2023/2024
Budget, LRFP, COSA, and Rates

Presented by Financial Stewardship to the Public Utility Board on August 10, 2022
## Agenda

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<th>Presenter</th>
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</tr>
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<td>Jodi Collins</td>
</tr>
</tbody>
</table>
# Budget and Rate Development Overview

Good work and milestones completed in support of a responsible budget and rate proposal for 2023/2024.

## Foundational Preparation
- Developed & presented 2021 Water Long-Range Financial Plan (LRFP)
- Presented Budget Strategy & Overview to PUB
- Reviewed & Updated Water Rate & Financial Policy Aligned with PUB Strategic Directives
- Budget & Rate Workshop, PUB Supplemental Briefings, & GPFC Updates

## Preliminary Budget Development
- Initial O&M, Capital & Non-Rate Revenue Budget Developed
- Updated Demand Forecast & Water Sales at Existing Rates
- Preliminary Proposal Informed Revenue Requirement & LRFP

## Long-Range Financial Plan
- Updated Financial Forecast & Assumptions
- Developed Financial Strategy & Scenarios
- Recommending Gradual System Average Rate Adjustments Over the Planning Period

## Cost of Service Analysis & Rate Design
- Allocated Expenses & Phased-in Adjustments
- Recommending Class Rate Adjustments
- Balanced Revenue Stability, Class Equity & Conservation
- Developed Recommendation

## Customer Outreach
- Conducted Customer Listening Session
- Developing Plan & Story with Public Affairs & Communication
- Scheduling Customer Outreach Engagements for August/September

## PUB Feedback & Approvals
- Presenting Preliminary Budget Proposal, Rate Design, & LRFP 8/10/2022
- Updated Budget & Rate Proposal to be Presented to PUB 9/28/2022
- Final Approvals in October/November
Challenges and Risks

- **Ongoing Impacts from 2020 Budget Development Cycle**
  - Lower rate adjustment in 2021: loss of about $500k every year going forward
  - Lean budget and deferred resource requests for the 2021/22 budget: catch-up

- **Workforce, Inflation, and Supply Chain Issues**
  - Recruiting and retaining employees
  - Higher operational costs: from rent and utilities to fleet maintenance and fuel
  - Long-lead times and increased costs for certain supplies and materials

- **Uncertainties**
  - Aging receivables collection
  - Final Class & Compensation market adjustments for non-represented staff
  - General wage increases and market adjustments for represented staff
  - Costs for business system investments & innovation (SAP replacement, advanced analytics, access to data, enterprise resource management)
  - Long-term economic assumptions such as inflation and interest rates
Drivers, Impacts, Cost Savings and Mitigation

We strive to mitigate challenges and keep rates as low as is responsible to ensure that our rates remain affordable.

**Budget Drivers and Impacts**

- Personnel expenses up $9.4 million or 14.8%
- Supplies, Services, & Other Charges up $6.5 million or 20.1%
- Capital budget down $5.5 million
- Assessments up $6.6 million or 22.1%
- Rate adjustments 4% each year 2023 & 2024
- Rate adjustments cover 54% of O&M increases

**Cost Savings and Mitigation**

- Vacancy Factor deduction
  - Review & prioritize FTE requests
- Prioritization & risk management
  - Balance internal & contract resources
- Capital carry-forward factor
  - Asset management & prioritized requests
  - Defers, delay based on resources
- Discussions with internal service providers
  - Water has limited ability to mitigate
- Long-term planning and gradual approach
  - Expanded customer assistance
- 46% of O&M increases and 100% of Capital
  - Funded with intentional spend down of reserves

*Expenses are preliminary*
Ratemaking Process

**How Big is the Pie?**
- **Revenue Requirement**
  - Identifies revenue needed to sustain operations, according to financial plan

**How to Slice the Pie?**
- **Cost-of-Service Analysis (COSA)**
  - Divides revenue requirement into total amount to be paid by each customer class

