Overview and Timeline

Tacoma Public Utilities
Public Utility Board Retreat | March 30, 2022
BUDGET AND RATES TIMELINE

4/27
Budget Overview
TPU | Rail | Water

5/11
Power Budget Overview
Updated LRFP, Revenue Requirement

6/29
Power COSA & Rate Recommendations

7/13
Rail
Revenue & Rates

7/27
Water
COSA & Rate Recommendations

Tacoma Public Utility Board

<table>
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<tr>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
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<tbody>
<tr>
<td></td>
<td>City Council Engagement</td>
<td></td>
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<td></td>
<td>Military protocol (May – Sep)</td>
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<td>Public Outreach &amp; Communications</td>
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<td></td>
<td>Listening Sessions Begin</td>
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</tbody>
</table>
BUDGET AND RATES TIMELINE

Tacoma Public Utility Board

<table>
<thead>
<tr>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
</tr>
</thead>
<tbody>
<tr>
<td>City Council Engagement</td>
<td>Military protocol (May – Sep)</td>
<td>PUB</td>
<td>11/15 City Council 1st Reading</td>
</tr>
<tr>
<td>Public Outreach &amp; Communications (cont.)</td>
<td></td>
<td>10/11 Joint Study Session Utility Budget &amp; Rates</td>
<td>10/26 PUB Budget &amp; Rates Adoption</td>
</tr>
<tr>
<td>8/24 Preliminary Budget Review Rail</td>
<td>9/28 Preliminary Budget Review TPU</td>
<td>10/12 PUB Budget &amp; Rates Consideration</td>
<td>11/22 City Council 2nd Reading</td>
</tr>
<tr>
<td></td>
<td>PUB Public Hearing</td>
<td></td>
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</tr>
</tbody>
</table>
CITY COUNCIL ENGAGEMENT

• Regular engagement with Gov’t Performance and Finance Committee (GPFC)

• Topic overviews similar to TPU Board topics
  • Feb: Water Long-range Financial Plan (LRFP)
  • April: Power LRFP
  • May: Ratemaking Principles
  • June: Rate Design and Rates/Financial Policies
  • July: Services for Income Constrained / Affordability
  • Aug: Customer Outreach
  • Sep: Prelim Budget and Rates
  • Oct: Budget/Rate Proposals
MEANINGFUL PUBLIC OUTREACH

Planning underway for effective public outreach

• Build upon lessons learned from previous experience
• Coordinate with Environmental Services (ES)
• Timeframe – mid to late summer and early fall with Budget/Rate information

Outreach led by Community and Government Relations

John Gaines
Community Relations Manager
- Neighborhood Councils
- Community stakeholders
- Broad customer base

LaTasha Wortham
Regional Relations Manager
- Local and regional governments
- Tribal relations
- City policymakers

Clark Mather
CGR Manager
MEANINGFUL PUBLIC OUTREACH

Outreach Approach

• Hybrid approach to include in-community and virtual options is likely
• Engage with multiple groups, associations, government entities, etc.
• Relay value proposition
• Joint materials with ES and in non-English options
• Expand efforts to include earlier **Listening Sessions**
  • Partner with community organizations
  • Likely virtual with guided discussion and questions
  • TPU and ES Directors jointly engage with customers
  • Target around the end of May
• Provide feedback to Policy Makers, TPU leaders and planners
EQUITY IN BUDGETING

Effort lead by Office of Equity & Human Rights with collaborative participation across all TPU Divisions.

- Establish universal goal
- Assess performance, gaps, and drivers
- Develop targeted strategies to remove barriers

Our budget and rate-setting process ensures all households are delivered safe, reliable, and affordable utility services and have equitable access to resources.
TPU Rate and Financial Policies

Tacoma Public Utilities

Public Utility Board Retreat | March 30, 2022
Purpose and Guiding Objectives

Purpose

The Water Rate and Financial Policy gives direction to planning decisions and helps ensure that the Tacoma Water provides an adequate supply of safe, clean water to all customers efficiently, reliably, and at the lowest possible cost consistent with prudent utility management.

Guiding Objectives

b. Water Rates Should Be As Low As Is Responsible.
c. Water Rates Shall Be Fair.
d. Water Rates Should Be Stable and Understandable.
e. Water Rates Should Be the Product of Customer Involvement.
## Policy Summary

<table>
<thead>
<tr>
<th>Revenue Requirement</th>
<th>Cost-Based</th>
<th>Stable Rates</th>
<th>Financial Metrics</th>
<th>Rate Adjustments</th>
<th>Affordability</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Regular reviews with full study every two years</td>
<td>• Cost-of-Service Study determines the cost of serving each customer class</td>
<td>• Water Rates Should Be As Low As Is Responsible</td>
<td>• 60 days of current budgeted expenditures</td>
<td>• Sufficient to meet Tacoma Water budgets</td>
<td>• Special consideration for low-income senior and/or disabled customers</td>
</tr>
<tr>
<td>• Study includes projected revenue, expenses and capital improvements</td>
<td>• Allocates class responsibility for projected expenses of the system</td>
<td>• Water Rates Should Be Stable and Understandable</td>
<td>• Capital: $2M minimum in SDC Fund and 1% of original plant in Capital Reserve</td>
<td>• Revenue collected to maintain financial sufficiency</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• To the extent possible, apply gradualism in rate adjustments</td>
<td>• Senior Debt Service Coverage above 1.50x</td>
<td>• Short and long-run rate impacts presented</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• All In Debt Service Coverage above 1.25x</td>
<td>• Minimize long-run costs to rate-payer</td>
<td></td>
</tr>
</tbody>
</table>
Our review shows the current Water Rate and Financial Policy is sound.

Quantitative Review

- In 2020, we developed a risk reserve analysis model, providing rigor behind our recommended reserve levels*

- Staff will conduct annual updates to incorporate actual results and updated forecasts to retest policy sufficiency

- Based on our modeling, we have sufficient balances in our Operating and Capital Funds to absorb modeled risks and planned spend-down over the next 10 years

- We recommend maintaining our current policy levels for minimum reserve requirements

* Our work with the risk reserve analysis model is discussed in more detail in our Tacoma Water Long-Range Financial Plan (LRFP)

Qualitative Review

- In 2018, we enhanced our policy addressing the needs of low-income customers

- In 2020, the COVID pandemic highlighted other areas of continued focus that warrant potential policy additions

- The positive financial impact of our commitment to gradual rate adjustments is substantiated in our LRFP published in 2021

- Equity, affordability, and climate change are addressed in the PUB Strategic Directives (SDs), Council Strategic Priorities, and emphasized in Tacoma Water but not explicitly stated in our policy

- We recommend highlighting long-term financial planning, gradualism, equity, affordability, and climate change in our policy as areas of focus
Recommended Changes

We recommend updates to modernize existing language and highlight important areas of focus.

A. Water Rates Should Ensure Adequate Supply

- Objective: Operationalize equity and call out climate change.
- Proposed Language: “Climate change and equity will be incorporated when planning for improvements to the water system.”

B. Water Rates Should Be As Low As Is Responsible

- Objective: Emphasize focus on affordability for customers.
- Proposed Language: “As rate adjustment proposals are developed, we will monitor the affordability of our rates and assess ways to mitigate impacts to our customers.”

C. Water Rates Shall Be Fair

- Objective: Expand the current language to include programs.
- Proposed Language: “The needs of low-income, senior, and disabled water customers will be considered when establishing rate levels, providing bill assistance, developing and implementing customer programs, and offering financial education.”

