2019 Sample Bill (itemized)	
11.340 @ $2.014/ccf	$ 22.84
Fixed Charge @ $22.05/month	$ 44.10
Hydrant Service Fee @ 2.71/month	$ 5.42
Total	**$ 72.36**

2019 Sample Bill (combined)	
11.340 @ $2.014/ccf	$ 22.84
Fixed Charge @ $24.76/month	$ 49.52
Total	**$ 72.36**

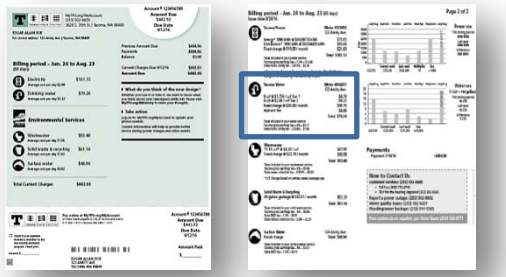
TACOMA WATER
TACOMA PUBLIC UTILITIES

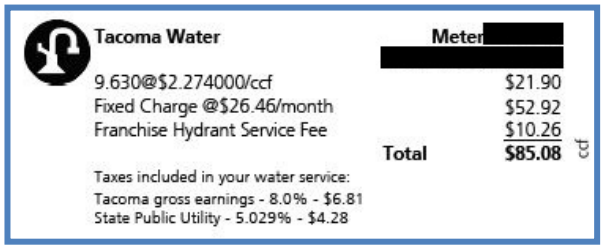
Policy Decision

Public Fire Protection: Outside City

- Recover public fire protection costs from the fixed component of the rate, and remove "Hydrant Service Fee" as a separate line item on the bill
- Retire "Historical Service Component" for outside city customers

Sample 2018 Residential Bi-Monthly Bill





2019 Sample Bill (itemized)	
9.630 @ $2.417/ccf	$ 23.28
Fixed Charge @ $26.46/month	$ 52.92
Hydrant Service Fee (Historical) @ $0.00/month	$ -
Hydrant Service Fee (Ongoing) @ $3.47/month	$ 6.94
Total	**$ 83.14**

2019 Sample Bill (combined)	
9.630 @ $2.417/ccf	$ 23.28
Fixed Charge @ $29.93/month	$ 59.86
Total	**$ 83.14**

TACOMA WATER
TACOMA PUBLIC UTILITIES

Appendix

Proposed TMC Rate Schedules for 2019 – 2020 (Scenario 1)

Residential Service

Residential, Commercial & Large Volume - Ready to Serve Charge				
Meter Size (Inches)	Inside City of Tacoma		Outside City of Tacoma	
	Rate Effective Dates			
	1/1/19	**1/1/20**	**1/1/19**	**1/1/20**
5/8	$24.76	$24.94	$29.93	$30.20
3/4	$35.79	$35.97	$43.17	$43.44
1	$57.84	$58.02	$69.63	$69.90
1.5	$112.96	$113.14	$135.77	$136.04
2	$179.11	$179.29	$215.15	$215.42
3	$333.46	$333.64	$400.37	$400.64
4	$553.96	$554.14	$664.97	$665.24
6	$1,105.21	$1,105.39	$1,326.47	$1,326.74
8	$1,766.71	$1,766.89	$2,120.27	$2,120.54
10	$2,538.46	$2,538.64	$3,046.37	$3,046.64
12	$3,723.65	$3,723.83	$4,468.60	$4,468.87

Residential Service				
Range in CCF (100 cubic feet)	Inside City of Tacoma		Outside City of Tacoma	
	Rate Effective Dates			
	1/1/19	**1/1/20**	**1/1/19**	**1/1/20**
For each CCF of water consumption during the winter months of October through and including May	$2.014	$2.138	$2.417	$2.566
For the first five CCF of water consumption per month during the summer months of June through and including September	$2.014	$2.138	$2.417	$2.566
For each CCF of water consumption over five CCF during the summer months of June through and including September	$2.518	$2.673	$3.021	$3.208

Proposed TMC Rate Schedules for 2019 – 2020 (Scenario 1)