**How to Eat the Pie?**
- **Rate Design**
  - Sets rate structure to bill each customer
    - (e.g. fixed charge per month, volumetric rate per CCF, etc.)
2023/2024 Preliminary O&M Budget

- Overall Operations & Maintenance (O&M) is about $21.1M higher in 2023/2024 than in 2021/2022
- Personnel costs higher by $9.4M, increases in both salaries and benefits
- Supplies, Services & Other Charges increase $6.5M due to multiple factors
- Assessments are over 16% of total budget
- Taxes are a function of revenues, approximately 14% of total budget
- Debt Service payoff of 2020 Bank Loan Refunding in 2023

*Expenses are preliminary
Personnel Budget Overview

- Overall personnel is about **$9.4M** higher in 2023/2024 than in 2021/2022

- Of the $9.4M, **73%** is for existing positions and the remaining **27%** is for 18 new positions

- Incorporates deferred market wage adjustments, general wage increases, increased benefits

- Assumes updated contracts for represented positions and Class & Comp study for non-represented

- Budget includes **$7.1M** deduction to salaries and benefits for vacancy factor

*Expenses are preliminary*
Supplies, Services, and Other Charges

- Overall supplies, services, and other charges is about $6.5M higher in 2023/2024 than in 2021/2022.
- Utilities, rent, insurance, fees, fleet maintenance and fuel are about $15.9M, over 40% of the total.
- Challenges: inflation of commodities, contract service cost increases, supply chain delays.
- Mitigation: updating plans, understanding risks, internal knowledge & assignments.

*Expenses are preliminary.
2023/2024 Preliminary Capital Budget

- Overall capital is about $5.5M lower in 2023/2024 than in 2021/2022

- Funding sources vary by capital project
  - $25.4M from Operating reserves
  - $48.8M from Capital reserves

- 2021/2022 Budget reappropriation of $19.1M

- Asset management tools & processes, project prioritization matrix based on values & constraints, resource planning

*Expenses are preliminary*
2023/2024 Preliminary Capital Budget

Projects don’t end on December 31st.

- Overall reappropriation is about $19.1M from 2021/2022
- Budget for projects in flight (carry forward) may have reappropriated and new money
- Newly implemented “Carry Forward Factor” reduces capital budget by 10% to account for reappropriated spending in the next biennium

*Expenses are preliminary
Non-Rate Revenue

Non-rate revenue helps buy down rate adjustments.

- Overall decrease is about $552K from 2021/2022
- 10% of total of our revenue
- Cascade Water Alliance contract revenue is limited term, drops to $1.0M per year in 2030 and ends in 2042
- Build America Bond subsidies (BABs) offset interest expense for certain taxable revenue bonds
Forecasting Accounts

- Accounts are projected to grow by approximately 0.8% per year for the next 10 years.
- Outside-city residential accounts make up approximately 80% of this growth.
Forecasting Demand

• Demand per account for residential customers is still slightly declining

• Account growth is expected to keep total demand steady

• Total Demand is projected to grow by approximately 0.03% per year over the next 10 years
Rate Revenue at Existing Rates

- Absent any rate adjustments, rate revenue is projected to increase by 0.5% per year over the upcoming biennium.