D. Water Rates Should Be Stable and Understandable

- Objective: Emphasize objective on gradual rate adjustments through long-term financial planning.
- Proposed Language: “D. Water Rates Should Be Stable and Understandable [Based on Long-Term Financial Planning and Adjusted Gradually]”
Purpose

Tacoma Power’s Electric Rate and Financial Policy gives direction to future short-term and long-term planning decisions and helps ensure that reliable service is provided to all customers at the lowest possible cost consistent with prudent utility management.

Elements

I. Rate Setting Objectives  
II. Rate Review Process  
III. Rate Setting Policies  
IV. Financial Targets and Rate Setting Practices  
V. Rate Stabilization Fund
## Policy Summary

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</tr>
</thead>
<tbody>
<tr>
<td>• Monthly reviews with full study every two years</td>
<td>• Cost-of-Service Study determines the cost of serving each customer class</td>
<td>• Power rates should be stable and not exceed general inflationary trends</td>
<td>• 90 days of current budgeted expenditures</td>
<td>• Sufficient to meet Tacoma Power budgets</td>
<td>• Special consideration for low-income senior and/or disabled customers</td>
</tr>
<tr>
<td>• Study includes projected load, hydro conditions, revenues, expenses and capital improvements</td>
<td>• Allocates class responsibility for projected expenses of the system</td>
<td>• To the extent possible, apply gradualism in rate adjustments</td>
<td>• Debt Service Coverage above 1.50x based on adverse water revenue projections</td>
<td>• Revenue collected to maintain financial sufficiency</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Debt Service Coverage above 1.80x based on average water revenue projections</td>
<td></td>
<td>• Short and long-run rate impacts evaluated</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Liquidity levels set to maintain or improve current debt ratings at AA-level</td>
<td></td>
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</tbody>
</table>
Quantitative Review

• In 2010, we funded a Rate Stabilization Fund* (RSF) to stabilize rates and maintain AA-rated utility metrics.

• Staff conducts annual updates to incorporate actual results and updated forecasts to retest the sufficiency of the RSF balance.

• Based on our modeling, we do not need to change our policies around liquidity or the Rate Stabilization Fund balance.

*Our plans to use the Rate Stabilization Fund is discussed in more detail in our Tacoma Power Long-Range Financial Plan (LRFP).

Qualitative Review

• In 2018, we enhanced our policy addressing the needs of low-income customers and formalized our Long-Range Financial Plan with a long-term view on gradual rate adjustments.

• Equity, affordability, and climate change are addressed in the PUB Strategic Directives (SDs), Council Strategic Priorities, but were not explicitly stated in Tacoma Power’s policy.

• We recommend highlighting long-term financial planning, gradualism, equity, affordability, and climate change in our policy.
Recommended Changes

We recommend updates to modernize existing language and highlight important areas of focus.

I. A. Serving Customer Needs in a Competitive Electric Industry

• Objective: Operationalize equity
• Proposed Language: “Tacoma Power’s financial planning and rate-setting process aims to deliver to all households safe, reliable, and affordable electric services and provide equitable access to information.”

I. G. Low Income Customers

• Objective: Emphasize our focus on affordability for customers.
• Proposed Language: “As rate adjustments are made, we will monitor the affordability of our rates and assess ways to mitigate impact on customers.”
• Objective: Expand current language to include customer programs.
• Proposed Language: “The needs of low-income, senior, and disabled water customers will be considered when establishing rate[s] levels, providing bill assistance, developing and implementing customer programs and offering financial education.”

I. D. Review of Major Commitments

• Objective: Call out climate change
• Proposed Language: “Climate change will be incorporated when planning for improvements to the electric system.”

I. J. Rate Stability

• Objective: Emphasize our objective on gradual rate adjustments through long-term financial planning.
• Proposed Language: “To the extent possible, rate adjustments should be stable and consistent level across years, adjusted gradually through long-term financial planning, and not exceed general inflationary trends.”
Purpose

The Tacoma Rail Rate Policy provides for rates adequate to ensure the operation, maintenance, and construction of the Department’s railway system while providing safe, cost effective, and reliable service to customers within Tacoma Rail’s service area.

Guiding Objectives

Rail rates should:
A. Be cost based and adequate to recover costs
B. Be stable
C. Ensure sufficient resource planning and acquisition for reliable service while being as competitive as possible
D. Have a customer involvement and review process
# Policy Summary

<table>
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<th>Financial Metrics</th>
<th>Rate Adjustments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rates reviewed every two years at a minimum</td>
<td>Utilize an average embedded cost-of-service methodology</td>
<td>To the extent possible, rate adjustments will not exceed general inflationary trends</td>
<td>Minimum cash balance of 60 days of current budgeted expenditures</td>
<td>Rates based on best estimates of rail volume</td>
</tr>
<tr>
<td>Full revenue requirement study performed every two years</td>
<td>Allocates rate class responsibility for projected expenses of the system</td>
<td>The term of debt financing will not be longer than the useful life of the capital project</td>
<td>The limit of debt to total assets shall be set up to a maximum of 40%</td>
<td>Rates will be designed to meet the changing needs of the customer</td>
</tr>
<tr>
<td></td>
<td>Fuel surcharges shall be based on actual costs over an established threshold</td>
<td></td>
<td>Debt service coverage ratio shall be at least 1.5x</td>
<td>Rate classes may be established by blending customers</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>The character and volume of service is used to apportion costs, developing rates, and tariff revisions</td>
</tr>
</tbody>
</table>
Recommended Changes

We recommend updates to modernize existing language and highlight important areas of focus.

B. Rail rates should be stable.
- Objective: Establish a Volume Investment Fund
- Proposed Language: Rates will be based on best estimates of rail volume. Operating revenue surpluses due to unanticipated rail volume growth may be applied to the Volume Investment Fund, a subfund of Tacoma Rail’s enterprise fund. To establish a balance to the fund, an initial $500,000 will be transferred to the subfund when created.

C. Rail rates should ensure sufficient resource planning and acquisition for reliable service while being as competitive as possible.
- Objective: Establish a Volume Investment Fund
- Proposed Language: Tacoma Rail maintains a Volume Investment Fund, a subfund of Tacoma Rail’s enterprise fund, that provides revenue requirement flexibility during times of unanticipated economic downturns or capital spending that may be used to offset the necessity of rate increases. Use of the fund will be limited to:
  a. Workforce stability to ensure adequate staffing retention for service reliability and resiliency for when rail volumes rebound after a downturn.
  b. Locomotive upgrades to sustain Tacoma Rail’s environmental leadership goals.
  c. Timely acquisition, replacement and upgrade of infrastructure and capital assets.
  d. Grant or debt matching opportunities.
TPU Ratemaking Principles and Cost-of-Service Analysis

Tacoma Public Utilities
Public Utility Board Retreat | March 30, 2022
Policies & Principles

Section 1
Principles Review

Legal
• Fair
• Just
• Reasonable
• Non-Discriminatory

Industry-Standard
• Revenue Stability
• Cost Causation
• Economic Efficiency
• Equity
• Bill Stability

TPU Principles
• Affordability
• Environment
• Public Involvement
Legislative Policy: Environment

Protection of the Natural Environment
Including:
- Stream protection
- Fishery resources
- Wildlife habitat

Clean Hydropower
Statutory recognition of hydropower as a renewable, emissions-free resource.

