Overview and Timeline

Tacoma Public Utilities

Public Utility Board Retreat | March 30, 2022

BUDGET AND RATES TIMELINE

TACOMA POWER | TACOMA WATER | TACOMA RAIL
TACOMA PUBLIC UTILITIES

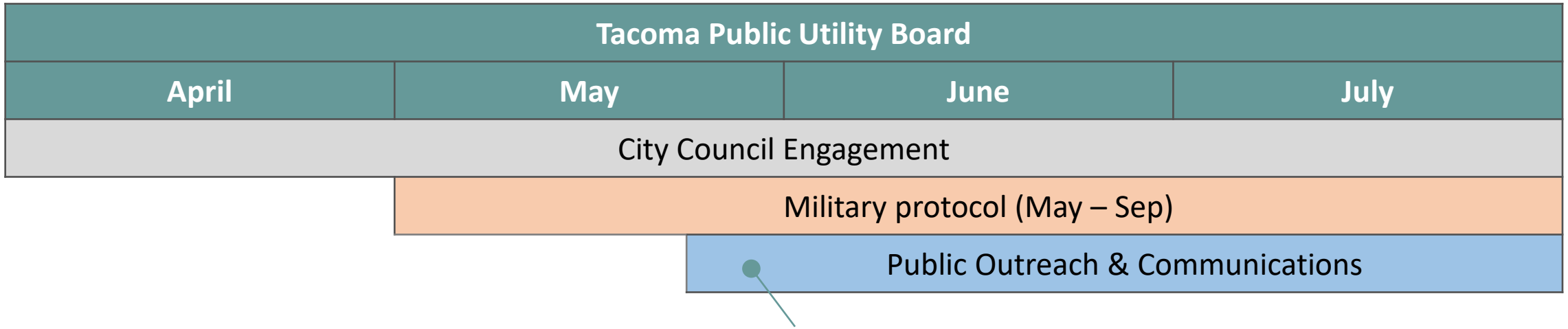
4/27
Budget Overview
TPU | Rail | Water

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



Listening Sessions Begin

SD2 Financial Stability
SD3 Rates
SD4 Stakeholder Engagement
SD10 Government Relations

BUDGET AND RATES TIMELINE

8/24
Preliminary Budget Review
Rail

9/28
Preliminary Budget Review
TPU | Water | Power

PUB
Public Hearing

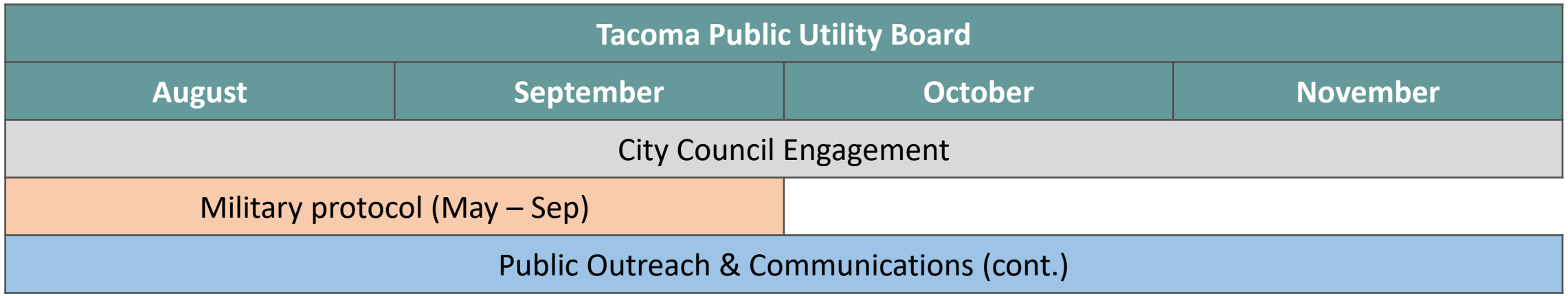
10/11
Joint Study Session
Utility Budget & Rates

10/12
PUB
Budget & Rates Consideration

10/26
PUB
Budget & Rates Adoption

11/15
City Council
1st Reading

11/22
City Council
2nd Reading



SD2 Financial Stability

SD3 Rates

SD4 Stakeholder Engagement

SD10 Government Relations

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

SD2 Financial Stability

SD3 Rates

SD4 Stakeholder Engagement

SD10 Government Relations

MEANINGFUL PUBLIC OUTREACH

TACOMA POWER | TACOMA WATER | TACOMA RAIL
TACOMA PUBLIC UTILITIES

SD4 Stakeholder Engagement

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

TACOMA POWER | TACOMA WATER | TACOMA RAIL
TACOMA PUBLIC UTILITIES

SD4 Stakeholder Engagement

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

SD2 Financial Stability

SD3 Rates

SD1 Equity and Inclusion

Purpose and Guiding Objectives

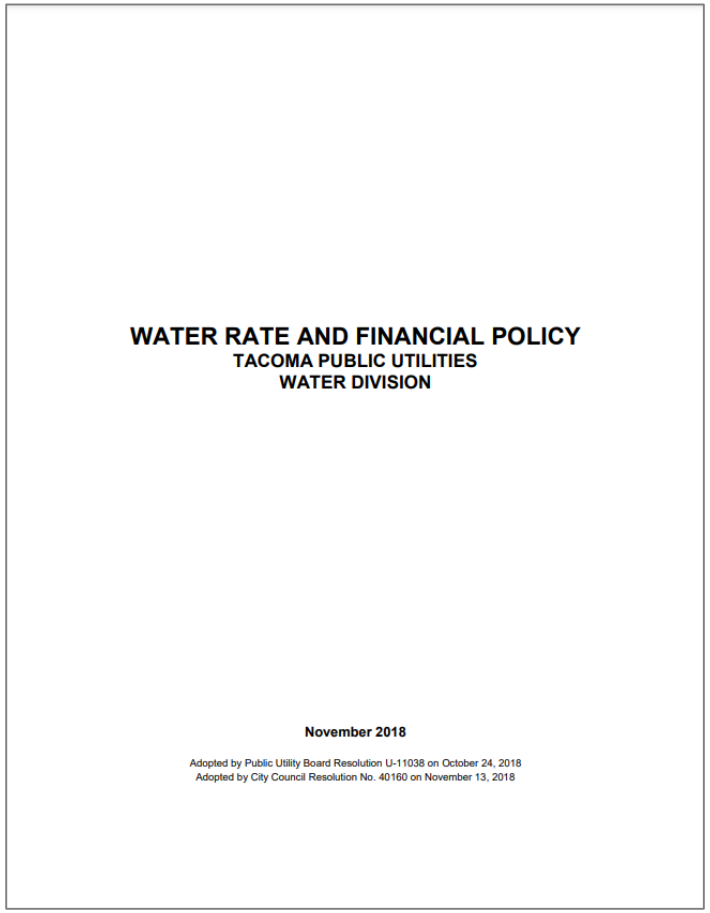
TACOMA WATER
TACOMA PUBLIC UTILITIES

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

a. Water Rates Should Ensure Adequate Supply.
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.



WATER RATE AND FINANCIAL POLICY
TACOMA PUBLIC UTILITIES
WATER DIVISION

November 2018

Adopted by Public Utility Board Resolution U-11038 on October 24, 2018
Adopted by City Council Resolution No. 40160 on November 13, 2018

Policy Summary

TACOMA WATER
TACOMA PUBLIC UTILITIES

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

Reviewing and Testing our Policy

TACOMA WATER
TACOMA PUBLIC UTILITIES

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

TACOMA WATER
TACOMA PUBLIC UTILITIES

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 *[s]* ~~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 and Policy Outline

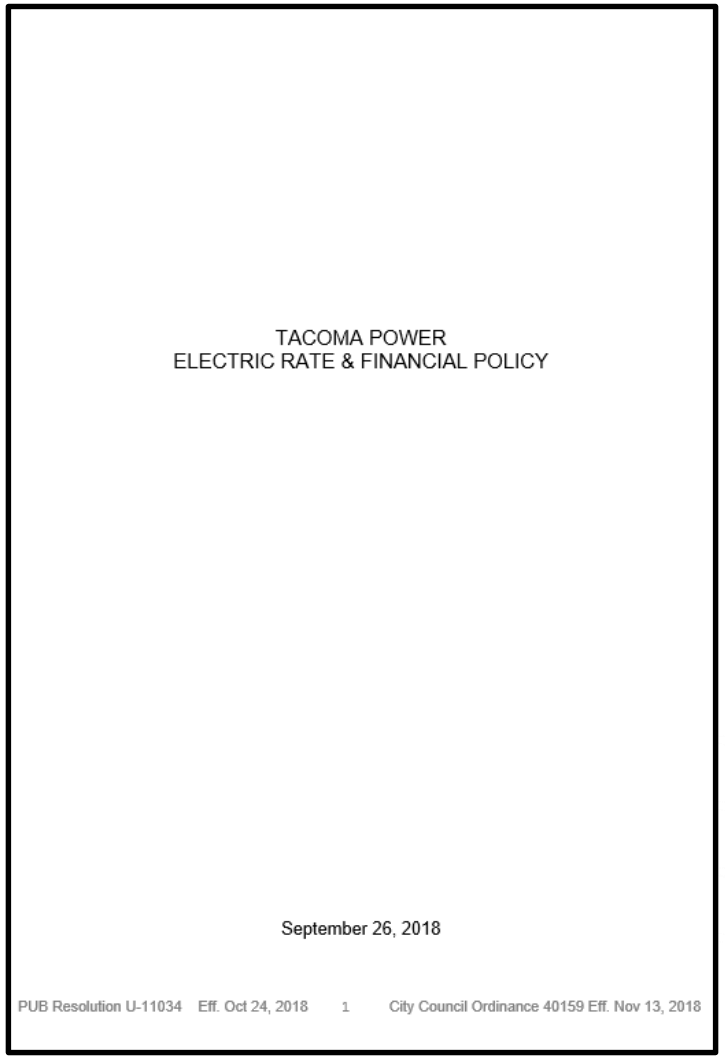
TACOMA POWER
TACOMA PUBLIC UTILITIES

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


TACOMA POWER
ELECTRIC RATE & FINANCIAL POLICY

September 26, 2018

PUB Resolution U-11034 Eff. Oct 24, 2018 1 City Council Ordinance 40159 Eff. Nov 13, 2018

Policy Summary

TACOMA POWER
TACOMA PUBLIC UTILITIES

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

Reviewing and Testing our Policy

TACOMA POWER
TACOMA PUBLIC UTILITIES

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.

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

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

Recommended Changes

TACOMA POWER
TACOMA PUBLIC UTILITIES

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 and Guiding Objectives

TACOMA RAIL
TACOMA PUBLIC UTILITIES

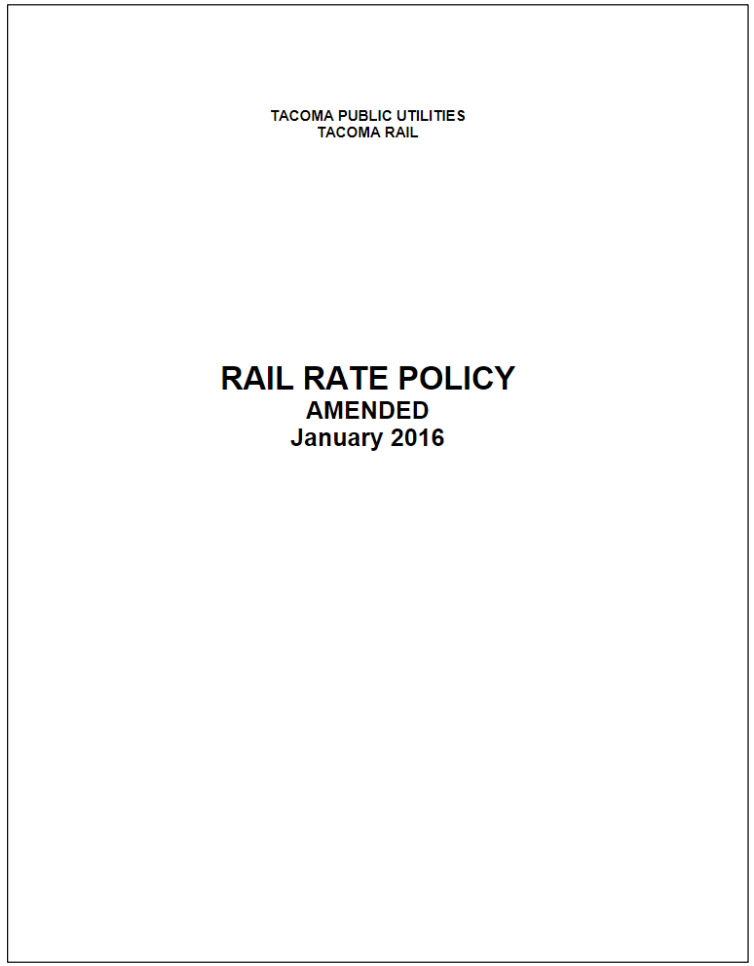
Purpose

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


TACOMA PUBLIC UTILITIES
TACOMA RAIL

RAIL RATE POLICY
AMENDED
January 2016

Policy Summary

TACOMA RAIL
TACOMA PUBLIC UTILITIES

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

Recommended Changes

TACOMA RAIL
TACOMA PUBLIC UTILITIES

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

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TACOMA PUBLIC UTILITIES

SD2
Financial Stability

SD3
Rates

SD1
Equity and Inclusion

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

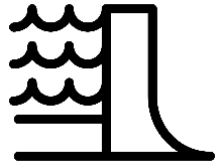
- Affordability
- Environment
- Public Involvement

Legislative Policy : Environment

Protection of the Natural Environment

Including:

- **Stream** protection
- **Fishery** resources
- **Wildlife** habitat



Clean Hydropower

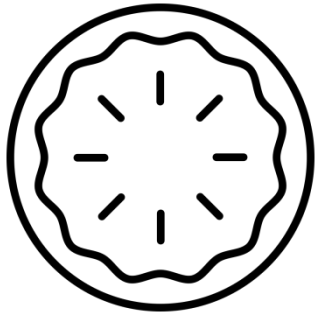
Statutory recognition of **hydropower** as a renewable, emissions-free resource.