<table>
<thead>
<tr>
<th>Total Revenues</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Family</td>
<td>$ 50,445,815</td>
<td>$ 50,819,694</td>
<td>$ 51,196,101</td>
</tr>
<tr>
<td>Multi-Family</td>
<td>12,447,182</td>
<td>12,554,586</td>
<td>12,657,058</td>
</tr>
<tr>
<td>Commercial</td>
<td>11,451,075</td>
<td>11,327,118</td>
<td>11,211,641</td>
</tr>
<tr>
<td>Irrigation</td>
<td>3,476,119</td>
<td>3,426,565</td>
<td>3,378,283</td>
</tr>
<tr>
<td>Wholesale</td>
<td>2,898,400</td>
<td>2,898,400</td>
<td>2,898,400</td>
</tr>
<tr>
<td>Private Fire Protection</td>
<td>3,365,302</td>
<td>3,394,472</td>
<td>3,422,691</td>
</tr>
<tr>
<td>Public Fire - Tacoma</td>
<td>2,290,711</td>
<td>2,297,033</td>
<td>2,303,258</td>
</tr>
<tr>
<td>Public Fire - Outside City</td>
<td>1,968,929</td>
<td>2,001,442</td>
<td>2,034,141</td>
</tr>
<tr>
<td>Pulp Mill</td>
<td>7,314,878</td>
<td>7,314,878</td>
<td>7,314,878</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$ 97,890,739</strong></td>
<td><strong>$ 98,266,516</strong></td>
<td><strong>$ 98,648,780</strong></td>
</tr>
</tbody>
</table>
Revenue Requirement and Financial Forecasting

The two-year budget informs the long-range plan and the long-range plan informs the two-year rate proposal.

Budget & Revenue Requirement Development

- O&M
- Capital
- Non-rate revenue
- Demand forecast

Financial Forecasting

- Cost escalators
- Financial modeling
- Financial strategy

Rates

- System average rate proposal
Long-Term Planning and Financial Forecasting

Establishing the base case to ensure gradualism.

Rates

• 4.0% annual system average rates for 2023/2024

Coverage

• Continue meeting debt service coverage requirements

Liquidity

• Management of reserves while meeting liquidity requirements
Long-Term Planning and Financial Forecasting

Development of possible scenarios / uncertainties with similar ending rate trajectories and financial metrics.

Base Case Assumptions
- Inflationary Costs (general, labor, etc)
- Incremental Franchise Fees
- System Account Growth
- Demand Growth
- Interest Earnings

Scenario Development
- Loss of Large Customer
- Higher General Wage Increase
- Wholesale Opportunities
Long-Term Planning and Financial Forecasting

Anticipating projects, optimizing debt, and stabilizing rates for the long-term.

We base these projections on available information as of 2022. If there are known circumstances that we need to plan for in 10 years and beyond, stable rate adjustments will put us in a good position for potential pinch points such as unforeseen revenue loss and increases in debt service.
Ratemaking Process

How Big is the Pie?
Revenue Requirement
Identifies revenue needed to sustain operations, according to financial plan

How to Slice the Pie?
Cost-of-Service Analysis (COSA)
Divides revenue requirement into total amount to be paid by each customer class

How to Eat the Pie?
Rate Design
Sets rate structure to bill each customer (e.g. fixed charge per month, volumetric rate per CCF, etc.)
Cost of Service Analysis (COSA)

Allocates utility expenses equitably by assigning them to those who cause the costs.

Provides bill stability and prevents large rate spikes by phasing in adjustments.

The cost-of-service methodology is a well-tested industry standard.
Tacoma Water Customer Classes

**Residential**
- Single-family and multifamily residences
  - 99,615 accounts
  - $66.2M revenue

**Commercial**
- Small & medium sized businesses such as flower shops and small offices
  - 4,720 accounts
  - $11.8M revenue

**Large Volume**
- Large industries which use more than 65,000 CCF per year, such as U.S. Oil and Boeing
  - 6 accounts
  - $2.3M revenue

**Irrigation**
- Dedicated irrigation meter for primarily outdoor use such as Point Defiance Park
  - 1,047 accounts
  - $4.2M revenue

**Private Fire**
- Warehouses with large fire sprinkling systems
  - 1,583 accounts
  - $4.0M revenue

**Wholesale**
- Other utilities such as City of Fife and Firgrove Mutual Water Company
  - 22 accounts
  - $2.7M revenue

**Pulp Mill**
- WestRock in the Tideflats
  - 1 account
  - $7.3M revenue
**Revenue Requirement & Cost of Service**

- Tacoma Water is recommending a 4.0% system average rate increase.
- This increase assumes that the Cost-of-Service is phased in.
- Recommendation is to apply the adjustment to both the fixed charge and volumetric rates (where applicable).