Carbon Reduction
- Resolution U-11258: Board direction to reduce carbon footprint of facilities and vehicles
- Emissions reductions to be the most efficient for the least cost
- Sensitive to rate pressures, especially on lower-income customers
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 Make the Pie?
Rate Design
Sets rate structure to bill each customer (e.g. customer charge per month, energy charge per kWh, usage charge per CCF [100 cubic feet; 748 gallons], etc.)
Revenue Requirement

Section 2
Ratemaking Process

Revenue Requirement
“How much money do we need?”
- Identifies revenues needed to sustain operations
- Supported by Long-Range Financial Plan (LRFP)
- Ensures achievement of key policy objectives

Cost-of-Service Analysis
“How do customers pay?”

Rate Design
“How do customers pay?”

How Big is the Pie?
Revenue Requirement Takeaways

- Compares forecasted costs to projected revenues prior to any rate adjustments.
- Conducted every two years as part of the budgeting and ratemaking cycle.
- Supports long-range financial plans.
Long-Range Financial Plan (LRFP)

What is in a LRFP?
• Forecasting
• Strategic planning
• Decision-making tools
• Action steps

Why is a LRFP needed?
• Support proactive, informed financial management
• Provide a long-term view of financial health
• Plan for and mitigate risk
• Ensure achievement of policy objectives
• Good financial stewardship

How do we build our LRFP?
• Rate & Financial Policies
• Sensitivities & priorities
• Revenue requirement analysis

Where is the LRFP?
• Formalized into a document
• Most recent Power version: October 1, 2021
• Most recent Water version: January 12, 2022
Revenue Requirement

Requirement

- Identify financial obligations
- Evaluate sufficiency of current rates
- Develop strategy for sustainability

Development

- O&M Expense Forecast
- Capital Expense Forecast
- Revenue at Existing Rates
- Non-Rate Revenue Forecast

Any revenue requirement deficiencies must be addressed by rate adjustments.

Analysis

- Base Case
- Scenario Development

Scenarios provide a range of likely future rate adjustment paths.
Is Additional Revenue Needed?

Power Example

- Load Forecast
  - Retail Revenue
  - Wholesale Revenue
  - Purchased Power
  - Revenue-Funded Capital
  - Personnel + Other O&M

Projected expenses

Forecasted revenues at current rates

Rate Increase
Revenue Requirement Example

- Capital
- Taxes
- Debt Service
- Assessments
- Supplies
- Personnel

Budget

Revenue at Existing Rates

- Residential
- Commercial
- Wholesale
- Private Fire
- Large Volume
- Irrigation

‘Controllable’ O&M

- Supplies
- Personnel

‘Uncontrollable’ O&M

- Assessments
- Debt Service
- Taxes

Next Two Years of CIP

Rate Adjustment

Rent, Interest, Contracts

Non-Rate Revenue

Revenue Requirement Example
Cost-of-Service Overview

Section 3
Ratemaking Process

Revenue Requirement
“How much money do we need?”

Cost-of-Service Analysis
“How do customers pay?”

Rate Design
“How much money do we need?”

• Determines total to be paid by each customer class

How to Slice the Pie?
COSA Primary Takeaways

- 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
COSA Overview

What Proportion of Utility Cost is Caused by the Class?

- Put similar customers together in classes
- Update data: usage, customer count, etc.
- Functionalization: What utility function is associated with this cost? (e.g. distribution)
- Classification: What customer characteristic drives this cost? (e.g. usage at peak, number of customers)
- Allocation: How much of the costs should be assigned to each customer class?

COSA Model

- Dollar value to be collected from each rate class
- Utility prices that collect revenues based on contribution to utility cost

Results
COSA Data-Flow Diagram

Functionalization

- Financial & Operational Data (FERC & NARUC)
- Production
- Transmission
- Distribution
- A&G
- Customer Service

Classification

- Cost Driver Information
- Demand, Peak Related
  - Residential
  - Commercial
  - Industrial
- Energy, Base Related
  - Residential
  - Commercial
  - Industrial
- Customer Related
  - Residential
  - Commercial
  - Industrial

Allocation to Customer Classes

- Demand & Account Data
  - Residential Class
  - Commercial Class
  - Industrial Class

Fixed vs. Variable Cost Information

Rate Design

Total Expense

Financial & Operational Data (FERC & NARUC)
Example of COSA Decisions

Some costs can reasonably be allocated with different allocators. Industry-standard allocators have been developed for many cost types. However, judgement is always required when choosing the most appropriate allocator. Reasonable people may disagree on the exact details of selected allocators.

### Illustrative Example:

Utility XZY is allocating $1,000,000 of customer meter cost to two classes. Each customer has one meter, but commercial meters are twice as expensive.

<table>
<thead>
<tr>
<th></th>
<th>Customers</th>
<th>Allocation 1: Customer Count</th>
<th>Meter Cost</th>
<th>Allocation 2: Weighted Customer Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>150,000</td>
<td>75%</td>
<td>$50.00</td>
<td>60%</td>
</tr>
<tr>
<td>Commercial</td>
<td>50,000</td>
<td>25%</td>
<td>$100.00</td>
<td>40%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>200,000</td>
<td>100%</td>
<td><strong>$300,000</strong></td>
<td>100%</td>
</tr>
</tbody>
</table>

![Bar Chart Illustrating Cost Allocation](chart.png)
Using COSA Results

**Residential** $$$$$
**Commercial** $$
**Industrial** $$$
**Fire Protection** $
**Wholesale** $$
**Street Lighting** $

The utility may deviate from these results if:

- One class receives a much larger/smaller increase than the average
- Strategic directive considerations
- An increase would harm some customers in a class more than others
- Non-financial considerations (*e.g.* environmental incentives, economic development)
Benefit to Customers & Utilities

Legal Implications/Considerations

• Industry Standards and Precedents
• Cost-causation lens is widely recognized as meeting Legal standard of fair, just, reasonable, and non-discriminatory
• Matching revenue drivers to cost drivers promotes revenue stability and utility financial health
• Economic Efficiency
• Equity
• Bill Stability
Tacoma Rail Ratemaking

Section 4
Tariff Rates

• Switching Tariff
  ▪ Line haul and related railcar movement charges
  ▪ Last updated 1/1/2022
    ▪ 3% increase in line haul rates

• Demurrage Tariff
  ▪ For the undue detention of railcars
  ▪ $60/day after credits
  ▪ Last updated 1/1/2018
Line Haul Rate Analysis

- **Intermodal $54**
  - Less labor intensive
  - More volume
  - Yard management
  - Higher track wear
  - Service windows
  - Fewer destinations
  - Do not incur demurrage

- **Commercial $324 & $377**
  - Labor intensive
  - Lower volume
  - Less track utilization
  - Lower track wear
  - Daily service
  - More destinations
  - Subject to demurrage

- **Unit Trains $238 & $318**
  - Hybrid of Intermodal & Commercial
  - Oil spill response plan & drills
Demurrage Analysis

49 CFR § 1333.1 - Demurrage defined.
Demurrage is a charge that both compensates rail carriers for the expenses incurred when rail cars are detained beyond a specified period of time (i.e., free time) for loading or unloading, and serves as a penalty for undue car detention to encourage the efficient use of rail cars in the rail network.

• Applies to:
  ▪ Commercial customers
  ▪ Excludes Autos

• Does not apply to intermodal

• Current rate is $60/day excluding weekend & holidays
  ▪ Prior rate from 1996 was $50/day excluding Sundays and holidays

• Offsets
  ▪ Car hire
    ▪ Intermodal car hire recovered through line haul rates
  ▪ Yard storage and track space
  ▪ Billing & administrative

• Discourages utilization of railroad infrastructure to offset costs of increasing customer facility capacity
Tacoma Water Rate Design

Section 5
Ratemaking Process

Revenue Requirement
“How much money do we need?”