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**

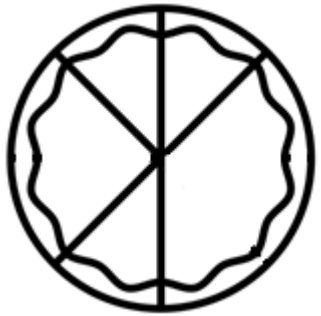
Ratemaking Process Overview

How Big is the Pie?



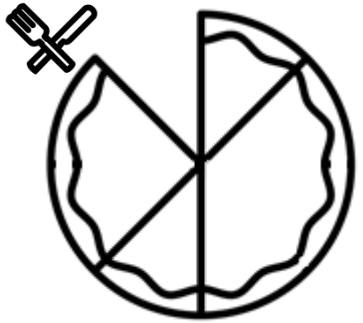
Revenue Requirement
Identifies revenue needed to sustain operations, **according to financial plan**.

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.)

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TACOMA PUBLIC UTILITIES

SD2 Financial Stability

SD3 Rates

SD1 Equity and Inclusion

Revenue Requirement

Section 2

Ratemaking Process

Revenue Requirement

"How much money do we need?"

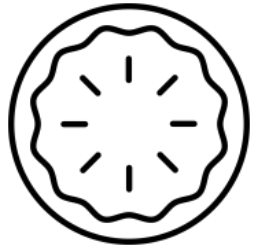
Cost-of-Service Analysis

"Who pays what?"

Rate Design

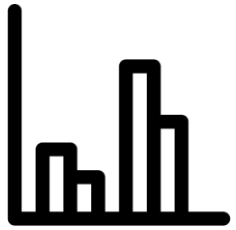
"How do customers pay?"

- Identifies revenues needed to sustain operations
- Supported by Long-Range Financial Plan (LRFP)
- Ensures achievement of key policy objectives

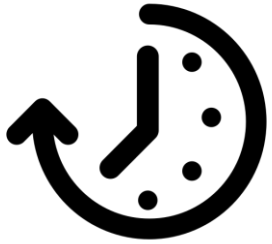


How Big is the Pie?

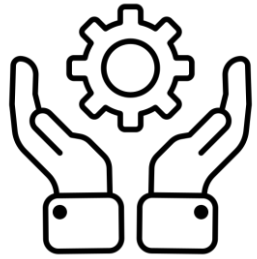
Revenue Requirement Takeaways



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

How do we build our LRFP?

- Rate & Financial Policies
- Sensitivities & priorities
- Revenue requirement analysis

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

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

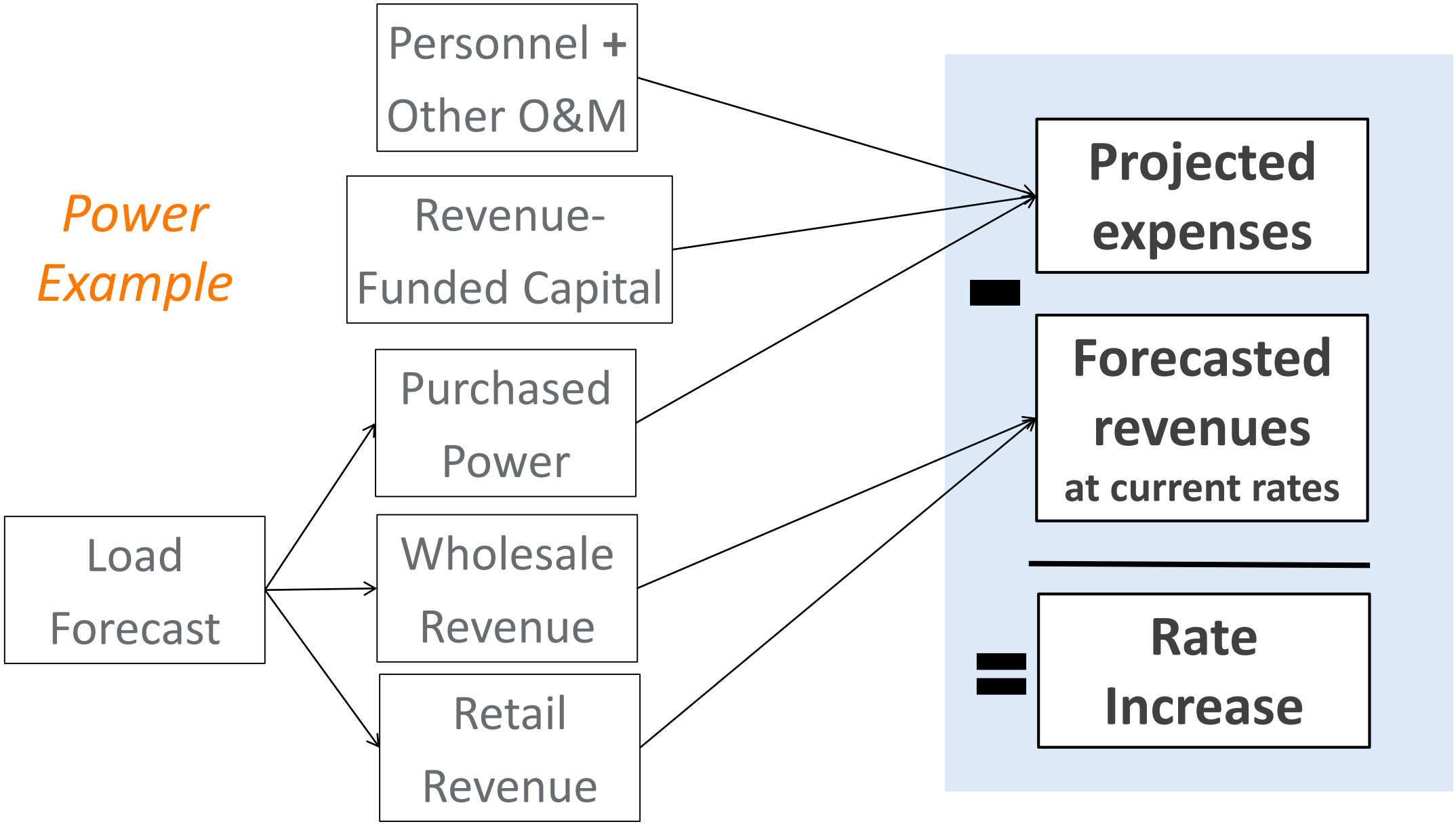
- Base Case
- Scenario Development

Scenarios provide a range of likely future rate adjustment paths.

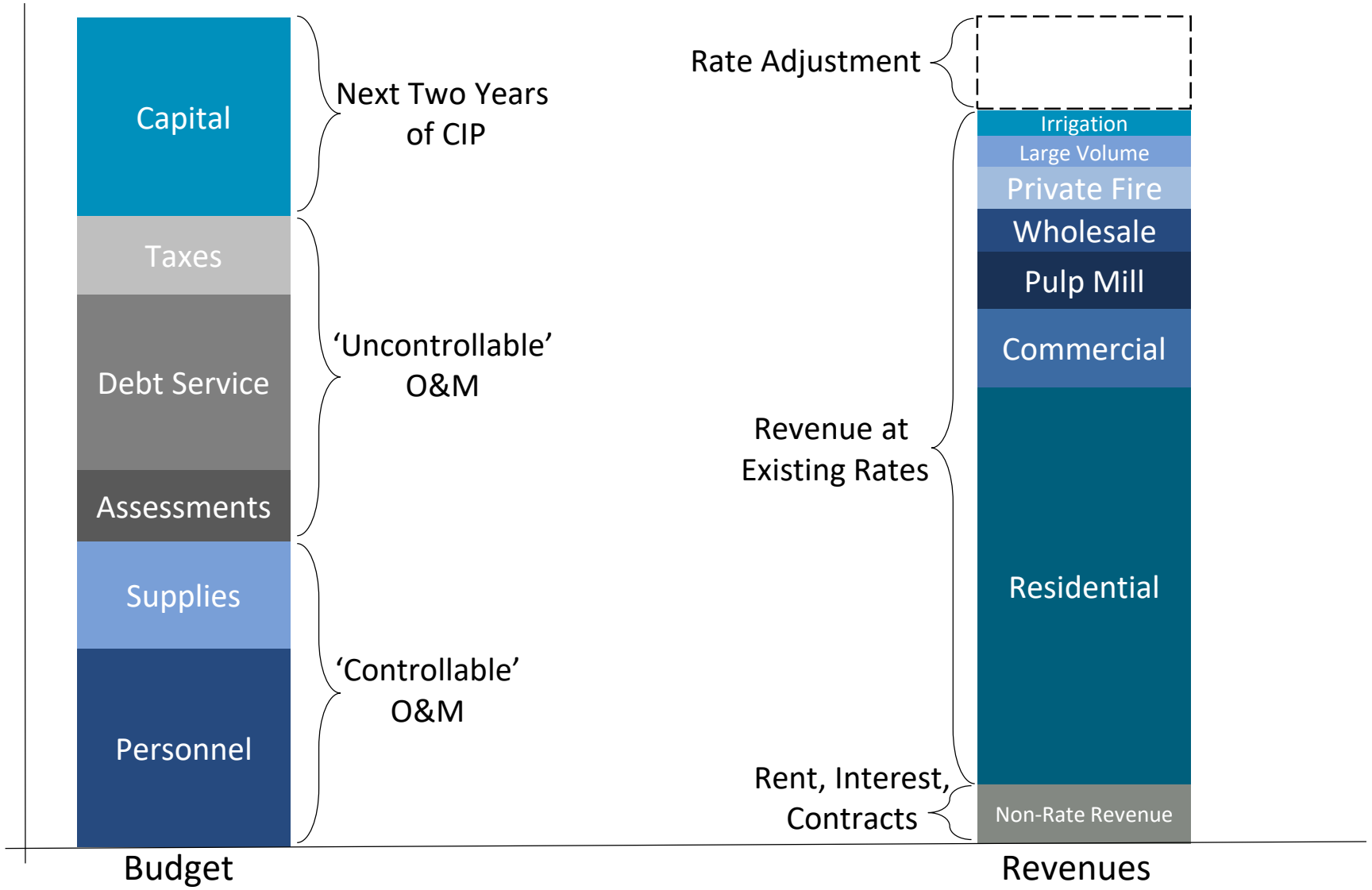
Is Additional Revenue Needed?

TACOMA POWER
TACOMA PUBLIC UTILITIES

Power Example



Revenue Requirement Example



TACOMA POWER | TACOMA WATER | TACOMA RAIL
TACOMA PUBLIC UTILITIES

SD2 Financial Stability

SD3 Rates

SD1 Equity and Inclusion

Cost-of-Service Overview

Section 3

Ratemaking Process

Revenue Requirement

"How much money do we need?"

Cost-of-Service Analysis

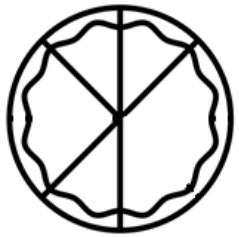
"Who pays what?"

Rate Design

"How do customers pay?"