Commercial and Industrial Service

Residential, Commercial & Large Volume - Ready to Serve Charge				
Meter Size (Inches)	Inside City of Tacoma		Outside City of Tacoma	
	Rate Effective Dates			
	1/1/19	**1/1/20**	**1/1/19**	**1/1/20**
5/8	$24.76	$24.94	$29.93	$30.20
3/4	$35.79	$35.97	$43.17	$43.44
1	$57.84	$58.02	$69.63	$69.90
1.5	$112.96	$113.14	$135.77	$136.04
2	$179.11	$179.29	$215.15	$215.42
3	$333.46	$333.64	$400.37	$400.64
4	$553.96	$554.14	$664.97	$665.24
6	$1,105.21	$1,105.39	$1,326.47	$1,326.74
8	$1,766.71	$1,766.89	$2,120.27	$2,120.54
10	$2,538.46	$2,538.64	$3,046.37	$3,046.64
12	$3,723.65	$3,723.83	$4,468.60	$4,468.87

Commercial and Industrial - General Service				
Range in CCF (100 cubic feet)	Inside City of Tacoma		Outside City of Tacoma	
	Rate Effective Dates			
	1/1/19	**1/1/20**	**1/1/19**	**1/1/20**
For each CCF of water consumption	$2.204	$2.286	$2.645	$2.743

Commercial and Industrial - Large Volume Service*				
Range in CCF (100 cubic feet)	Inside City of Tacoma		Outside City of Tacoma	
	Rate Effective Dates			
	1/1/19	**1/1/20**	**1/1/19**	**1/1/20**
For each CCF of water consumption	$1.783	$1.785	$2.140	$2.142
* Customers may qualify for this rate based on an established consumption history greater than 65,000 CCF annually.				

Proposed TMC Rate Schedules for 2019 – 2020 (Scenario 1)

Parks and Irrigation Service

Parks & Irrigation - Ready to Serve Charge				
Meter Size (Inches)	Inside City of Tacoma		Outside City of Tacoma	
	Rate Effective Dates			
	1/1/19	**1/1/20**	**1/1/19**	**1/1/20**
5/8	$11.03	$7.35	$13.23	$8.82
3/4	$16.54	$11.03	$19.85	$13.23
1	$27.57	$18.38	$33.08	$22.05
1.5	$55.13	$36.75	$66.15	$44.10
2	$88.20	$58.80	$105.84	$70.56
3	$165.38	$110.25	$198.45	$132.30
4	$275.63	$183.75	$330.75	$220.50
6	$551.25	$367.50	$661.50	$441.00
8	$882.00	$588.00	$1,058.40	$705.60
10	$1,267.88	$845.25	$1,521.45	$1,014.30
12	$1,860.47	$1,240.31	$2,232.57	$1,488.38

Parks and Irrigation Service				
Range in CCF (100 cubic feet)	Inside City of Tacoma		Outside City of Tacoma	
	Rate Effective Dates			
	1/1/19	**1/1/20**	**1/1/19**	**1/1/20**
For each CCF of water consumption	$3.732	$3.985	$4.478	$4.782

Proposed TMC Rate Schedules for 2019 – 2020 (Scenario 1)

Wholesale Service

Wholesale - Ready to Serve Charge		
Meter Size (Inches)	Rate Effective Dates	
	1/1/19	**1/1/20**
5/8	$26.46	$26.46
3/4	$39.70	$39.70
1	$66.16	$66.16
1.5	$132.30	$132.30
2	$211.68	$211.68
3	$396.90	$396.90
4	$661.50	$661.50
6	$1,323.00	$1,323.00
8	$2,116.80	$2,116.80
10	$3,042.90	$3,042.90
12	$4,465.13	$4,465.13

Wholesale Constant Use Customer		
Range in CCF (100 cubic feet)	Rate Effective Dates	
	1/1/19	**1/1/20**
Per CCF for winter months (October - May)	$2.038	$1.967
Per CCF for summer months (June - September)	$2.548	$2.459

Wholesale Summer Season, Peaking		
Range in CCF (100 cubic feet)	Rate Effective Dates	
	1/1/19	**1/1/20**
For each CCF of water consumption	$3.821	$3.688