Cost-of-Service Analysis
“What pays what?”

Rate Design
“How do customers pay?”

How to Make the Pie?

- Design rate structure to collect revenue from customers in class
- Set actual cost per CCF, hydrant charge per month, meter charge per month, etc.
Rate Design Primary Takeaways

Rate design is how the utility goes about collecting the cost to serve each class from each class.

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

Fixed cost recovery ratio does not necessarily correlate with higher bills.
Consumption Declines, Costs Stable

The hockey stick projections of the past explains why the utility built the Water system the way it did: to prepare for future growth.

Reliance on expectations of ever-increasing consumption allowed recovery of fixed costs in the variable portion of the rate.

Now, however, conservation measures, improved codes, standards, and more efficient household fixtures are leading to new forecasts of flat or declining water demand.
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.
Ready to Serve Charge

Rate Design Philosophy

The Ready to Serve Charge is intended to recover fixed expenses incurred by the utility in order to maintain minimum amount of distribution system investment and O&M expenses to enable the system to be ready to serve each customer. It must, at a minimum, cover the costs that have no connection to demand (postage, billing, meter reading, administrative and general costs).

TMC 12.10.035 Ability to supply water within City limits.

“All persons wishing to construct any residential premises within the City limits shall be supplied with residential service by the Division subject to the provisions of this chapter and pursuant to RCW 19.27.097”

TMC 12.10.301 Fire hydrant services fee.

“[…] The customer portion of the fire hydrant service fee shall be calculated on a monthly basis, included in the Ready to Serve charge, invoice and collected pursuant to the applicable customer service policies”

Tacoma Water Rate Schedule

Tacoma Water assesses a monthly fixed charge that is based on the customer’s meter size. This is due to the increased infrastructure required to be able to serve customers at the required flow rates and pressures.
Wholesale Ready to Serve Charge

Tacoma Water Rate Schedule

Tacoma Water applies a variable ready to serve charge for each wholesale customer based on their contracted peak capacity. This is a departure from a meter-based ready to serve charge driven by the gap between contracted capacity and actual wholesale consumption.
Uniform Rate Design

Rate Design Philosophy
A uniform rate design may best apply to customer classes whose consumption patterns remain relatively consistent throughout the year or during specific seasons.

Tacoma Water Rate Schedule
Tacoma Water applies a uniform rate design to its irrigation, large volume, peak-use wholesale, and commercial classes. These customers will pay the same amount per CCF, regardless of amount consumed.
A seasonal rate design might best apply to a customer class whose consumption characteristics vary based on weather or seasonality.

Tacoma Water applies a seasonal rate design to its constant-use wholesale class. In the winter season, these customers pay a uniform rate per CCF consumed. In the summer season, these customers pay an increased uniform rate per CCF consumed.
Inclining Block Rate Design

**Rate Design Philosophy**
An inclining block rate design may be best applied when the cost to produce water increases as more water is consumed. It can also be used to send a conservation message to high-water users.

**Tacoma Water Rate Schedule**
Tacoma Water applies a seasonal, block rate design to its residential class. In the winter season, residential customers pay a base rate per CCF consumed. In the summer season, residential customers pay the same base rate per CCF for the first five CCF consumed, and an increased rate for any monthly consumption beyond five CCF.
Outside Customer Rate Design

Rate Design Philosophy
If a public water utility elects or is compelled to provide service to outside customers, it may assume some of the behavior of an investor-owned utility.

Tacoma Water Rate Schedule
Tacoma Water applies a 20% differential to all rates before the addition of any jurisdiction-specific taxes. This is meant to compensate the utility for the risk it bears to serve these customers.

[Graphs showing rate design for outside customers and outside residential customers with rate per CCF and units consumed]
Fixed vs Variable Cost Recovery

More Revenue Stability
Fixed Cost Recovery Does Not Determine Bill

2021 Average Monthly Water Bill for a Single-Family Home

Average: $44.07

- Puyallup: $25.94
- Everett: $33.64
- Lakewood: $38.33
- Tacoma: $41.19
- Bellevue: $54.84
- Portland: $56.07
- Seattle: $58.45

This comparison assumes an average single-family consumes is 6 CCF in winter months and 9 CCF in summer months, with a 5/8" meter.
**Summary**

**Revenue Requirement**
- Compares forecasted costs to projected revenues prior to any rate adjustments.
- Conducted every two years as part of the budgeting and ratemaking cycle.
- Support our long-range financial plans.

**Cost of Service Analysis**
- Allocates utility expenses equitably by assigning them to those who cause the costs.
- Provides bill stability as large swings using this method are rare and can be phased in.
- The cost-of-service methodology is a well-tested industry standard.

**Rate Design**
- Rate design is how the utility goes about collecting the cost to serve each class from each class.
- Each rate design method has advantages and disadvantages.
- Fixed cost recovery ratio does not necessarily correlate with higher bills.
Tacoma Power Rate Design

Section 6
Part One: Basics of Electric Rates
Ratemaking Process

Revenue Requirement
“How much money do we need?”

Cost-of-Service Analysis
“Who pays what?”

Rate Design
“How do customers pay?”

- Design rate structure to collect revenue from customers in class
- Set actual cents per kWh, customer charge per month, etc.
Electric cost causation is more complex because electricity has two concepts of usage: energy and demand.

Hydroelectric cost causation is very different when compared to fossil-fuel cost causation.

Issues can arise when revenue-recovery structure (rate design) differs from cost structure.
Peak versus Total Usage

100 kW \times 1 \text{ hour} = 100 \text{ kWh}

1 \text{ kW} \times 100 \text{ hours} = 100 \text{ kWh}

“How big is the pipe?”

“How much went through the pipe?”

Different peak demands can result in the same total energy, but have different costs for the utility to serve.
Uniquely Low Variable Power Cost

Tacoma Power’s mild climate and hydro-dominated portfolio contribute to low variable costs.

No Scorching Summer Spikes

The Puget Sound region enjoys a relatively temperate climate while other regions of the country swing from freezing in the winter to sweltering in the summer.

The vast majority of American utilities are “summer peaking” utilities. On hot and sunny summer day, other utilities see system load spike dramatically (sometimes doubling from the lowest load to the highest load of a day). The “cold snaps” experienced in Tacoma Power’s territory do not trigger similar peaking behavior.

No Expensive “Peaking” Units

Most utilities must operate expensive “peaking” generating plants to meet peak demand. Peaking generation plants have higher operational costs. When peak load is reduced, the need to run expensive peaking plants (or market purchases) is delayed or avoided.

In contrast, Tacoma Power meets its peaks with hydropower. Although fixed costs might be substantial, Mother Nature provides the fuel for free.
“Marginal fuel cost” is the cost of the fuel that the utility spends to produce an additional unit of energy. This is the utility’s biggest cost increase when a consumer demands an additional unit of energy. It does not include fixed costs, which are costs the utility must pay regardless of how much energy customers demand.

Calculated from the NREL Annual Technology Baseline Cost and Performance Summary, $/MW indicate the average marginal cost of each fuel source.
Hydroelectric projects have a marginal fuel cost of zero. There is very little cost to the utility to when a consumer demands an additional unit of energy beyond the first unit.

Fixed costs include the largest portion of the current Bonneville Power Administration contract, which requires Tacoma to pay certain amounts each month (“take-or-pay” contract).

$/MW indicate the average marginal cost of each fuel source.
The chart below summarizes the major costs of an electric utility, how they are classified, and the type of pricing (rate) structure which most closely aligns with the cause of the cost.