- 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.*

Customer Characteristics

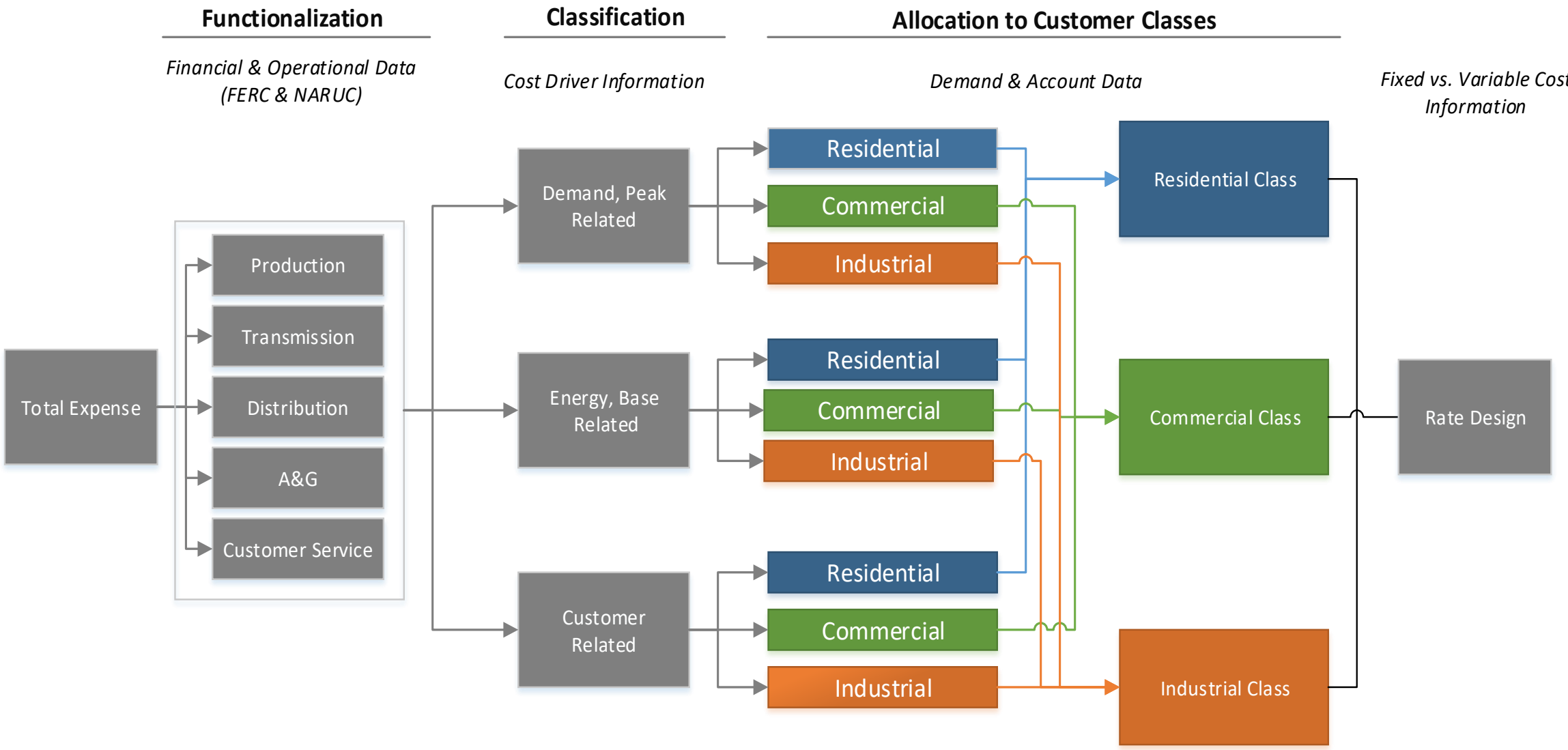
COSA Model

- **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?

- **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

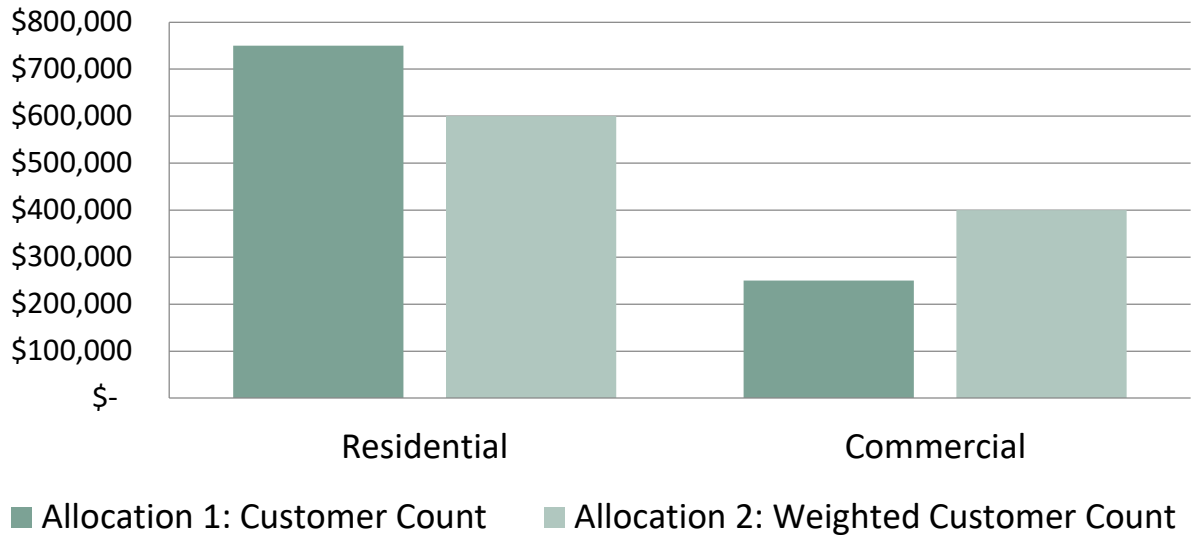


Example of COSA Decisions

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.

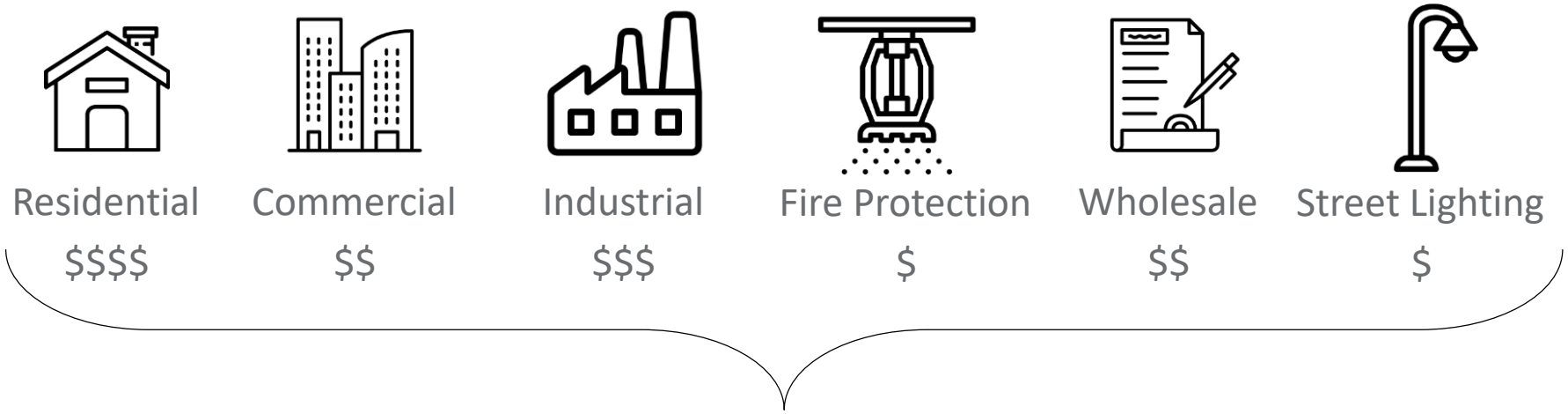
	Customers	Allocation 1: Customer Count	Meter Cost	Allocation 2: Weighted Customer Count
Residential	150,000	75%	$50.00	60%
Commercial	50,000	25%	$100.00	40%
TOTAL	200,000	100%		100%



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.

Using COSA Results



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
TACOMA PUBLIC UTILITIES

SD3
Rates

SD2
Financial
Stability

Tacoma Rail Ratemaking

Section 4

Tariff Rates

TACOMA RAIL
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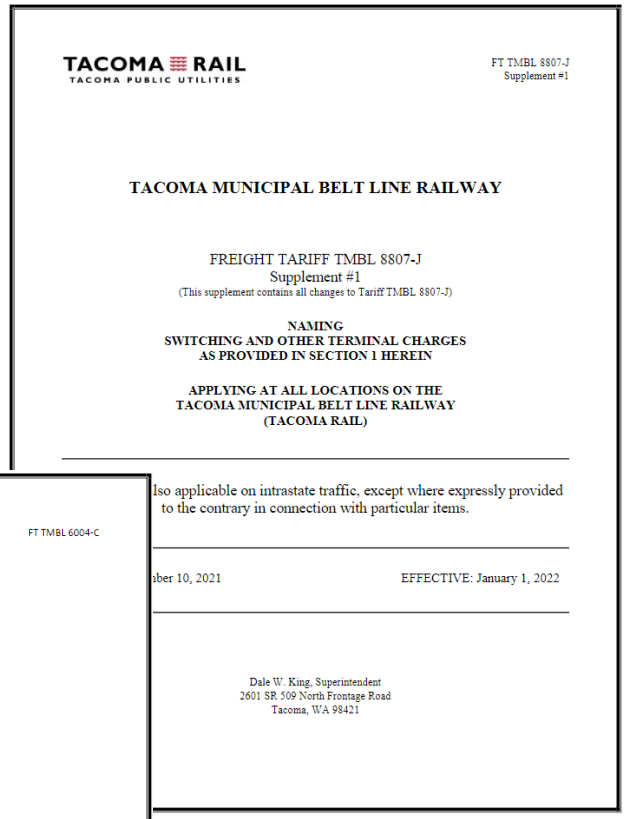
- **Switching Tariff**
  - Line haul and related railcar movement charges
  - Last updated 1/1/2022
    - 3% increase in line haul rates



TACOMA RAIL
TACOMA PUBLIC UTILITIES

FT TMBL 8807-J
Supplement #1

TACOMA MUNICIPAL BELT LINE RAILWAY

FREIGHT TARIFF TMBL 8807-J
Supplement #1
(This supplement contains all changes to Tariff TMBL 8807-J)

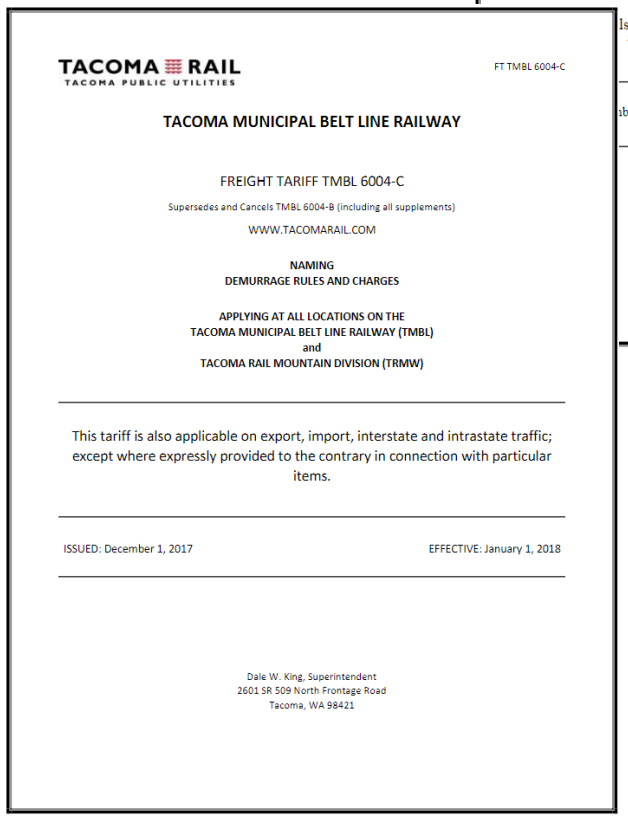
NAMING
SWITCHING AND OTHER TERMINAL CHARGES
AS PROVIDED IN SECTION 1 HEREIN

APPLYING AT ALL LOCATIONS ON THE
TACOMA MUNICIPAL BELT LINE RAILWAY
(TACOMA RAIL)

lso applicable on intrastate traffic, except where expressly provided to the contrary in connection with particular items.

ıber 10, 2021 EFFECTIVE: January 1, 2022

Dale W. King, Superintendent
2601 SR 509 North Frontage Road
Tacoma, WA 98421



TACOMA RAIL
TACOMA PUBLIC UTILITIES

FT TMBL 6004-C

TACOMA MUNICIPAL BELT LINE RAILWAY

FREIGHT TARIFF TMBL 6004-C

Supersedes and Cancels TMBL 6004-B (including all supplements)

WWW.TACOMARAIL.COM

NAMING
DEMURRAGE RULES AND CHARGES

APPLYING AT ALL LOCATIONS ON THE
TACOMA MUNICIPAL BELT LINE RAILWAY (TMBL)
and
TACOMA RAIL MOUNTAIN DIVISION (TRMW)

This tariff is also applicable on export, import, interstate and intrastate traffic; except where expressly provided to the contrary in connection with particular items.

ISSUED: December 1, 2017 EFFECTIVE: January 1, 2018

Dale W. King, Superintendent
2601 SR 509 North Frontage Road
Tacoma, WA 98421

- **Demurrage Tariff**
  - For the undue detention of railcars
  - $60/day after credits
  - Last updated 1/1/2018

Line Haul Rate Analysis

TACOMA RAIL
TACOMA PUBLIC UTILITIES

- **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

TACOMA RAIL
TACOMA PUBLIC UTILITIES

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
TACOMA PUBLIC UTILITIES

SD3
Rates

SD2
Financial
Stability

Tacoma Water Rate Design

Section 5

Ratemaking Process

TACOMA WATER
TACOMA PUBLIC UTILITIES

Revenue Requirement

"How much money do we need?"

Cost-of-Service Analysis

"Who pays what?"

Rate Design

"How do customers pay?"