Proposed TMC Rate Schedules for 2019 – 2020 (Scenario 1)

Fire Protection Service

Fire Protection Service - Ready to Serve Charge					
Meter Size (Inches)	Inside City of Tacoma		Outside City of Tacoma		Maximum Allowable Monthly Water Usage for Testing and Leakage, CCF
	Rate Effective Dates				
	1/1/19	**1/1/20**	**1/1/19**	**1/1/20**	
2	$27.33	$28.70	$32.80	$34.44	2.99
3	$39.79	$41.79	$47.75	$50.15	2.99
4	$66.48	$69.82	$79.78	$83.78	2.99
6	$149.13	$156.60	$178.96	$187.92	2.99
8	$265.48	$278.79	$318.58	$334.55	2.99
10	$415.25	$436.07	$498.30	$523.28	2.99
12	$664.19	$697.48	$797.03	$836.98	2.99

Fire Protection Service				
Range in CCF (100 cubic feet)	Inside City of Tacoma		Outside City of Tacoma	
	Rate Effective Dates			
	1/1/19	**1/1/20**	**1/1/19**	**1/1/20**
For each CCF of water consumption	$3.960	$3.960	$4.752	$4.752

Proposed TMC Rate Schedules for 2019 – 2020 (Scenario 1)

Pulp Mill

Billing Components	1/1/19	1/1/20
Distribution Charge per Month	$82,296.95	$84,354.37
Supply Charge/CCF	$0.7620256	$0.7810762
Daily or Monthly Excess Water Usage Charge (Commercial and Industrial - Large Volume Rate) per CCF	$1.783	$1.785

Proposed TMC Rate Schedules for 2019 – 2020 (Scenario 2)

Residential Service

Residential, Commercial & Large Volume - Ready to Serve Charge				
Meter Size (Inches)	Inside City of Tacoma		Outside City of Tacoma	
	Rate Effective Dates			
	1/1/19	**1/1/20**	**1/1/19**	**1/1/20**
5/8	$25.31	$26.06	$30.59	$31.54
3/4	$36.61	$37.65	$44.15	$45.45
1	$59.21	$60.82	$71.27	$73.26
1.5	$115.71	$118.74	$139.07	$142.76
2	$183.51	$188.25	$220.43	$226.17
3	$341.71	$350.44	$410.27	$420.80
4	$567.71	$582.14	$681.47	$698.84
6	$1,132.71	$1,161.39	$1,359.47	$1,393.94
8	$1,810.71	$1,856.49	$2,173.07	$2,228.06
10	$2,601.71	$2,667.44	$3,122.27	$3,201.20
12	$3,816.46	$3,912.83	$4,579.97	$4,695.67

Residential Service				
Range in CCF (100 cubic feet)	Inside City of Tacoma		Outside City of Tacoma	
	Rate Effective Dates			
	1/1/19	**1/1/20**	**1/1/19**	**1/1/20**
For each CCF of water consumption during the winter months of October through and including May	$1.948	$2.003	$2.338	$2.404
For the first five CCF of water consumption per month during the summer months of June through and including September	$1.948	$2.003	$2.338	$2.404
For each CCF of water consumption over five CCF during the summer months of June through and including September	$2.435	$2.504	$2.923	$3.005

Proposed TMC Rate Schedules for 2019 – 2020 (Scenario 2)

Commercial and Industrial Service

Residential, Commercial & Large Volume - Ready to Serve Charge				
Meter Size (Inches)	Inside City of Tacoma		Outside City of Tacoma	
	Rate Effective Dates			
	1/1/19	**1/1/20**	**1/1/19**	**1/1/20**
5/8	$25.31	$26.06	$30.59	$31.54
3/4	$36.61	$37.65	$44.15	$45.45
1	$59.21	$60.82	$71.27	$73.26
1.5	$115.71	$118.74	$139.07	$142.76
2	$183.51	$188.25	$220.43	$226.17
3	$341.71	$350.44	$410.27	$420.80
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6	$1,132.71	$1,161.39	$1,359.47	$1,393.94
8	$1,810.71	$1,856.49	$2,173.07	$2,228.06
10	$2,601.71	$2,667.44	$3,122.27	$3,201.20
12	$3,816.46	$3,912.83	$4,579.97	$4,695.67