<table>
<thead>
<tr>
<th>Class</th>
<th>Current Revenue</th>
<th>Revenue Requirement</th>
<th>Additional Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>135,903,852</td>
<td>144,169,820</td>
<td>8,665,968</td>
</tr>
<tr>
<td>Commercial</td>
<td>22,897,630</td>
<td>23,904,463</td>
<td>1,006,833</td>
</tr>
<tr>
<td>Large Volume</td>
<td>4,465,247</td>
<td>4,613,057</td>
<td>147,810</td>
</tr>
<tr>
<td>Irrigation</td>
<td>6,804,848</td>
<td>7,286,631</td>
<td>481,783</td>
</tr>
<tr>
<td>Private Fire</td>
<td>6,817,163</td>
<td>6,886,840</td>
<td>69,677</td>
</tr>
<tr>
<td>Wholesale</td>
<td>5,796,799</td>
<td>5,947,217</td>
<td>150,418</td>
</tr>
<tr>
<td>Pulp Mill</td>
<td>14,629,756</td>
<td>15,819,245</td>
<td>889,489</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>196,915,296</strong></td>
<td><strong>208,327,274</strong></td>
<td><strong>11,411,978</strong></td>
</tr>
</tbody>
</table>

**Proposed Annual Rate Adjustments by Customer Class**

- Residential: 4.2%
- Commercial: 2.9%
- Large Volume: 2.2%
- Irrigation: 4.7%
- Private Fire: 0.7%
- Wholesale: 1.7%
- Pulp Mill: 4.0%

Annual System Average Rate Adjustment: 4.0%
Ratemaking Process

How Big is the Pie?
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How to Eat the Pie?
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Sets rate structure to bill each customer (e.g. fixed charge per month, volumetric rate per CCF, etc.)
Rate-Design

Mismatched Costs and Revenues

Water utilities exist in a capital-intensive business environment.

Over 95% of costs are “fixed” in the very short-run; power, treatment, and solids handling are the only variable costs on this time horizon.

Rate-design can be used to contribute to revenue stability, improve equity across customer classes, and send a conservation signal.

Water System Cost and Revenue Recovery Structure:

- Variable, 5%
- Fixed, 95%
- Variable, 50%
- Fixed, 50%

Cost represents expenses in terms of percentage. Revenue represents anticipated water sales in terms of percentage.
The recommended changes result in an increase of $1.73 per month in 2023 and $1.80 per month in 2024 for the average inside-city residential customer.

Assumes a 5/8” meter, 6 CCF (4,488 gallons) of consumption during Winter months and 9 CCF (6,732 gallons) of consumption during summer months.
Enhanced Customer Assistance

- For customers enrolled in our Bill Credit Assistance Plan (BCAP), automatic monthly bill credits will reduce their drinking water bill by $4, offsetting rate adjustments for the next biennium.

- In 2023, BCAP customers will see a net reduction in their drinking water bill (assuming similar usage).

- In 2024, monthly drinking water bills will look similar to 2021 monthly bills (assuming similar usage).
Tacoma Water Retail Rates are Competitive

“Current retail rates are competitive for the region even with proposed rate increases and provide management with good revenue-raising flexibility.”

- Standard & Poor’s Tacoma Water Credit Rating Review
Expansion of Grant & Loan Program

Program Details

• Grant or loan to replace customer side aged or leaking water line associated with advanced meter deployment
• $5,000 grant for income-eligible and/or $5,000 loan with zero interest for 84 months

Program Status May 2021 through May 2022

• 1 customer has received a grant of $5,000
• What can we do to expand the program and help more customers?