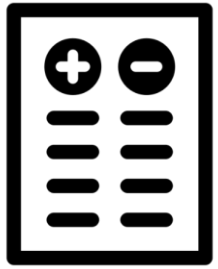
How to Make the Pie?

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

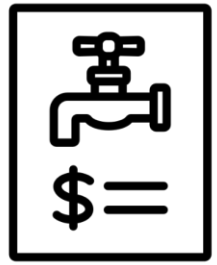
Rate Design Primary Takeaways

TACOMA WATER
TACOMA PUBLIC UTILITIES

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

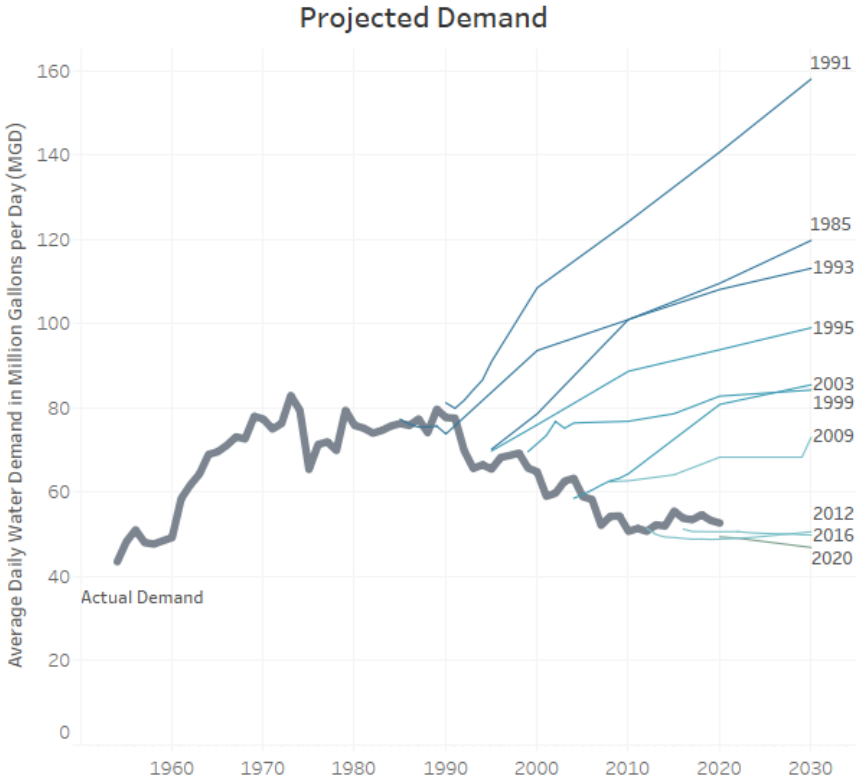
Consumption Declines, Costs Stable

TACOMA WATER
TACOMA PUBLIC UTILITIES

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.



*The **grey** line represents actual demand while the blue lines represent the years in which demands were forecast.*

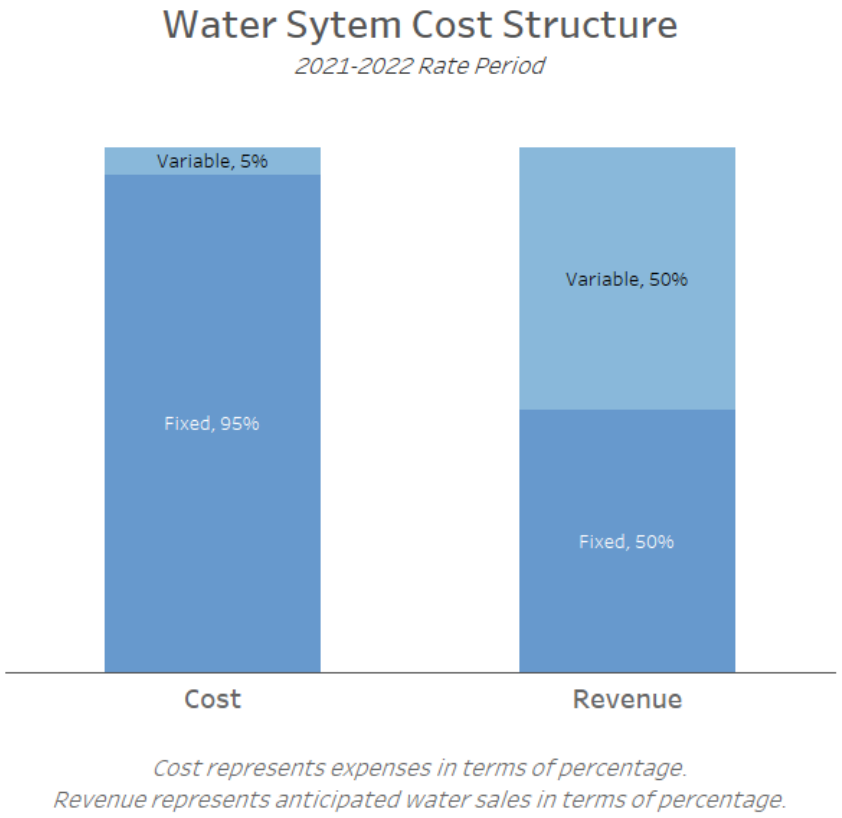
Costs and Revenue Structures Mismatched

TACOMA WATER
TACOMA PUBLIC UTILITIES

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

TACOMA WATER
TACOMA PUBLIC UTILITIES

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

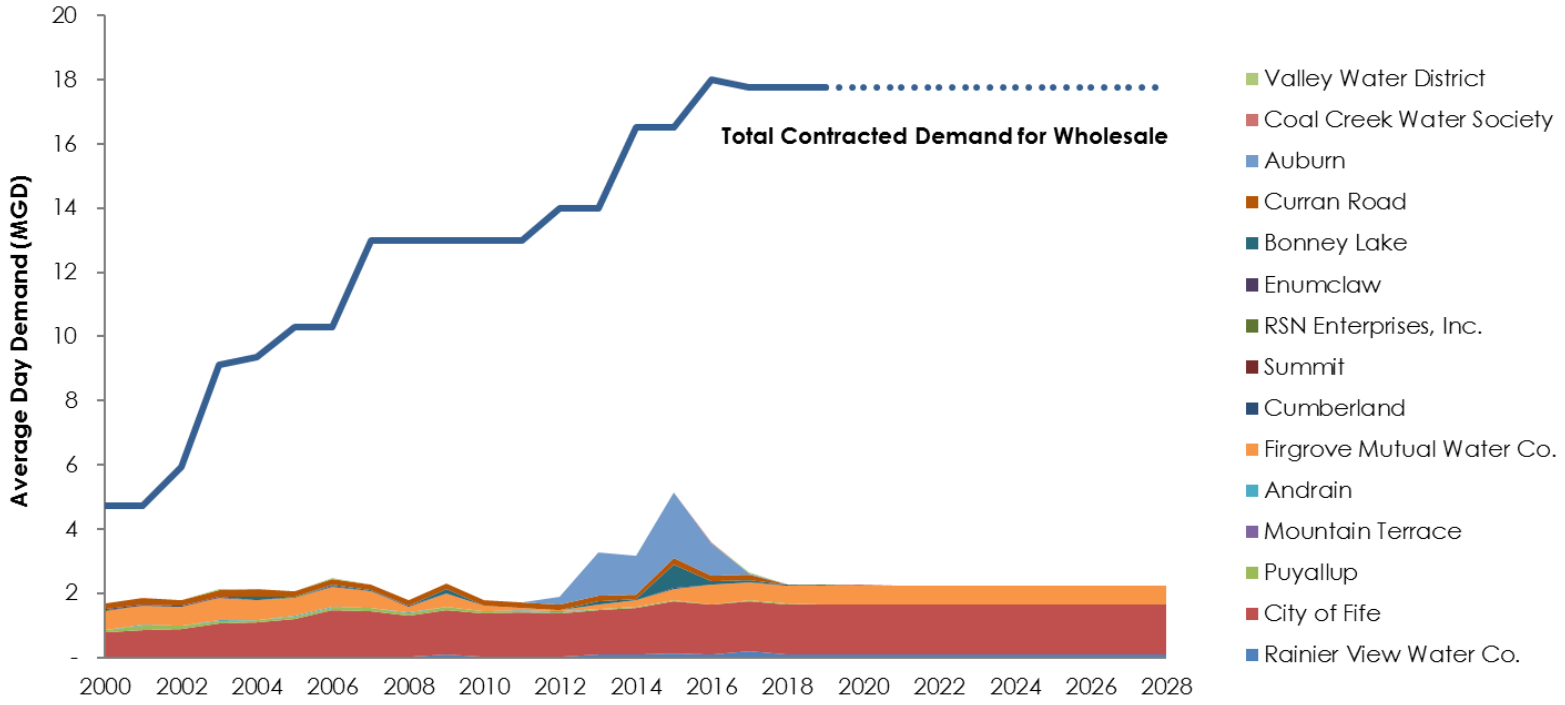
Tacoma Water assesses a monthly fixed charge that is based on the customer's meter size. This is due to the increased infrastructure required to be able to serve customers at the required flow rates and pressures.

Wholesale Ready to Serve Charge

TACOMA WATER
TACOMA PUBLIC UTILITIES

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.

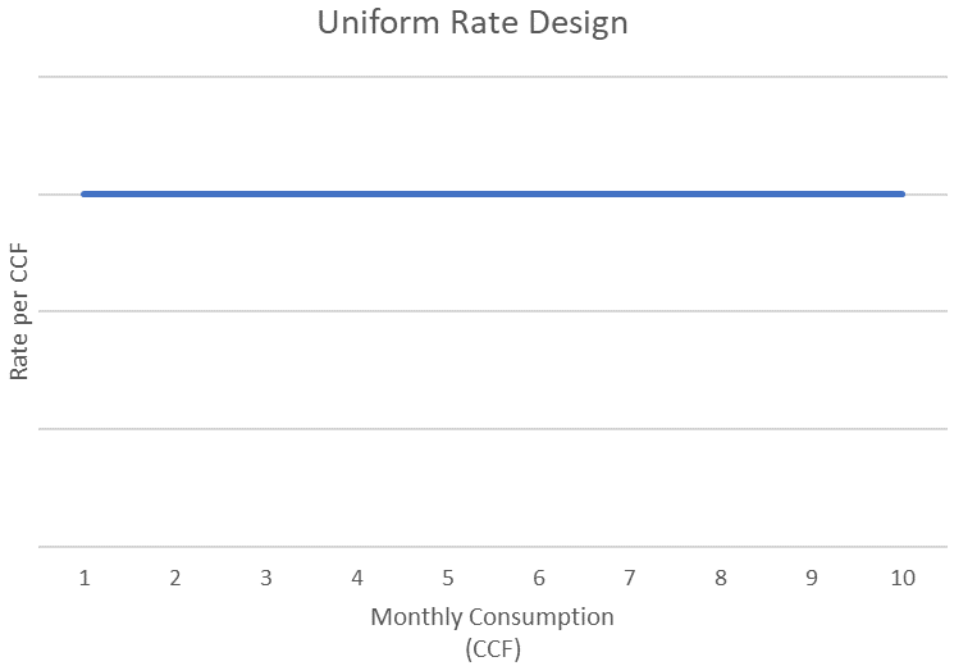


Uniform Rate Design

TACOMA WATER
TACOMA PUBLIC UTILITIES

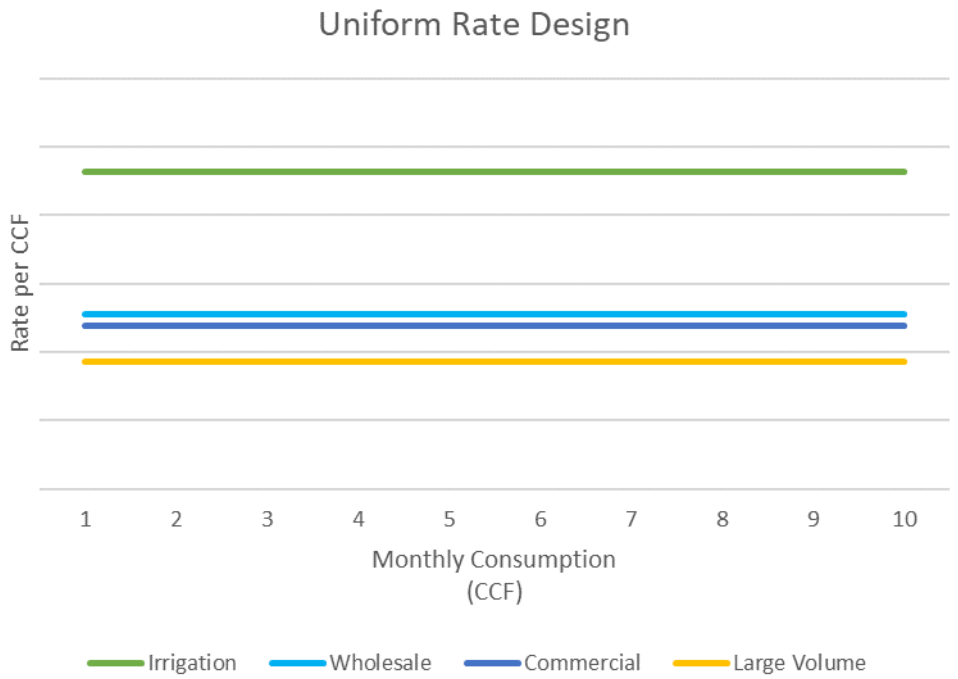
Rate Design Philosophy

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.