Commercial and Industrial - General Service				
Range in CCF (100 cubic feet)	Inside City of Tacoma		Outside City of Tacoma	
	Rate Effective Dates			
	1/1/19	**1/1/20**	**1/1/19**	**1/1/20**
For each CCF of water consumption	$2.159	$2.195	$2.591	$2.634

Commercial and Industrial - Large Volume Service*				
Range in CCF (100 cubic feet)	Inside City of Tacoma		Outside City of Tacoma	
	Rate Effective Dates			
	1/1/19	**1/1/20**	**1/1/19**	**1/1/20**
For each CCF of water consumption	$1.782	$1.782	$2.138	$2.138
* Customers may qualify for this rate based on an established consumption history greater than 65,000 CCF annually.				

Proposed TMC Rate Schedules for 2019 – 2020 (Scenario 2)

Parks and Irrigation Service

Parks & Irrigation - Ready to Serve Charge				
Meter Size (Inches)	Inside City of Tacoma		Outside City of Tacoma	
	Rate Effective Dates			
	1/1/19	**1/1/20**	**1/1/19**	**1/1/20**
5/8	$11.03	$7.35	$13.23	$8.82
3/4	$16.54	$11.03	$19.85	$13.23
1	$27.57	$18.38	$33.08	$22.05
1.5	$55.13	$36.75	$66.15	$44.10
2	$88.20	$58.80	$105.84	$70.56
3	$165.38	$110.25	$198.45	$132.30
4	$275.63	$183.75	$330.75	$220.50
6	$551.25	$367.50	$661.50	$441.00
8	$882.00	$588.00	$1,058.40	$705.60
10	$1,267.88	$845.25	$1,521.45	$1,014.30
12	$1,860.47	$1,240.31	$2,232.57	$1,488.38

Parks and Irrigation Service				
Range in CCF (100 cubic feet)	Inside City of Tacoma		Outside City of Tacoma	
	Rate Effective Dates			
	1/1/19	**1/1/20**	**1/1/19**	**1/1/20**
For each CCF of water consumption	$3.732	$3.985	$4.478	$4.782

Proposed TMC Rate Schedules for 2019 – 2020 (Scenario 2)

Wholesale Service

Wholesale - Ready to Serve Charge		
Meter Size (Inches)	Rate Effective Dates	
	1/1/19	**1/1/20**
5/8	$27.12	$27.80
3/4	$40.68	$41.71
1	$67.80	$69.52
1.5	$135.60	$139.02
2	$216.96	$222.43
3	$406.80	$417.06
4	$678.00	$695.10
6	$1,356.00	$1,390.20
8	$2,169.60	$2,224.32
10	$3,118.80	$3,197.46
12	$4,576.50	$4,691.93

Wholesale Constant Use Customer		
Range in CCF (100 cubic feet)	Rate Effective Dates	
	1/1/19	**1/1/20**
Per CCF for winter months (October - May)	$2.033	$1.956
Per CCF for summer months (June - September)	$2.541	$2.445

Wholesale Summer Season, Peaking		
Range in CCF (100 cubic feet)	Rate Effective Dates	
	1/1/19	**1/1/20**
For each CCF of water consumption	$3.812	$3.668

Proposed TMC Rate Schedules for 2019 – 2020 (Scenario 2)

Fire Protection Service

Fire Protection Service - Ready to Serve Charge					
Meter Size (Inches)	Inside City of Tacoma		Outside City of Tacoma		Maximum Allowable Monthly Water Usage for Testing and Leakage, CCF
	Rate Effective Dates				
	1/1/19	**1/1/20**	**1/1/19**	**1/1/20**	
2	$27.33	$28.70	$32.80	$34.44	2.99
3	$39.79	$41.79	$47.75	$50.15	2.99
4	$66.48	$69.82	$79.78	$83.78	2.99
6	$149.13	$156.60	$178.96	$187.92	2.99
8	$265.48	$278.79	$318.58	$334.55	2.99
10	$415.25	$436.07	$498.30	$523.28	2.99
12	$664.19	$697.48	$797.03	$836.98	2.99