Program Expanded June 2022

• Eliminate 45-day window and advanced meter enabled program eligibility
• Establish a tiered funding priority
• Immediate results: 1 grant & 1 loan completed; 1 grant & 1 loan in progress
Next Steps

**PUB and Council Preliminary Updates**
August 2021-August 2022
- Rate Making Background with GPFC Leadership
- Budget and Rate Workshop with PUB
- Budget & Financial Updates with GPFC & PUB

**TPU PUB Budget and Rate Development Updates**
April 2022-September 2022
- Budget Strategy Previous
- Cost of Service Analysis & Rate Design Reviews
- Budget & Rate Proposal Reviews

**TPU and GG Budget Collaboration**
September 2022-October 2022
- TPU Budgets Incorporated in GG Budget
- Public Outreach & Communication for Utility Rates
- GG Internal Service Assessments Incorporated in TPU Budgets

**PUB & Council Budget & Rate Reviews**
October 2022-November 2022
- GPFC Study Session
- Joint PUB/Council Study Session
- Staff Responses to PUB & Council Feedback

**PUB & Council Budget & Rate Approvals**
October 2022-November 2022
- Public Hearings
- Preliminary Budget Filed with City Clerk
- PUB 1st & 2nd Readings for TPU Budget & Rates
- City Council 1st & 2nd Readings for City and TPU Budgets & Rates

**2023/24 Budget & Rates Final**
November 28, 2022
- Final Budget Adopted with Ordinance and Filed with City Clerk
- IT & Customer Service Rate Updates
- TMC Updates Communicated & Posted
Appendix
# Appendix A; Assessments

<table>
<thead>
<tr>
<th>Sender</th>
<th>Service Provider</th>
<th>2021-2022 (Current)</th>
<th>2023-2024 (Draft-AC)</th>
<th>Difference AC</th>
<th>Difference AC (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Government</td>
<td>City Attorney’s Office</td>
<td>843,259</td>
<td>953,669</td>
<td>110,411</td>
<td>13.2%</td>
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<tr>
<td></td>
<td>City Council</td>
<td>41,265</td>
<td>44,063</td>
<td>2,798</td>
<td>6.8%</td>
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<td></td>
<td>City Manager</td>
<td>501,658</td>
<td>649,310</td>
<td>147,653</td>
<td>29.4%</td>
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<td></td>
<td>Community &amp; Economic Development</td>
<td>148,716</td>
<td>152,179</td>
<td>3,463</td>
<td>2.3%</td>
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<tr>
<td></td>
<td>Finance</td>
<td>2,255,988</td>
<td>2,829,397</td>
<td>573,409</td>
<td>25.4%</td>
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<tr>
<td></td>
<td>Hearing Examiner</td>
<td>19,409</td>
<td>-</td>
<td>(19,409)</td>
<td>(100.0%)</td>
</tr>
<tr>
<td></td>
<td>Human Resources</td>
<td>1,442,051</td>
<td>1,559,840</td>
<td>97,789</td>
<td>6.8%</td>
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<tr>
<td></td>
<td>Information Technology</td>
<td>4,565,285</td>
<td>5,856,576</td>
<td>1,291,291</td>
<td>28.3%</td>
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<tr>
<td></td>
<td>Public Works</td>
<td>831,928</td>
<td>848,442</td>
<td>16,513</td>
<td>2.0%</td>
</tr>
<tr>
<td></td>
<td>Tacoma Fire</td>
<td>33,214</td>
<td>24,087</td>
<td>872</td>
<td>2.6%</td>
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<tr>
<td>Total</td>
<td></td>
<td>10,682,773</td>
<td>12,907,564</td>
<td>2,224,791</td>
<td>20.8%</td>
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<tr>
<td>Tacoma Public Utilities</td>
<td>Administration</td>
<td>1,246,597</td>
<td>1,602,469</td>
<td>355,872</td>
<td>28.5%</td>
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<tr>
<td></td>
<td>Customer Services</td>
<td>10,840,127</td>
<td>13,309,375</td>
<td>2,469,247</td>
<td>22.8%</td>
</tr>
<tr>
<td></td>
<td>Public Affairs</td>
<td>2,775,646</td>
<td>3,199,900</td>
<td>423,254</td>
<td>15.2%</td>
</tr>
<tr>
<td></td>
<td>Support Services</td>
<td>910,096</td>
<td>1,212,549</td>
<td>302,453</td>
<td>33.2%</td>
</tr>
<tr>
<td></td>
<td>Utility Technology Services *</td>
<td>3,566,801</td>
<td>4,377,132</td>
<td>810,331</td>
<td>22.7%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>19,340,268</td>
<td>23,701,424</td>
<td>4,361,157</td>
<td>22.5%</td>
</tr>
</tbody>
</table>