<table>
<thead>
<tr>
<th>COST</th>
<th>CLASSIFICATION</th>
<th>PRICING STRUCTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TYPE</td>
<td>CAUSAL FACTOR(S)</td>
</tr>
<tr>
<td>Purchased Power</td>
<td>Semi-fixed, Variable</td>
<td>Demand, Energy</td>
</tr>
<tr>
<td>Generation</td>
<td>Fixed, Variable</td>
<td>Demand, Energy</td>
</tr>
<tr>
<td>Transmission</td>
<td>Fixed, Semi-fixed</td>
<td>Demand</td>
</tr>
<tr>
<td>Distribution</td>
<td>Fixed, Semi-fixed</td>
<td>Demand, Customers</td>
</tr>
<tr>
<td>A&amp;G</td>
<td>Fixed, Semi-fixed</td>
<td>Demand, Customers</td>
</tr>
</tbody>
</table>
Practice of Rate Design

Two-Part Rate (Requires Simple Meter)

- Costs:
  1: Variable
  2: Fixed or Semi-Fixed

- Rates:
  1: Variable $/kWh
  2: Fixed $/month

- Energy
- Delivery
- Customer Charge

Two-Part Rate Schedules:
- Residential
- Small General Service
- Street Lighting & Traffic Service (some fixtures only)

Three-Part Rate (Requires Demand Meter)

- Costs:
  1: Variable
  2: Semi-Variable $/kW
  2: Fixed $/month

- Rates:
  1: Variable $/kWh
  2: Fixed $/month

- Energy
- Demand
- Customer Charge

Three-Part Rate Schedules:
- General Service
- High-Voltage General
- Contract Industrial
**Fixed & Variable Costs and Revenues**

**CUSTOMER**
- Based upon the *cost to maintain connection* to the system
- Also called “*monthly charge*”
- Does not vary by the amount of electricity used
- Fixed

**ENERGY**
- Based upon the *cost to provide the total* electric energy consumed
- Measured in kilowatt-hours (kWh)
- Varies by the overall amount of electricity used
- Variable

**DEMAND**
- Based upon the *cost to provide peak* electric capacity
- Measured in kilowatts (kW)
- Varies by the maximum amount of electricity used in the billing period
- Semi-fixed
Most of the total Tacoma Power system costs are fixed. At the same time, most of the total Tacoma Power revenues are variable.

From 2019/2020 COSA. Amounts for Click! underrecovery included as a fixed customer item.
Fixed & Variable Retail Revenue

Retail Revenue from the Customer Charge

- Energy & Demand

Proportion of Retail Revenue

- Customer Charge
- Variable
Over the last decade, conservation, improved codes & standards, and new mixes of economic activity are leading to new forecasts of flat or declining loads.

Changes in usage patterns make it more difficult to serve customers and recover costs under existing variable rate structures.
Tacoma Power Rate Design

Section 6
Part Two: Special Issues Regarding Fixed Electric Charges
Fixed Cost Recovery

• Sales figures are declining, which means fixed cost recovery drives rate increases
  • 65% of costs are fixed
  • 18% of revenues are fixed

Policy Issues

• Today, higher-usage customers pay more than their share of the utility’s fixed costs
• Individual customer bill impacts, especially low-income bill impacts, are a key concern

Data from 2019/2020 Cost-of-Service Analysis. Does not include $9.6 million in fixed cost allocated for Click! underrecovery.
Key Rate Design Takeaways

Rate design impacts policy objectives.

- Low-Income Considerations
- Electrification (Decarbonization)
- Distributed Generation (Solar)
Most customer-owned DER systems only produce power part of the day or year. **The utility must provide power during other times** (at night for solar photovoltaic systems, for example). This requires the **utility to provide the same fixed transmission and distribution infrastructure to the DER customer as to a traditional customer.**

If the utility relies on **volumetric** (energy, kWh) charges to recover transmission and distribution infrastructure costs, then the **utility will recover less than the cost** to serve the DER customer.

**EXAMPLE:** Between Hour 8 (8:00 am) and Hour 19 (7:00 pm), the Partial Requirements Customer load drops substantially. The utility avoids any **energy-related costs** that would otherwise be needed to serve that customer. However, the **peak load** (Hour 21, 9:00 pm) is **the same** for the Full Requirements Customer and the Partial Requirements Customer.
Distributed Generation Net Metering

Energy Consumed - Energy Generated = Net Energy

Charge for 40 kWh used at night.
Bill for 40 kWh generated during the day.
Net revenue billed = the customer charge.

No recovery for costs to supply customer at night!

Net Energy Metering is a tariff which pays the customer the retail rate for energy sent back to the grid. No adjustments are made to account for customer consumption and generation patterns within a billing period.

For example, imagine the case of customer with a solar PV system. If the customer uses 40 kWh during every night, and then returns 40 kWh back to the grid during every day, then the customer’s per-kWh bill will be zero. This is despite the fact that the customer did use the utility’s generation, transmission, and distribution grid each day.
Equity in Distributed Generation

DER Adoption Rates are Increasing

- Net metering for systems under 100 kW must be net metered under RCW 80.60.030
- High-income customers are most able to install distributed generation

Utility & Other Customer Effects

- Decreasing energy sales and increasing infrastructure investments require rate increase
- Customers unable to afford distributed generation subsidize distributed customers if rate design does not reflect true costs

Utility “Death Spiral”

- High compensation and falling costs for DER lead to more DER load
- Utility sells few kWh to DER customer(s)
- Utility must recover fixed costs over fewer kWh, so retail rates increase
- DER becomes more lucrative with higher retail rates
Rate Design for Decarbonization

Low-Cost Electrification Encourages Decarbonization

The variable (per-kWh) charge is the “fuel” cost for electrification.

Switching from efficient natural-gas heaters to efficient electric heaters reduces carbon emissions by about 6400 pounds per year.

Switching from an inefficient gasoline-powered car to an electric car reduces carbon emissions by about 6400 pounds per year.
Variable Charges are Fuel Charges

The rates implemented for 2020, after the last COSA, resulted in a 9% higher cost to drive a typical EV compared to equivalent rates with the COSA-suggested customer cost.

The cost to drive would have been an additional 21% higher if the customer charge were reduced to zero.

Example Electric Vehicle: 2017 Nissan Leaf, approximately 3.6 miles per kWh
Conservation Benefits are Limited

**I-937: “Societal Test”**
Tacoma Power is required to acquire a certain amount of conservation each year. The target is set using a “societal test” of cost-effectiveness. This formula does not include the level of retail rates. Therefore, Tacoma Power will seek to acquire the same amount of conservation regardless of rate design.

**Elasticity of Demand**
The responsiveness of individual consumers to price increases is measured by economists as the “elasticity of demand.” If the elasticity of demand for electricity is low (“inelastic”), consumers do not reduce usage (conserve) very much even when prices are raised. Most studies find that electric demand is very inelastic; when rates increase by 1%, then consumers conserve between 0.05% and 0.81%.

**Programs Drive Conservation**
Due to the low elasticity of demand, raising rates is not an efficient way of encouraging conservation. If policymakers wish to expand conservation efforts, they should focus on expanding direct consumer programs (rebates, retrofits, et cetera) and lobbying for tougher codes & standards.
Income Does Not Determine Usage

Tacoma Power service area research and data...

Many low-income customers live in high-use houses or inefficient apartments. They are large users and benefit from a fixed increase. Many other low-income customers live in efficient houses or small-use apartments. They benefit from a variable charge increase.

Tacoma Power estimated the value of houses, apartments, and other dwellings in the service territory from County Assessor data.