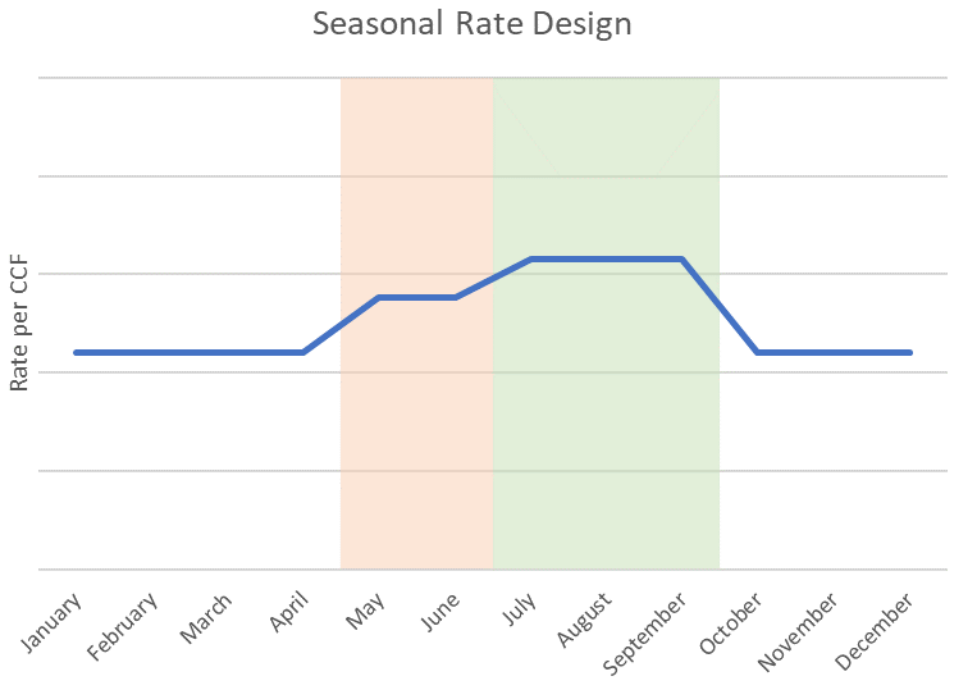


Seasonal Rate Design

TACOMA WATER
TACOMA PUBLIC UTILITIES

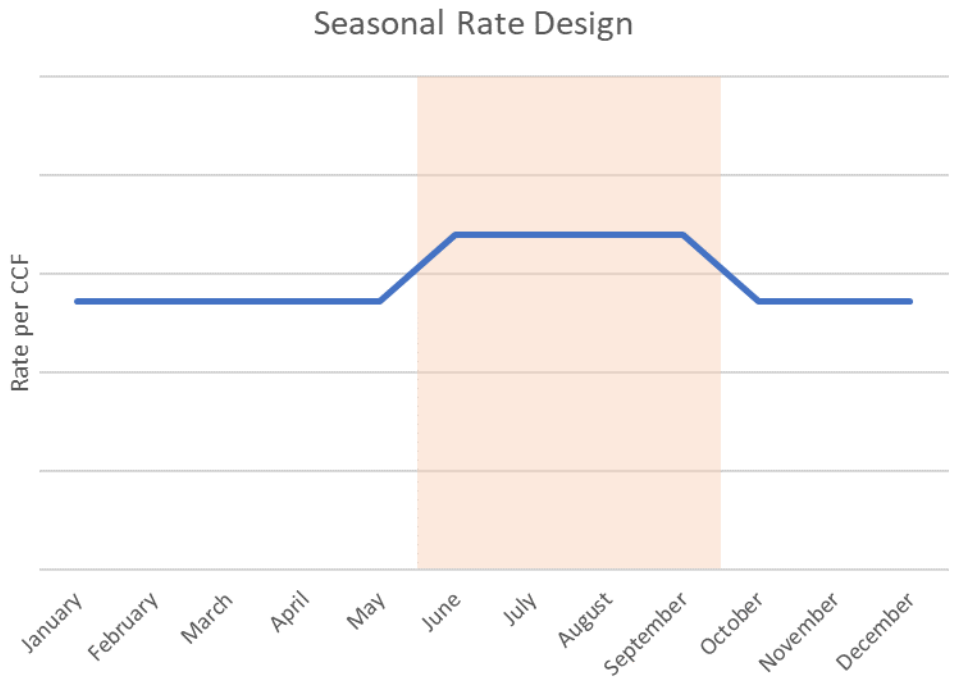
Rate Design Philosophy

A seasonal rate design might best apply to a customer class whose consumption characteristics vary based on weather or seasonality.



Tacoma Water Rate Schedule

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.