*Utility Technology Services includes $114,547 of RWSS budget
### Appendix B: Fixed, Variable Adjustments by Class

<table>
<thead>
<tr>
<th>Customer Class</th>
<th>Annual</th>
<th>2023</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average</td>
<td>Fixed</td>
<td>Variable</td>
</tr>
<tr>
<td>Residential</td>
<td>4.2%</td>
<td>4.0%</td>
<td>5.4%</td>
</tr>
<tr>
<td>Commercial</td>
<td>2.9%</td>
<td>4.0%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Large Volume</td>
<td>2.2%</td>
<td>4.0%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Irrigation</td>
<td>4.7%</td>
<td>0.0%</td>
<td>4.7%</td>
</tr>
<tr>
<td>Private Fire</td>
<td>0.7%</td>
<td>0.7%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Wholesale</td>
<td>1.7%</td>
<td>4.0%</td>
<td>0.6%</td>
</tr>
<tr>
<td>Pulp Mill</td>
<td>4.0%</td>
<td>4.0%</td>
<td>4.0%</td>
</tr>
</tbody>
</table>
Appendix C; The Future Remains Uncertain

Fed’s Powell: Russia’s war on Ukraine will worsen inflation
By CHRISTOPHER RUBAEBER Associated Press, Updated March 3, 2022, 3:11 p.m.

FINANCE
Nobel economists were dead wrong on inflation: Don’t expect an apology
By CARL SCHRAMM, OPINION CONTRIBUTOR - 04/05/22 1:33 PM ET
THE VIEWS EXPRESSED BY CONTRIBUTORS ARE THEIR OWN AND NOT OF THE HILL

Opinion: The Fed is charting a course to stagflation and recession
By Lawrence M. Summers
Contributing columnist
March 15, 2022 at 8:28 a.m. EDT

Opinion: Don’t listen to Larry Summers on inflation
March 24, 2022 at 12:20 p.m. EDT

What the 2008 Financial Crisis Tells Us About Today’s Inflation Surge
Inflation models that central banks have used since the 1990s may no longer be adequate, an international monetary official warns
Appendix D; Inflation and the Utility

Inflationary pressures have varying degrees of impact, depending on the goods or services consumed.

<table>
<thead>
<tr>
<th>INFLATION</th>
<th>CONSUMER</th>
<th>UTILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Most Commonly Used Index</strong></td>
<td>Consumer Price Index (CPI)</td>
<td>Engineering News-Record Construction Cost Index (CCI)</td>
</tr>
<tr>
<td></td>
<td>The Consumer Price Index (CPI) is a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services.</td>
<td>The CCI uses 200 hours of common labor, multiplied by the 20-city average rate for wages and fringe benefits.</td>
</tr>
<tr>
<td><strong>Other Commonly Used Indices</strong></td>
<td>• CPI: U.S. City Average (CPIAUCSL)</td>
<td>• ENR Building Cost Index (BCI)</td>
</tr>
<tr>
<td></td>
<td>• CPI: Less Food and Energy (CPILFESL)</td>
<td>• ENR Materials Price Index (MPI)</td>
</tr>
<tr>
<td></td>
<td>• Gross Domestic Product Implicit Price Deflator (GDPDEF)</td>
<td>• ENR Seattle Construction Cost Index (CCI)</td>
</tr>
<tr>
<td></td>
<td>• ENR Seattle Business Cost Index (BCI)</td>
<td></td>
</tr>
</tbody>
</table>