Consumption records were pulled for the valued houses, apartments, mobile homes, et cetera.

NO LINK was found between the value of the house, apartment, or other dwelling and the consumption level.
Income Does Not Determine Usage

Average Daily Consumption Across Home Values

Correlation = 0.17
Only 1% of the variation in Tacoma Power’s customers’ electric use can be explained by estimated income. 

In Tacoma Power’s service territory, air conditioning is relatively rare, and many homes, particularly older homes, are heated electrically. It is much harder for low-income residents to forego heating than air conditioning. 

While some low-income individuals live in small apartments with low usage, others live in single-family homes with high usage. Regardless of home type, low-income housing units tend to be less efficient than high-income ones.
Fixed Charges Limit Increase Dollars

Under a fixed-charge increase, the dollar value of the increase for all customers is fixed. Under a variable-charge increase, some high users can see extremely high dollar increases.

• Consider the example of a small user of 600 kWh/month and a large user of 1800 kWh per month with two possible rate designs:
  - $25.00/month, $0.072319/kWh, or
  - $5.00/month, $0.092961/kWh

• The small user pays $7.61/month more under a higher-fixed rate design, while the large user pays $17.16/month more under an higher-variable rate design. The negative impact of the variable rate design is 225% higher.

<table>
<thead>
<tr>
<th>Example</th>
<th>Higher Fixed Charge*</th>
<th>Higher Variable Charge†</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>$68.39</td>
<td>$60.78</td>
<td>$(7.61)</td>
</tr>
<tr>
<td>High</td>
<td>$155.17</td>
<td>$172.33</td>
<td>$17.16</td>
</tr>
</tbody>
</table>
Fixed Charges Reduce Seasonality

High variable costs result in high winter bills.

• Low-income customers in particular have difficulty managing bill volatility.
• Example Rate Designs: $25.00/month, $0.072319/kWh versus $5.00/month, $0.092961/kWh
# Tension In Strategic Directives

<table>
<thead>
<tr>
<th><strong>Equity &amp; Inclusion</strong></th>
<th><strong>Higher Fixed</strong></th>
<th><strong>Higher Variable</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+ low-income, high users benefit</td>
<td>+ low-income, low users benefit</td>
</tr>
<tr>
<td></td>
<td>+ caps dollar impact of rate increase</td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ reduces subsidy to customers that can afford to invest in DER and conservation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Financial Sustainability</strong></th>
<th><strong>Higher Fixed</strong></th>
<th><strong>Higher Variable</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+ better aligns prices with cost-to-serve</td>
<td>+ easier to understand</td>
</tr>
<tr>
<td></td>
<td>+ reduces financial risk of declining loads causing rate increases</td>
<td>- low elasticity of demand for electricity requires very high price signals to significantly impact consumption</td>
</tr>
<tr>
<td></td>
<td>+ increases bill predictability</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Rates</strong></th>
<th><strong>Higher Fixed</strong></th>
<th><strong>Higher Variable</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- difficult for some customers to understand/accept</td>
<td>+ easier to understand</td>
<td></td>
</tr>
<tr>
<td>- low elasticity of demand for electricity requires very high price signals to significantly impact consumption</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Environmental Leadership</strong></th>
<th><strong>Higher Fixed</strong></th>
<th><strong>Higher Variable</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+ encourages electrification</td>
<td>+ encourages solar and other DER</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+ encourages conservation</td>
</tr>
</tbody>
</table>
Tacoma Power Rate Design

Section 6

Part Three: Electric Vehicle Charging Fee Update
Electric Vehicle Charging Fees

Current rate was set in 2014 when Tacoma Power operated 20 charging ports. Tacoma Power will have 93 charging ports in service by end of 2023.

SB5192 requires public charging to use a dollar-per-kWh fee structure. Current dollar-per-hour fee ($2 for 5 hours) does not comply.

City of Tacoma and others look to Tacoma Power for rate setting guidance.
EV Charging Guiding Principles

1. Rate aligns with cost of service

2. Rate is affordable to encourage charger use
   - A core group of regular users is key to making chargers financially viable
   - A high rate that limits use will never recover costs and inhibit EV adoption

3. Rate encourages equitable access
   - Serve multifamily households and garage orphans without home charging
   - Affordable charging options in neighborhoods without access to public charging
EV Charging Proposed Methodology

- Preliminary analysis indicates rate of 16¢ - 20¢ per kWh
- Rulemaking for SB5192 is underway: could change analysis or format
- Expect final proposal in 2023/2024 rates package
- Adjust in future based on evolving usage patterns and/or regulations
Special Considerations for Income-Constrained Customers

Tacoma Public Utilities
Public Utility Board Retreat | March 30, 2022
Demographic Orientation

Power & Water Service Area Trends
People are moving into Pierce County from other states...

**To another state:** 27,136
- Nevada: 644 net from Tacoma (17% of net exit)
- Arizona: 534 net (14%)

**From another state:** 30,769
- California: 1,325 net to Tacoma (36% of net entry)

*Blue* shading indicates counties which received net migrants from Pierce County. *Red-orange* shading indicates counties which sent net migrants to Pierce County.

Source: U.S. County Migration Patterns (census.gov)
Pierce County is Growing: 2015-2019

...and from other Washington counties.

To another county: 27,449
- Thurston: 1,634 net from Tacoma (28% of net exit)
- Spokane: 678 net (11%)
- Kittitas: 544 net (11%)

From another county: 31,938
- King: 9,155 net to Tacoma (88% of net entry)

Source: U.S. County Migration Patterns (census.gov)
Income Inequality is Growing

The utility must respond to the customers who have been left behind.

Source: American Community Survey 1-Year Dataset, 2012 & 2019 (U.S. Census Bureau). 2019 is the latest year for which data is available.
Income Grows Faster Than Bills

But...

• Median income does not reflect the situation of remaining vulnerable customers

• Costs are expected to continue to rise with supply chain difficulties and inflation trends

• Data is not yet available for COVID impacts

Source: American Community Survey 1-Year Dataset, 2012-2019 (U.S. Census Bureau). 2019 is the latest year for which data is available.
Tacoma has higher percentage of individuals in poverty than other large metropolitan areas in the Puget Sound region.

Source: American Community Survey 5-Year Dataset, 2016-2020 (U.S. Census Bureau).
Disparate Impacts

COVID-19

- **Two-track recovery** as lockdowns disproportionately impact certain industries and job types
- February 2022 consumer price **inflation** highest since 1982 after new consumer habits, tight labor markets, and **supply chain** disruptions

Source: Federal Reserve Economic Database, Consumer Price Index for All Urban Consumers: All Items in U.S. City Average (CPIAUCSL)
Disparate Impacts

Cost Pressures Rising in 2022

• Real wages fall to pre-COVID levels
• Geopolitical disruptions increase gasoline & other commodity prices

Source: Federal Reserve Economic Database, Employed full time: Median usual weekly real earnings: Wage and salary workers: 16 years and over (LES1252881600Q), January 2020 = 100
Source: Federal Reserve Economic Database, US Regular All Formulations Gas Price (GASREGW) through 21 March 2022
What is “Affordable?”

The income at which the average Power + Water bill becomes unaffordable according to legislation is ~$19,000.

Clean Energy Transformation Act (CETA):
- Home energy bills ≤ 6% of total income.
- 2019 average bill to median income = 1.5%.

Environmental Protection Agency (EPA):
- Water bills ≤ 2.5% of total income.
- 2019 average bill to median income = 0.6%.