Fire Protection Service				
Range in CCF (100 cubic feet)	Inside City of Tacoma		Outside City of Tacoma	
	Rate Effective Dates			
	1/1/19	**1/1/20**	**1/1/19**	**1/1/20**
For each CCF of water consumption	$3.960	$3.960	$4.752	$4.752

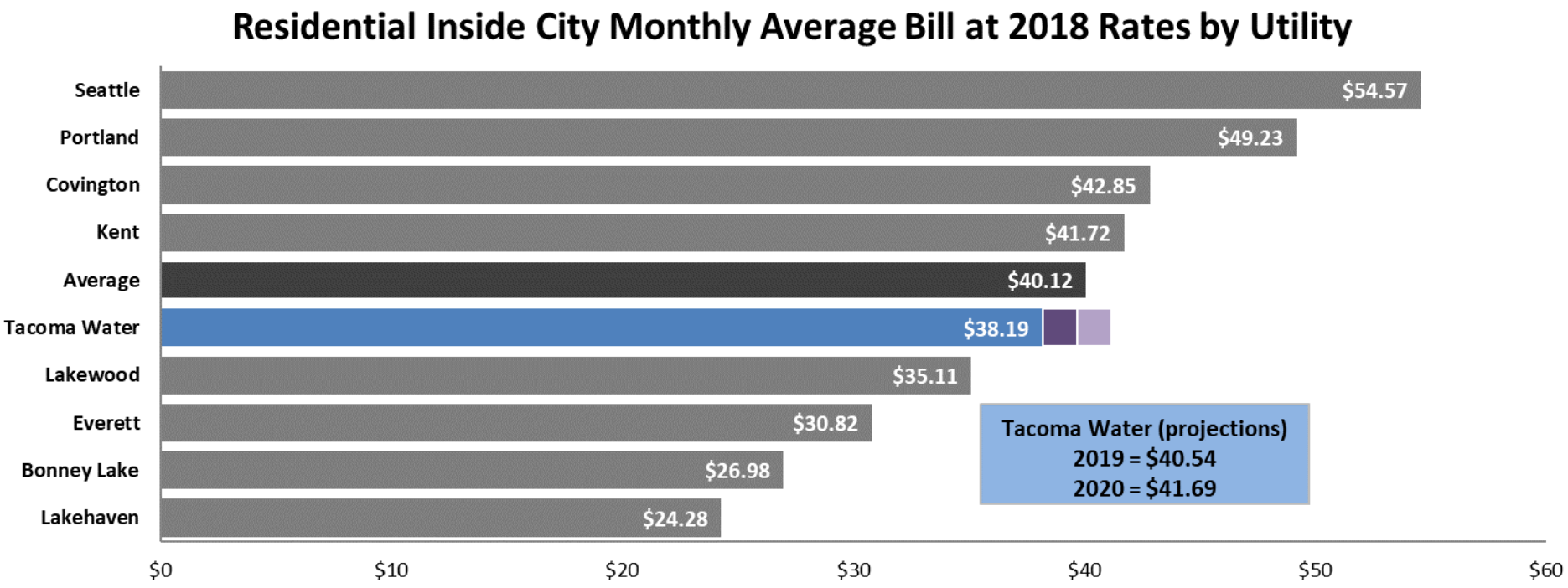
Proposed TMC Rate Schedules for 2019 – 2020 (Scenario 2)

Pulp Mill

Billing Components	1/1/19	1/1/20
Distribution Charge per Month	$82,296.95	$84,354.37
Supply Charge/CCF	$0.7620256	$0.7810762
Daily or Monthly Excess Water Usage Charge (Commercial and Industrial - Large Volume Rate) per CCF	$1.782	$1.782

Bill Comparison

Residential Inside City of Tacoma



ASSUMPTIONS: 5/8" Meter with 6 CCF per month demand in winter for 8 months and 9 CCF per month demand in summer for 4 months.

TACOMA WATER
TACOMA PUBLIC UTILITIES