Budget and rates reflect the inflation experienced by a utility, but customers compare utility rate adjustments to general inflation.
Appendix E; CPI vs CCI vs Rates

<table>
<thead>
<tr>
<th>Year</th>
<th>Consumer Price Index (Jan to Jan)</th>
<th>CPI (Indexed)</th>
<th>Construction Cost Index (Jan to Jan)</th>
<th>CCI (Indexed)</th>
<th>Tacoma Water Rate Adjustment (Annual)</th>
<th>Rates (Indexed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>-0.2%</td>
<td>1.00</td>
<td>2.4%</td>
<td>1.02</td>
<td>4.0%</td>
<td>1.04</td>
</tr>
<tr>
<td>2016</td>
<td>1.2%</td>
<td>1.01</td>
<td>0.1%</td>
<td>1.03</td>
<td>4.0%</td>
<td>1.08</td>
</tr>
<tr>
<td>2017</td>
<td>2.5%</td>
<td>1.04</td>
<td>2.2%</td>
<td>1.05</td>
<td>4.0%</td>
<td>1.12</td>
</tr>
<tr>
<td>2018</td>
<td>2.1%</td>
<td>1.06</td>
<td>7.7%</td>
<td>1.13</td>
<td>4.0%</td>
<td>1.17</td>
</tr>
<tr>
<td>2019</td>
<td>1.5%</td>
<td>1.07</td>
<td>4.9%</td>
<td>1.18</td>
<td>2.5%</td>
<td>1.20</td>
</tr>
<tr>
<td>2020</td>
<td>2.5%</td>
<td>1.10</td>
<td>0.9%</td>
<td>1.20</td>
<td>2.5%</td>
<td>1.23</td>
</tr>
<tr>
<td>2021</td>
<td>1.4%</td>
<td>1.11</td>
<td>6.0%</td>
<td>1.27</td>
<td>1.5%</td>
<td>1.25</td>
</tr>
<tr>
<td>2022</td>
<td>7.5%</td>
<td>1.20</td>
<td>6.8%</td>
<td>1.35</td>
<td>2.0%</td>
<td>1.27</td>
</tr>
</tbody>
</table>
## Appendix F: Inflation and Labor

<table>
<thead>
<tr>
<th>Year</th>
<th>General Wage Increase*</th>
<th>Consumer Price Index (Jan to Jan)</th>
<th>General Wage Increase (Indexed)</th>
<th>CPI (Indexed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>2.5%†</td>
<td>-0.2%</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>2016</td>
<td>2.0%</td>
<td>1.2%</td>
<td>1.02</td>
<td>1.01</td>
</tr>
<tr>
<td>2017</td>
<td>2.5%†</td>
<td>2.5%</td>
<td>1.05</td>
<td>1.04</td>
</tr>
<tr>
<td>2018</td>
<td>3.0%</td>
<td>2.1%</td>
<td>1.08</td>
<td>1.06</td>
</tr>
<tr>
<td>2019</td>
<td>3.0%</td>
<td>1.5%</td>
<td>1.11</td>
<td>1.07</td>
</tr>
<tr>
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<td>3.0%</td>
<td>2.5%</td>
<td>1.14</td>
<td>1.10</td>
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<tr>
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<td>1.0%</td>
<td>1.4%</td>
<td>1.15</td>
<td>1.12</td>
</tr>
<tr>
<td>2022</td>
<td>2.0%</td>
<td>7.5%</td>
<td>1.18</td>
<td>1.20</td>
</tr>
</tbody>
</table>

*Non-represented employees
†1% to 5% depending on classification