According to a different dataset from the Washington State Department of Commerce, about 13% of Tacoma Power households spend more than 6% of income on energy. This figure also includes burdens from non-electric heating fuel, and is well within the margin of error of the data calculated from the Census Bureau.

### Yearly Average Bills

<table>
<thead>
<tr>
<th>Year</th>
<th>Average TPU Bill</th>
<th>Power Households</th>
<th>Water Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
<td>$134.80</td>
<td>16,055 or 10%</td>
<td>13,849 or 11%</td>
</tr>
<tr>
<td>2022</td>
<td>$137.50</td>
<td>16,243 or 10%</td>
<td>14,014 or 11%</td>
</tr>
</tbody>
</table>

Source: American Community Survey 1-Year Customer Table, 2019 (U.S. Census Bureau). 2019 is the latest year for which data is available.
Assistance Programs

Low-Income Discount Rate & Bill Credit Assistance Plan (BCAP)
Discount Rate Program

35% Discount on All Utilities...

- For those who are 62+ or disabled
- Increased income threshold from 150% Federal poverty guidelines to 45% Housing and Urban Development (HUD) Area Median Income (AMI) in 2021
- Increased credit from 30% to 35% in 2021
- Estimated cost in 2021: $2,427,000
  - $2,031,000 for Power
  - $396,000 for Water
- Estimated 60-75% participation rate

<table>
<thead>
<tr>
<th>Household Size</th>
<th>Maximum Monthly Household Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$2,385</td>
</tr>
<tr>
<td>2</td>
<td>$2,762</td>
</tr>
<tr>
<td>3</td>
<td>$3,068</td>
</tr>
<tr>
<td>4</td>
<td>$3,405</td>
</tr>
<tr>
<td>5</td>
<td>$3,679</td>
</tr>
<tr>
<td>6</td>
<td>$3,953</td>
</tr>
</tbody>
</table>
Bill Credit Assistance Plan (BCAP)

Monthly Credit on Bill...

- If previous month’s bill paid in full and on time
- Up to $672 annual credit:
  - **Power**: $21
  - **Water**: $9 \textit{increased by $2 in 2021}
  - **Environmental Services**: $26
- Higher income threshold: 60% HUD AMI
- Estimated 5-10% participation rate
- Planned advertising/awareness drive in 2020 derailed due to COVID

<table>
<thead>
<tr>
<th>Household Size</th>
<th>Maximum Monthly Household Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$3,180</td>
</tr>
<tr>
<td>2</td>
<td>$3,635</td>
</tr>
<tr>
<td>3</td>
<td>$4,090</td>
</tr>
<tr>
<td>4</td>
<td>$4,540</td>
</tr>
<tr>
<td>5</td>
<td>$4,905</td>
</tr>
<tr>
<td>6</td>
<td>$5,270</td>
</tr>
</tbody>
</table>
Short-Term Needs

As a response to the pandemic, a 24-month moratorium on disconnection was put in place. These circumstances have resulted in high past due balances and created hardships for many vulnerable customers. Now, the utility must advocate for customers to access available resources.

<table>
<thead>
<tr>
<th>Program</th>
<th>Assistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIHEAP / LIHWAP</td>
<td>Up to $2500 per program</td>
</tr>
<tr>
<td>T-RAP / PCRUAP</td>
<td>Rent and utilities</td>
</tr>
<tr>
<td>WA State Funding</td>
<td>$100 – $150 million (proposed)</td>
</tr>
<tr>
<td>TPU Payment Plans</td>
<td>24 monthly payments</td>
</tr>
<tr>
<td>TPU BCAP</td>
<td>Monthly bill credits</td>
</tr>
<tr>
<td>TPU Discount Rate</td>
<td>Monthly discounts</td>
</tr>
</tbody>
</table>
Tacoma Water

Special Considerations for Income-Constrained Customers
Projecting Customer Assistance

Including Assistance into Projections

- As we project annual rate adjustments, we also project the anticipated impact on an average monthly bill for a residential customer.

- Planning for increased assistance in parallel with rate adjustments helps customers understand how their monthly bills could be impacted and mitigated.

- The bill credit assistance program is designed to provide monthly credits set at approximately 20% of an average residential bill.

- Tying bill credit projections to rate adjustments is important in allowing policymakers to anticipate when additional customer assistance will be budgeted and for customers to anticipate when more customer assistance could be available.
Leveraging Outside Resources

Low-Income Household Water Assistance Program

Program Overview

• LIHWAP provides emergency assistance to low-income households who are disconnected or are in imminent threat of disconnection.

• Eligible households may receive up to $2,500 in benefit assistance towards their water/wastewater bill.

Priority Populations for LIHWAP

• People with disabilities
• Families with young children
• Older adult/seniors (60 years of age or older)
• Households with high water consumption

Source: Washington LIHWAP Profile Summary
Conservation & Customer Programs

Smart Irrigation

Overview
Hose faucet timers and weather-based irrigation controllers are smart choices to help you reduce water waste and lower your utility bill. Just look for products with the WaterSense label and apply for our money-saving rebate below.

Hose Faucet Timers
Turn your hose faucet into a programmed sprinkler system. Hose timers easily automate your hose-end sprinklers, drip irrigation system, or soaker hose, for improved scheduling consistency. Many also have a rain delay and manual override switch to pause programming and allow flexible manual watering. These timers feature simple, easy installation, and programming.

Water Grants and Loans

Get a water conservation grant or loan to repair your aged or leaking water line

You can receive an optional grant or loan to pay a licensed and bonded plumbing contractor that you choose to replace leaking or end-of-life water service lines at your home.

Grant and Loan Options

1. A zero-interest loan up to $5,000 for up to 84 months. (We can explore exceptions for amounts and terms exceeding this criteria.)
2. A grant up to $5,000 income-eligible customers. (You can supplement exceeding amounts with a deferred loan.)

All loans are secured with a lien against your property.

Why Apply
Maintaining the serviceable water line to your home is your responsibility, but we also know the water line isn’t an asset that many people regularly service. Making repairs on your water service line now ensures your water service’s reliability and prevents future leaks or bursts in the line. We understand that paying for unexpected home repairs out-of-pocket can create a financial strain. Our grant or zero-interest loan can help you pay for any needed repairs.

Showerheads

Overview
Switching to an efficient showerhead is one of the easiest ways to conserve water and energy in your daily life while also saving money on your utility bill.

The latest showerheads use 1.5-2 gallons of water per minute, while showerheads manufactured before 1994 use 3-8 gallons per minute. That means a family of four could save about 3,600 gallons of water and $60 in utility costs per year simply by using efficient showerheads.
Water and the Rental Population

Master-Metering

• For many multi-unit dwellings, water consumption is “master-metered.”

• Tenants may be unable to monitor and effect change through their individual water consumption.

• Water may be included in rental costs, making it challenging to address affordability through rates for these customers.
Tacoma Power
Special Considerations for Income-Constrained Customers
Current Assistance Portfolio

- **Discount Rate Program** for income-qualified seniors and disabled customers *(roughly 75% participation rate)*

- **Bill Credit Assistance Plan** (BCAP) *(roughly 5-10% participation rate)*

- **Current Income-Constrained Conservation** Programming *(minimal)*
Renters with electric heat are most likely to be identified as needing energy assistance.

Owners with electric heat are more likely to need assistance than owners with other heating sources, since they are more likely to be low-income.

Source: Department of Commerce Dataset, 2018 (Washington State). The state is using 2018 data for initial CETA analysis.
BIPOC people are more likely to have factors correlated with need for aid, such as being a renter or having electric heat.