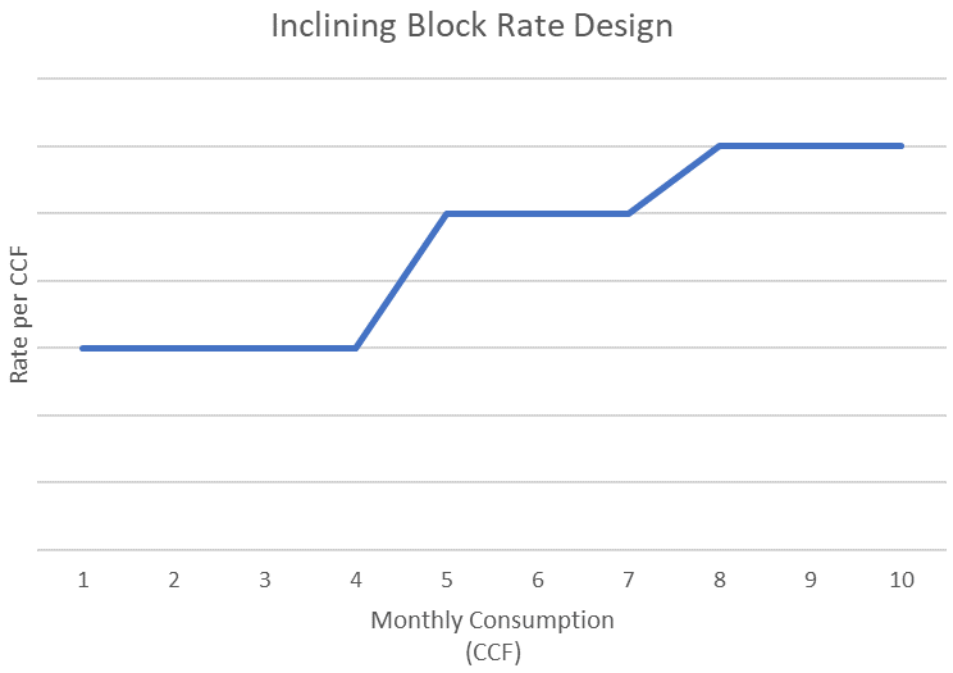


Inclining Block Rate Design

TACOMA WATER
TACOMA PUBLIC UTILITIES

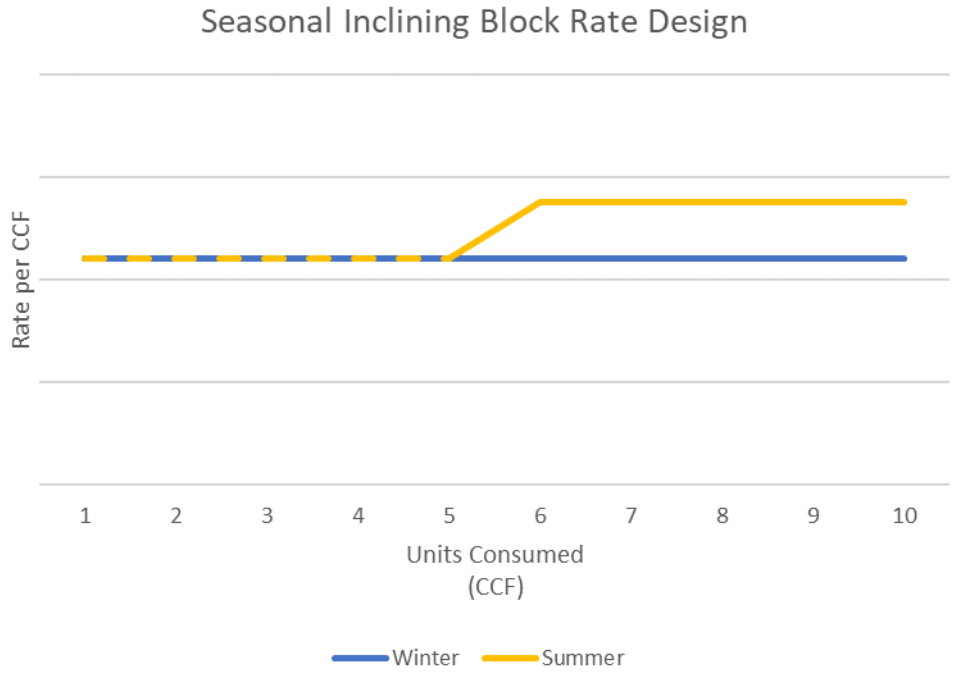
Rate Design Philosophy

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

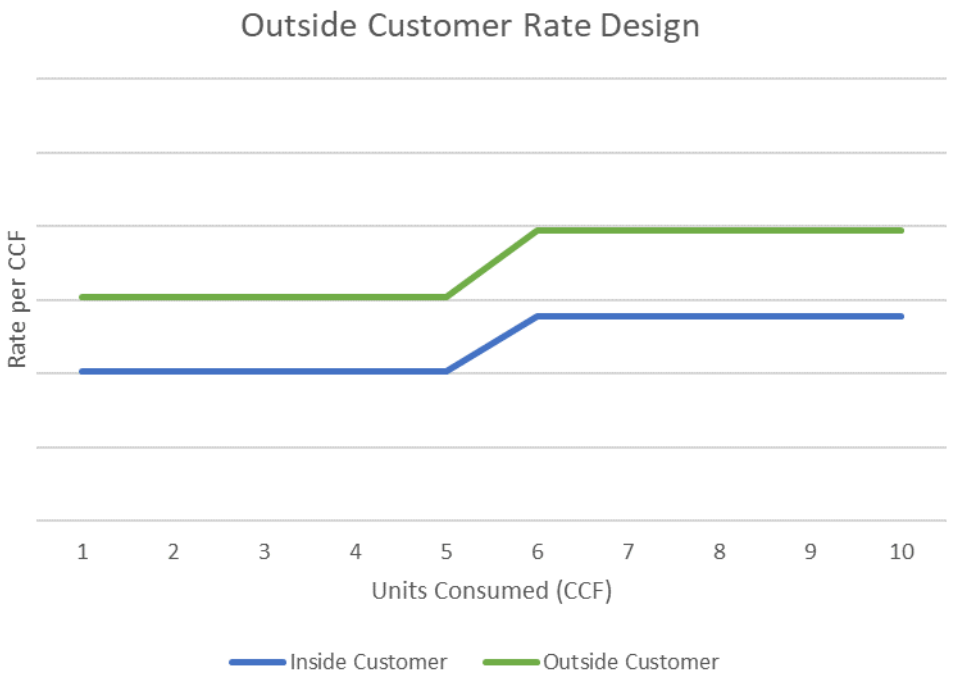
TACOMA WATER
TACOMA PUBLIC UTILITIES

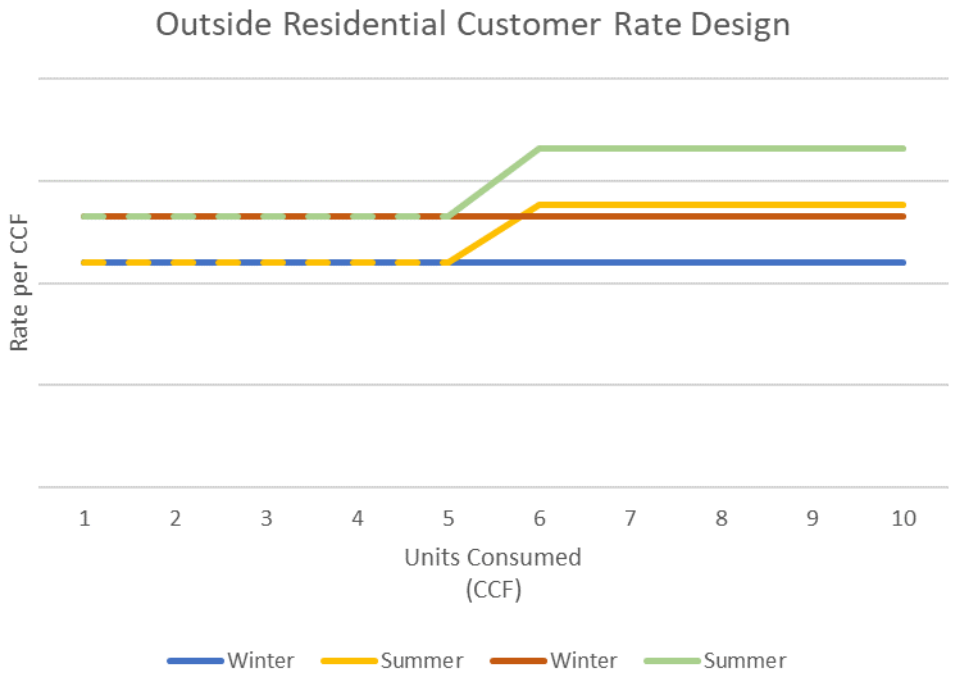
Rate Design Philosophy

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

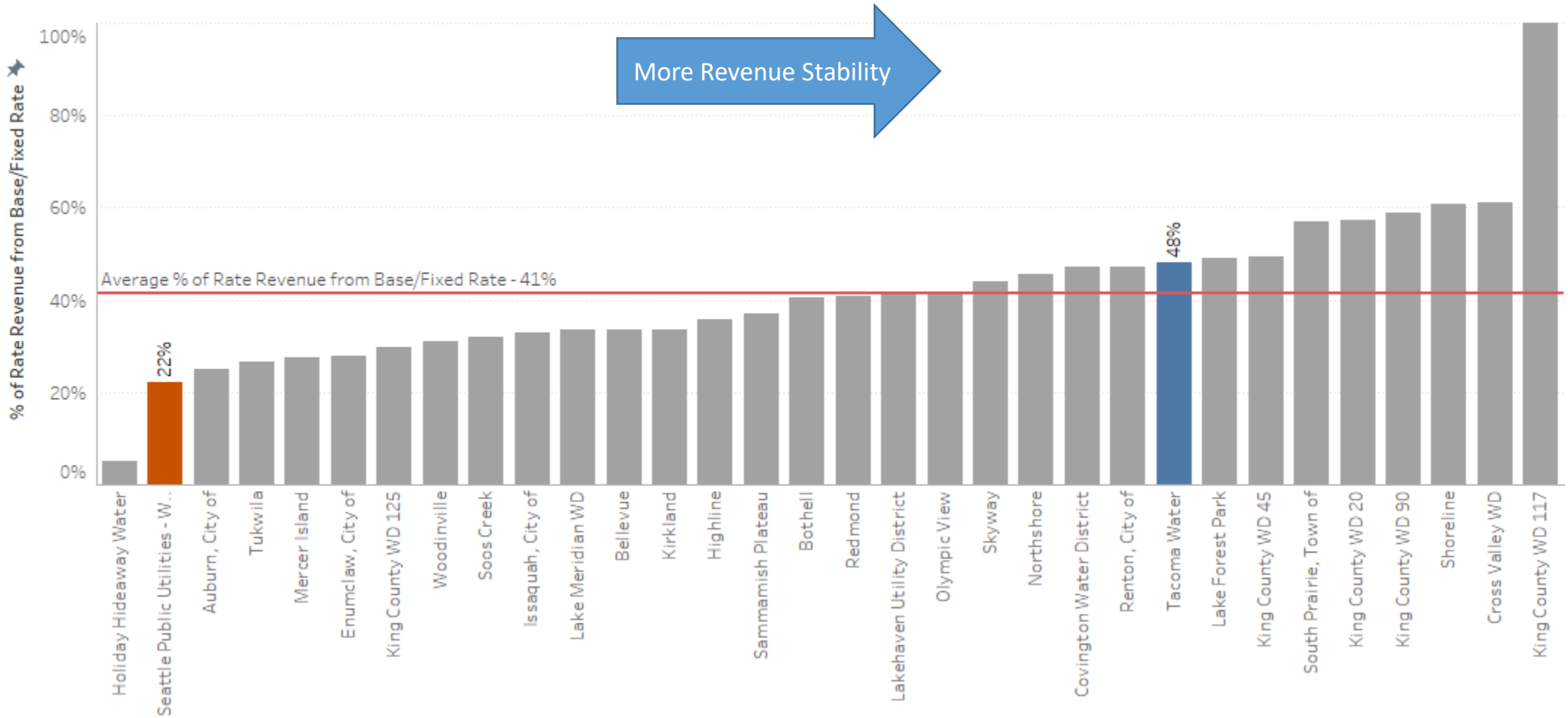
Tacoma Water applies a 20% differential to all rates before the addition of any jurisdiction-specific taxes. This is meant to compensate the utility for the risk it bears to serve these customers.





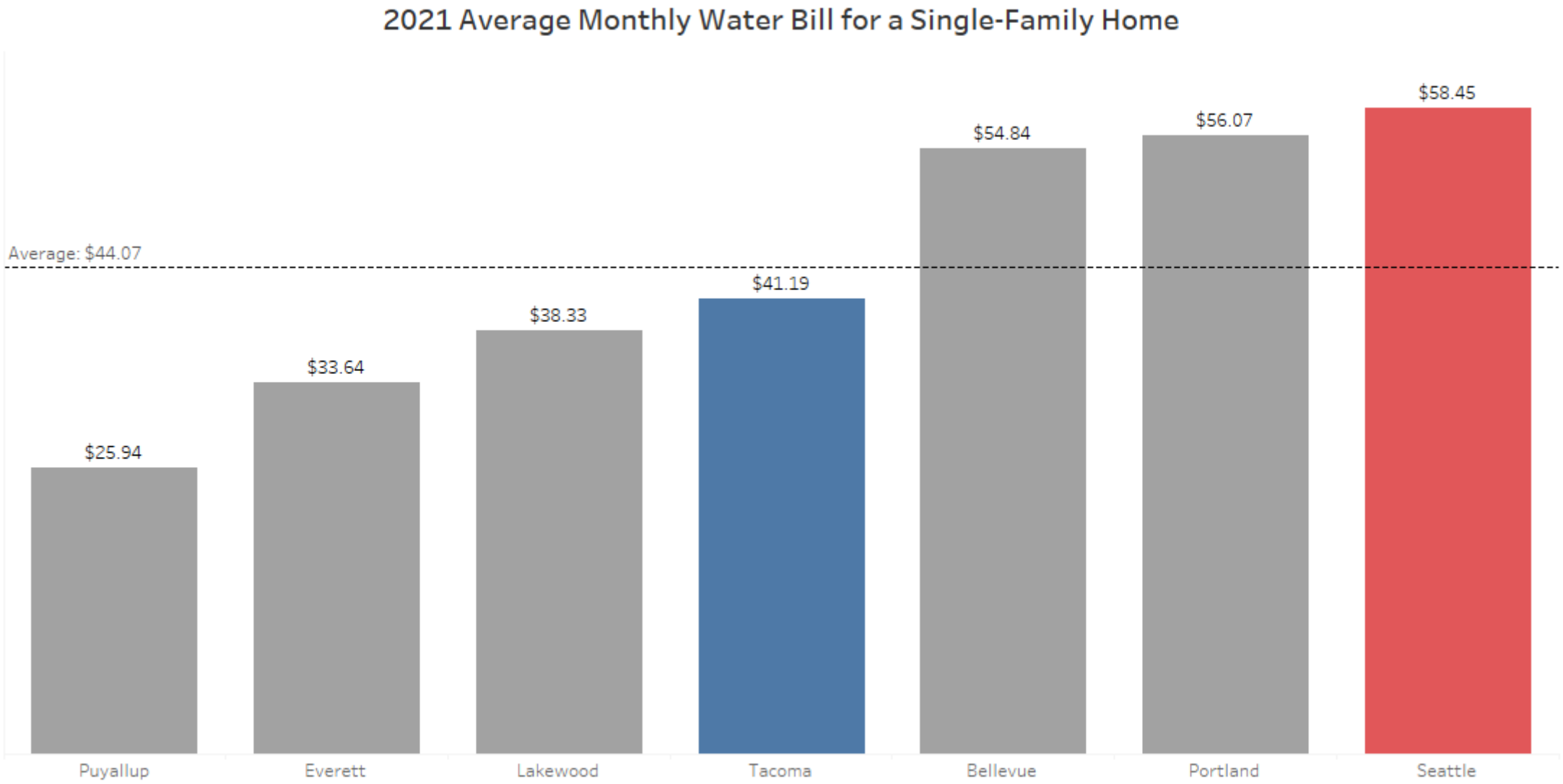
Fixed vs Variable Cost Recovery

TACOMA WATER
TACOMA PUBLIC UTILITIES



Fixed Cost Recovery Does Not Determine Bill

TACOMA WATER
TACOMA PUBLIC UTILITIES

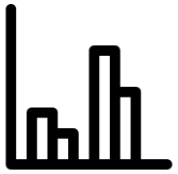


This comparison assumes an average single family consumes is 6 CCF in winter months and 9 CCF in summer months, with a 5/8" meter.

Summary

TACOMA WATER
TACOMA PUBLIC UTILITIES

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

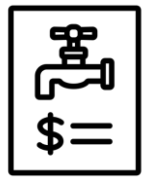
Provides bill stability as large swings using this method are rare and can be phased in

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
TACOMA PUBLIC UTILITIES

SD3
Rates

SD2
Financial
Stability

Tacoma Power Rate Design

Section 6

Part One: Basics of Electric Rates

Ratemaking Process

TACOMA POWER
TACOMA PUBLIC UTILITIES

Revenue Requirement

"How much money do we need?"

Cost-of-Service Analysis

"Who pays what?"

Rate Design

"How do customers pay?"

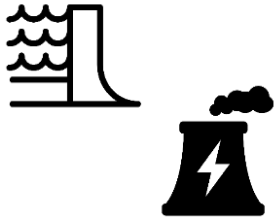
How to Eat the Pie?

- Design rate structure to collect revenue from customers in class
- Set actual cents **per kWh**, customer charge **per month**, etc.

Key Takeaways

TACOMA POWER
TACOMA PUBLIC UTILITIES

Electric cost causation is more complex because electricity has two concepts of usage: **energy** and **demand**



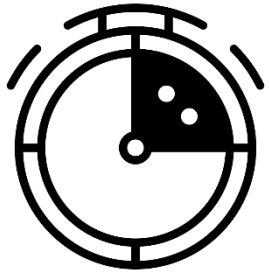
Hydroelectric cost causation is very **different** when compared to fossil-fuel cost causation

Issues can arise when **revenue-recovery** structure (rate design) **differs from cost structure**

Peak versus Total Usage

100 kW

×



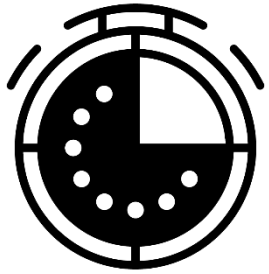
1 hour

1 kW

DEMAND

"How big is the pipe?"

×



100 hours

=

100 kWh

ENERGY

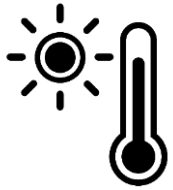
"How much went through the pipe?"

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
TACOMA PUBLIC UTILITIES

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.

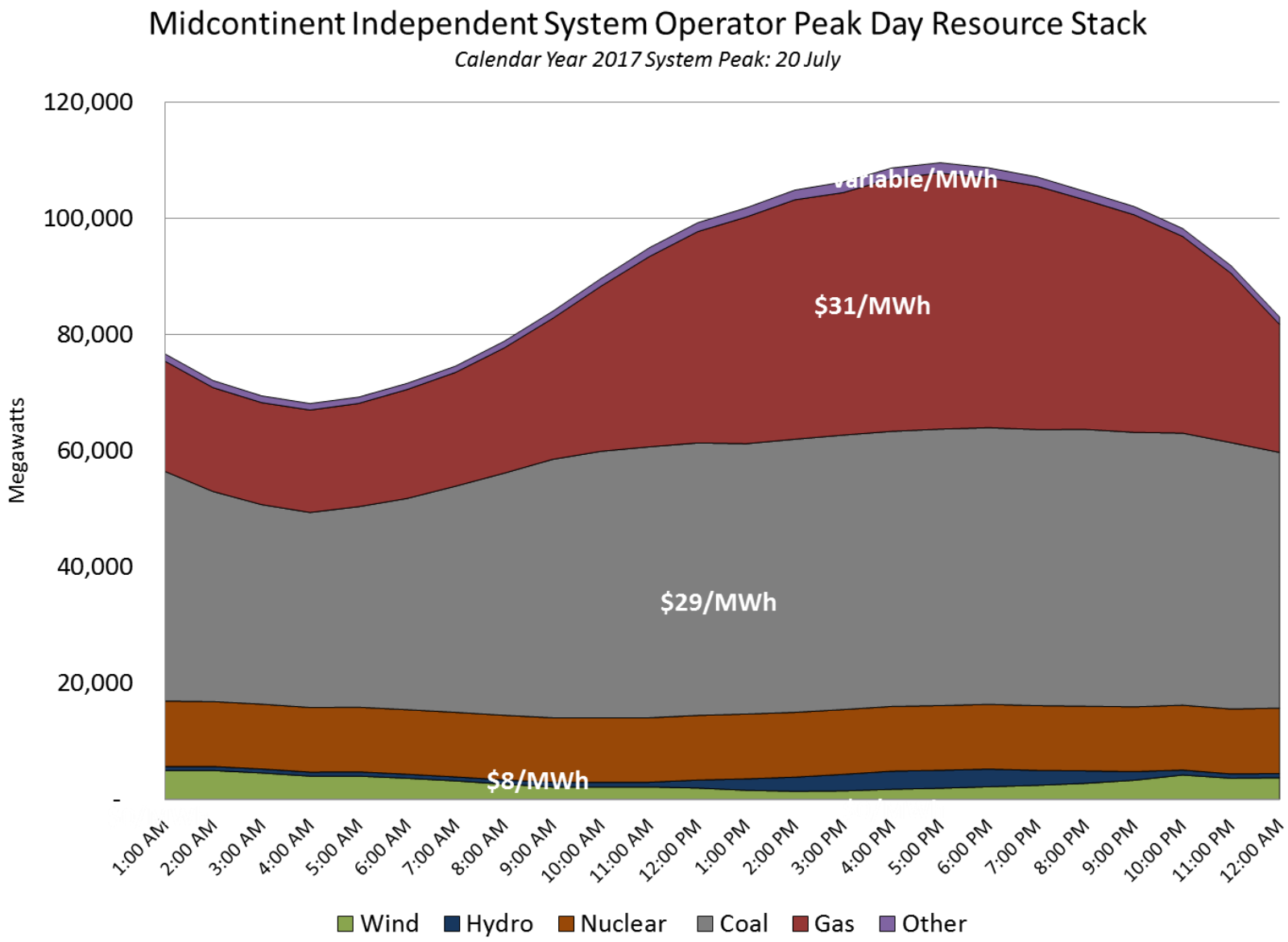
The vast majority of American utilities are "summer peaking" utilities. On hot and sunny summer day, other utilities see system load spike dramatically (sometimes doubling from the lowest load to the highest load of a day). The "cold snaps" experienced in Tacoma Power's territory do not trigger similar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