Source: American Community Survey 1-Year Custom Data Query, 2019 (U.S. Census Bureau). 2019 is the latest year for which data is available.
Current Conservation Programs

**Residential customers**
- With electric heat
- Own and occupy their home
- Meet income qualifications

are eligible for a rebate and deferred loan.

- Rebate plus deferred loan covers the cost of the conservation upgrade
- Deferred loan becomes due when customer sells the home

**Rebate and Deferred Loan Details**

- **Windows**
  - Rebate: $50 to $100 per window
  - PLUS deferred loan
- **Insulation**
  - Rebate: $500 per area (attic/wall/floor)
  - PLUS deferred loan
- **Heat Pump**
  - Rebate: up to $1,000
  - PLUS deferred loan
- **Hybrid Water Heater**
  - Rebate: $500
  - PLUS deferred loan
New Conservation Programs for Renters

Program Requirement
Tenants at 80% Area Median Income or less

Energy Audit
• Build relationship with landlord and tenant
• Comprehensive proposal prioritizing energy efficiency upgrades
• Energy efficiency kits for tenants
• Hands-on tenant education

Insulation
• 100% grant
• Conservation-related repairs funded with avoided tax on BPA incentive funding

Heating & Windows
• Option 1: 100% grant (if owner signs affordability covenant)
• Option 2: 30/70% grant/interest free loan “split” (if no affordability covenant)
## Regional Benchmarking: Public

<table>
<thead>
<tr>
<th>Utility</th>
<th>Metric</th>
</tr>
</thead>
</table>
| Snohomish PUD | • Discount of 50% for incomes 0-100% of Federal poverty guidelines, 25% for incomes of 101-200% of Federal poverty.  
• Goal: “Put rate discount out of business” through conservation.  
• 50% estimated participation.                                                                                                        |
| Seattle City Light | • Utility Discount Program (UDP): 60% discount on electric bills and a 50% discount on other utility bills.  
• 30-50% estimated participation.                                                                                                      |
## Regional Benchmarking: IOU

<table>
<thead>
<tr>
<th>Utility</th>
<th>Metric</th>
</tr>
</thead>
</table>
| **Puget Sound Energy** | • Current: Grant program available only after Federal energy assistance is exhausted  
                      | • Proposed: Rate discount of 15-45% contingent on income level         
                      | • Context: PSE has requested a 13.59% rate increase for January 2023 |
| **Avista**      | • Current: Grant program, senior/disabled discount rate, percentage of income payment plan & debt forgiveness for very lowest incomes  
                      | • Proposed: Convert grant program into rate discount of 15%-94% contingent on income level  
                      | • Context: Avista has requested a 9.6% rate increase for December 2022 |
| **PacifiCorp**  | • Rate discount of 15%-70% contingent on income level |
In Summary

Current assistance programs are good, but...

• Challenges for income-constrained customers have gotten worse

• Other regional power utilities are currently providing or planning to provide more assistance for income-constrained customers

• Tacoma Power recommends broadening our portfolio of programs
Potential Solutions

✓ Revamp approach to providing conservation programs to income-constrained customers

• Consider offering residential conservation measures outside of current conservation program

• Expand rate discount programs to reach more people with more assistance
A Word from Customer Solutions

Enhance BCAP higher participation, marketing, and funding

Customer Education

More Efficient Dwellings

Additional Rate Discounts for income-qualified customers
Demographic Appendix
Pierce County is Growing: 2015-2019

Pierce County Net Migration: +8,122
• Net from another state: 3,633 (45% of total net)
• Net from another Washington county: 4,489 (55% of total net)

Net Customers:
• Tacoma Power: +6,717
• Tacoma Water: +5,266
• Not all growth in Pierce County comes to TPU’s service area
• Usage per customer is declining for both Power & Water, so impact is softened

Source: U.S. County Migration Patterns (census.gov)
How Do People Live?

- **Power**: 2.53 people
- **Water**: 2.49 people
- **City**: 2.40 people
- More than half of people in all utility service areas live in one- or two-person households

Source: Census Bureau. American Community Survey 2019 1-Year data.
Renters with Electric Heat Need Help

- **Renters** have lower incomes than owners.
- **Electric-heat** users have lower incomes than other-heat users, even for owners.

The boxes show the median income for the demographic group, with estimated 25th and 75th quartiles illustrated.

Source: American Community Survey 1-Year Custom Data Query, 2019 (U.S. Census Bureau). 2019 is the latest year for which data is available.
## Metrics of Other Agencies

<table>
<thead>
<tr>
<th>Organization</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metropolitan Development Council (MDC)</td>
<td>No metric of utility affordability.</td>
</tr>
<tr>
<td></td>
<td>Administers LIHEAP and LIHWAP, which is currently set at 150% Federal</td>
</tr>
<tr>
<td></td>
<td>poverty threshold.</td>
</tr>
<tr>
<td>Sound Outreach</td>
<td>No metric of utility affordability.</td>
</tr>
<tr>
<td>United Way of Pierce County</td>
<td>18-38% for housing, including utilities (power &amp; water).</td>
</tr>
<tr>
<td></td>
<td>The ALICE Household Survival Budget estimates the bare minimum cost of</td>
</tr>
<tr>
<td></td>
<td>household necessities (housing, child care, food, transportation,</td>
</tr>
<tr>
<td></td>
<td>health care, and a basic smartphone plan), plus taxes and a contingency</td>
</tr>
<tr>
<td></td>
<td>fund. Utilities is built into housing for the ALICE budget.</td>
</tr>
<tr>
<td>Washington State Winter Utility Moratorium Program</td>
<td>7% of income in winter for power (usual time for peak bills).</td>
</tr>
<tr>
<td></td>
<td>At the time the client income statement is submitted to the utility,</td>
</tr>
<tr>
<td></td>
<td>the applicant shall enter an agreement to pay no less than seven</td>
</tr>
<tr>
<td></td>
<td>percent of the applicant's household monthly income, plus one-twelfth</td>
</tr>
<tr>
<td></td>
<td>of any billing accrued from the date application is made and</td>
</tr>
<tr>
<td></td>
<td>thereafter through March 15, during the period of the utility</td>
</tr>
<tr>
<td></td>
<td>moratorium.</td>
</tr>
<tr>
<td>National Energy and Utility Affordability Coalition</td>
<td>6% of income for home energy.</td>
</tr>
<tr>
<td>(NEUAC)</td>
<td></td>
</tr>
<tr>
<td>HUD –Utility Allowances</td>
<td>No single formula.</td>
</tr>
<tr>
<td></td>
<td>Agencies under HUD use various methodologies: engineering-based or</td>
</tr>
<tr>
<td></td>
<td>consumption-based.</td>
</tr>
</tbody>
</table>
Customer Survey

“Given your household’s financial circumstances, would you characterize the bills you receive from TPU as being very affordable, somewhat affordable, not very affordable, or not at all affordable?”

<table>
<thead>
<tr>
<th>Year</th>
<th>TPU Overall</th>
<th>All 5 Services Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>38%</td>
<td>30%</td>
</tr>
<tr>
<td>2017</td>
<td>24%</td>
<td>15%</td>
</tr>
<tr>
<td>2018</td>
<td>24%</td>
<td>11%</td>
</tr>
<tr>
<td>2019</td>
<td>23%</td>
<td>12%</td>
</tr>
<tr>
<td>2020</td>
<td>24%</td>
<td>12%</td>
</tr>
<tr>
<td>2021</td>
<td>25%</td>
<td>13%</td>
</tr>
</tbody>
</table>

Legend:
- Orange: Not at all affordable
- Yellow: Not very affordable
- Blue: Somewhat affordable
- Green: Very affordable