Typical Resource Stack

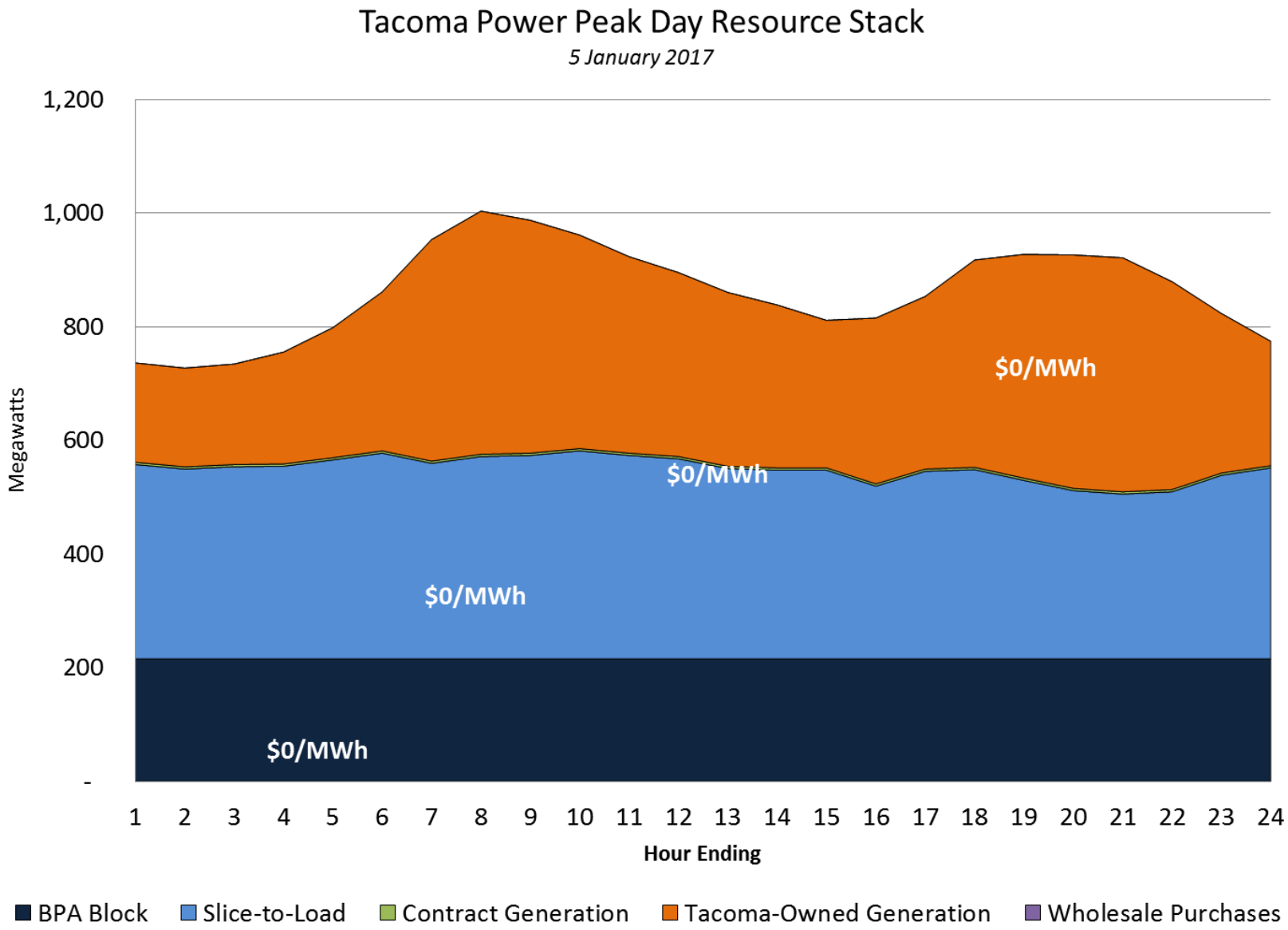


Calculated from the NREL Annual Technology Baseline Cost and Performance Summary, $/MW indicate the average marginal cost of each fuel source.

"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.

Tacoma Resource Stack



$/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).

Theory of Electric Rate Structures

TACOMA POWER
TACOMA PUBLIC UTILITIES

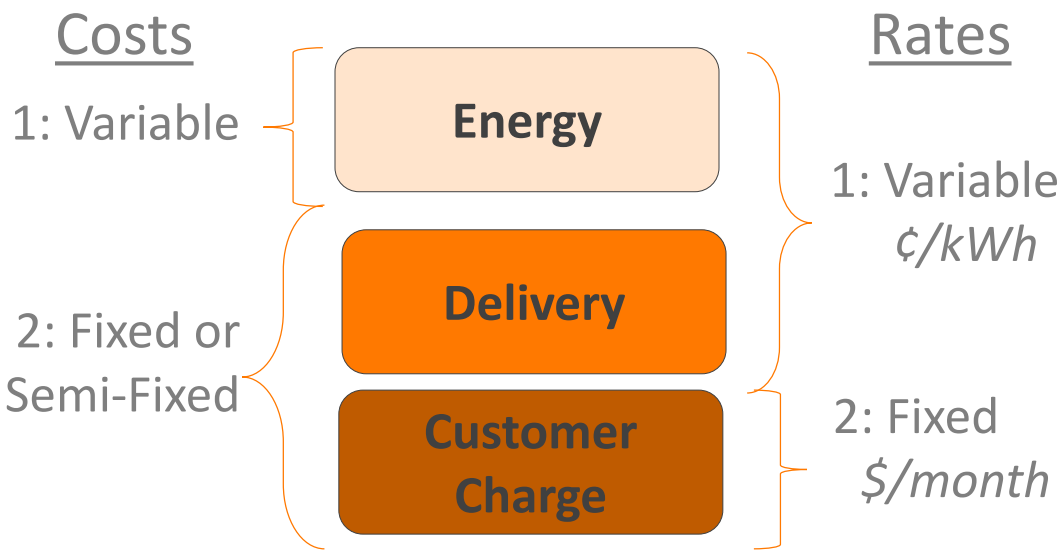
The chart below summarizes the major costs of an electric utility, how they are classified, and the type of pricing (rate) structure which most closely aligns with the cause of the cost.

COST	CLASSIFICATION		PRICING STRUCTURE
	TYPE	CAUSAL FACTOR(S)	
Purchased Power	Semi-fixed, Variable	Demand, Energy	$ per kW, $ per kWh
Generation	Fixed, Variable	Demand, Energy	$ per kW, $ per kWh
Transmission	Fixed, Semi-fixed	Demand	$ per kW
Distribution	Fixed, Semi-fixed	Demand, Customers	$ per kW, $ per month
A&G	Fixed, Semi-fixed	Demand, Customers	$ per kW, $ per month

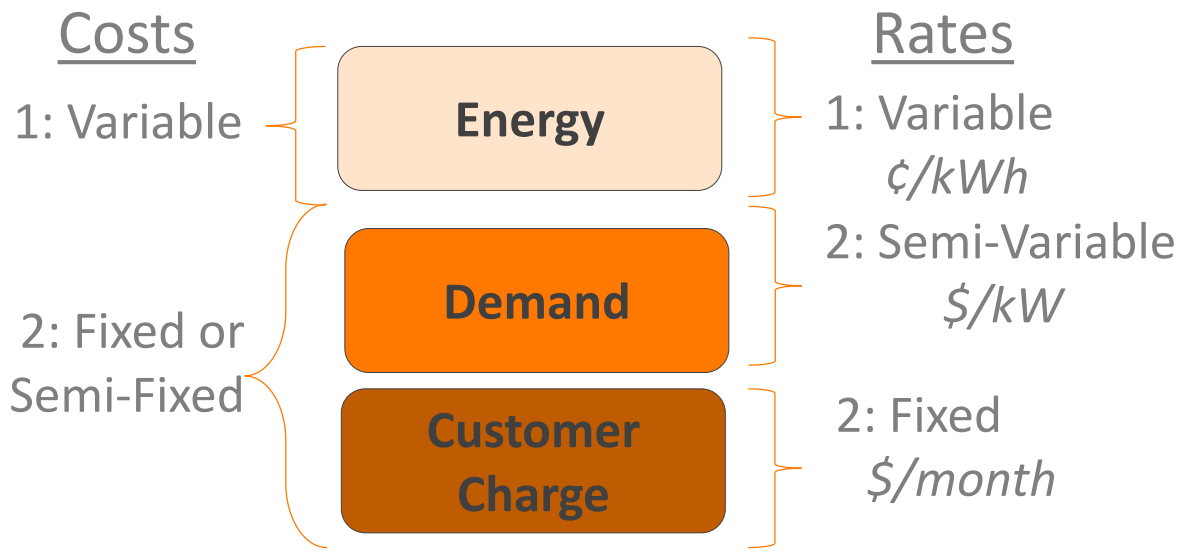
Practice of Rate Design

TACOMA POWER
TACOMA PUBLIC UTILITIES

Two-Part Rate
(Requires Simple Meter)



Three-Part Rate
(Requires Demand Meter)



Two-Part Rate Schedules:

- Residential
- Small General Service
- Street Lighting & Traffic Service (some fixtures only)

Three-Part Rate Schedules:

- General Service
- High-Voltage General
- Contract Industrial

Fixed & Variable Costs and Revenues

TACOMA POWER
TACOMA PUBLIC UTILITIES

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

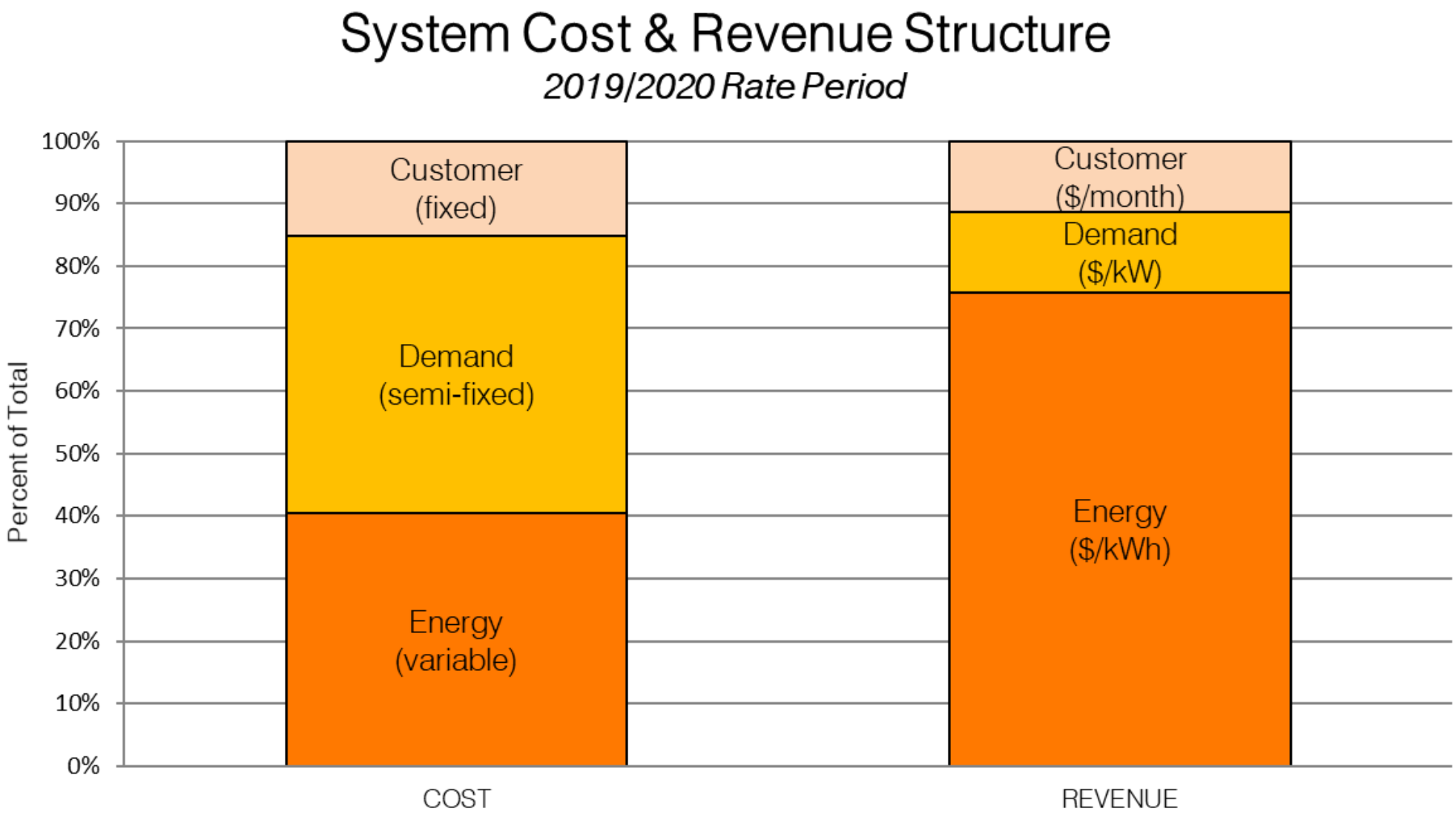
ENERGY

- 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

Fixed & Variable Costs and Revenues

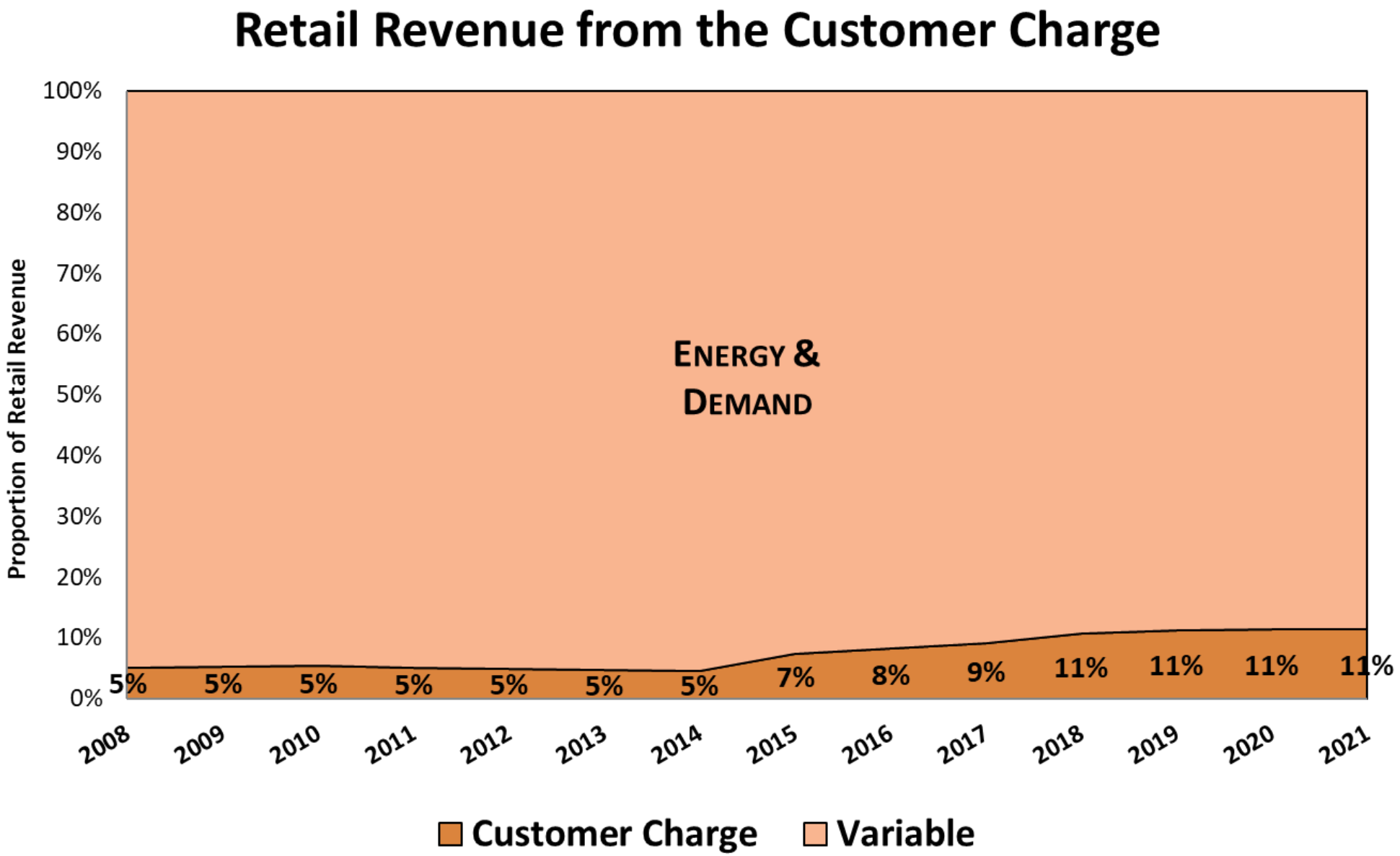


Most of the total Tacoma Power system **costs are fixed**. At the same time, most of the total Tacoma Power **revenues are variable**.

From 2019/2020 COSA. Amounts for Click! underrecovery included as a fixed customer item.

Fixed & Variable Retail Revenue

TACOMA POWER
TACOMA PUBLIC UTILITIES

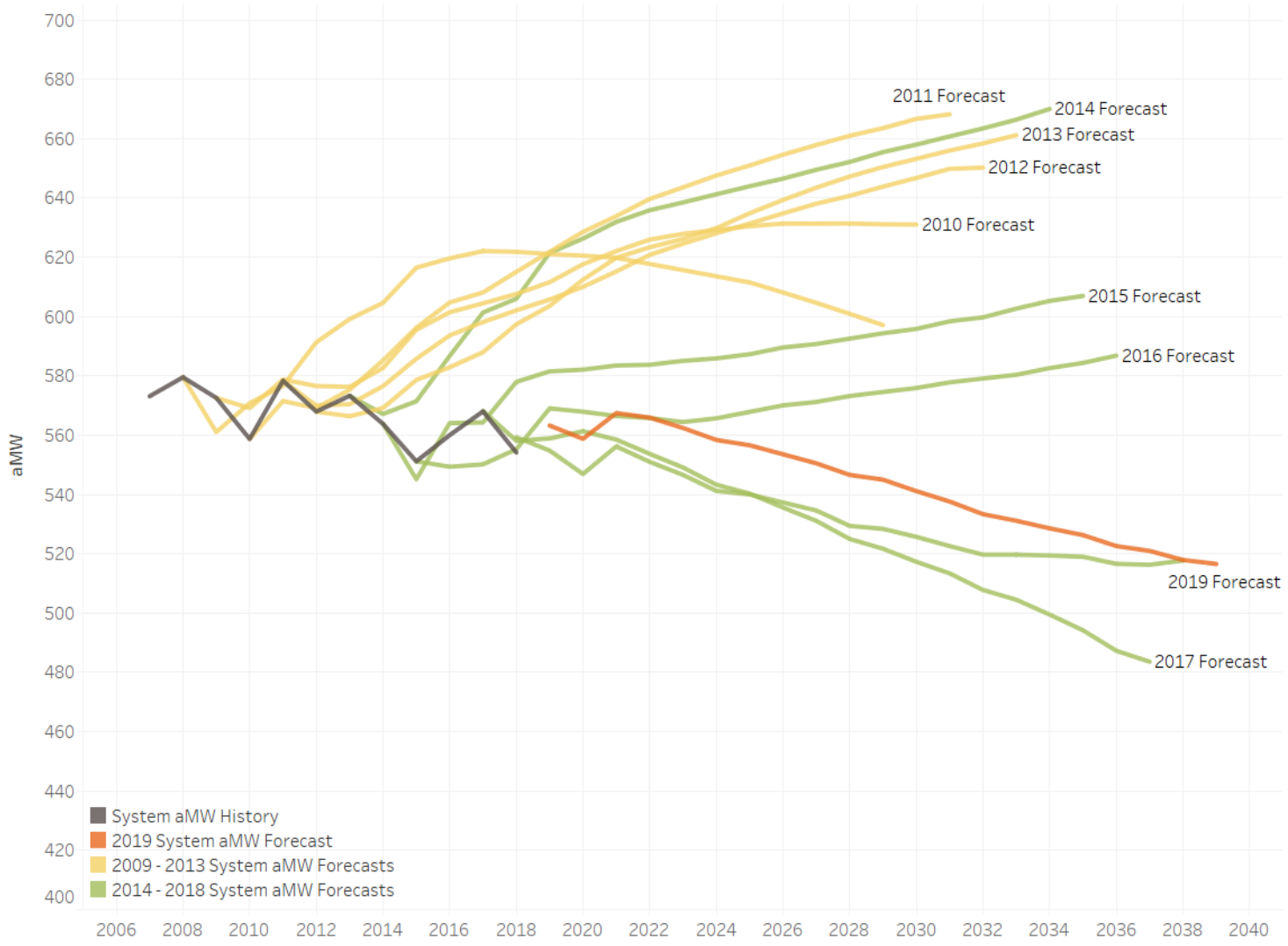


Fixed & Variable Costs and Revenues

TACOMA POWER
TACOMA PUBLIC UTILITIES

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
TACOMA PUBLIC UTILITIES

SD3 Rates

SD2 Financial Stability

SD1 Equity and Inclusion

SD5 Environmental Leadership

SD11 Decarbonization/ Electric Vehicles

Tacoma Power Rate Design

Section 6

Part Two: Special Issues Regarding Fixed Electric Charges

Power Residential Ratemaking

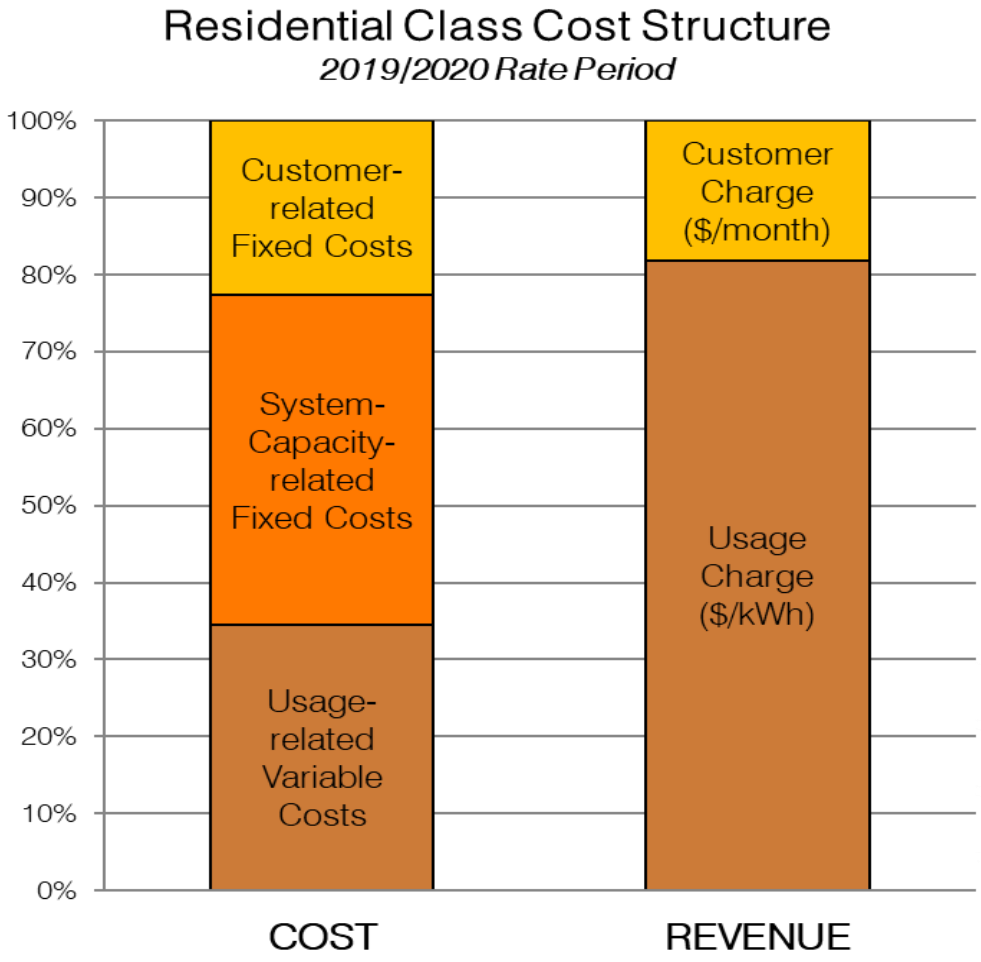
TACOMA POWER
TACOMA PUBLIC UTILITIES

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

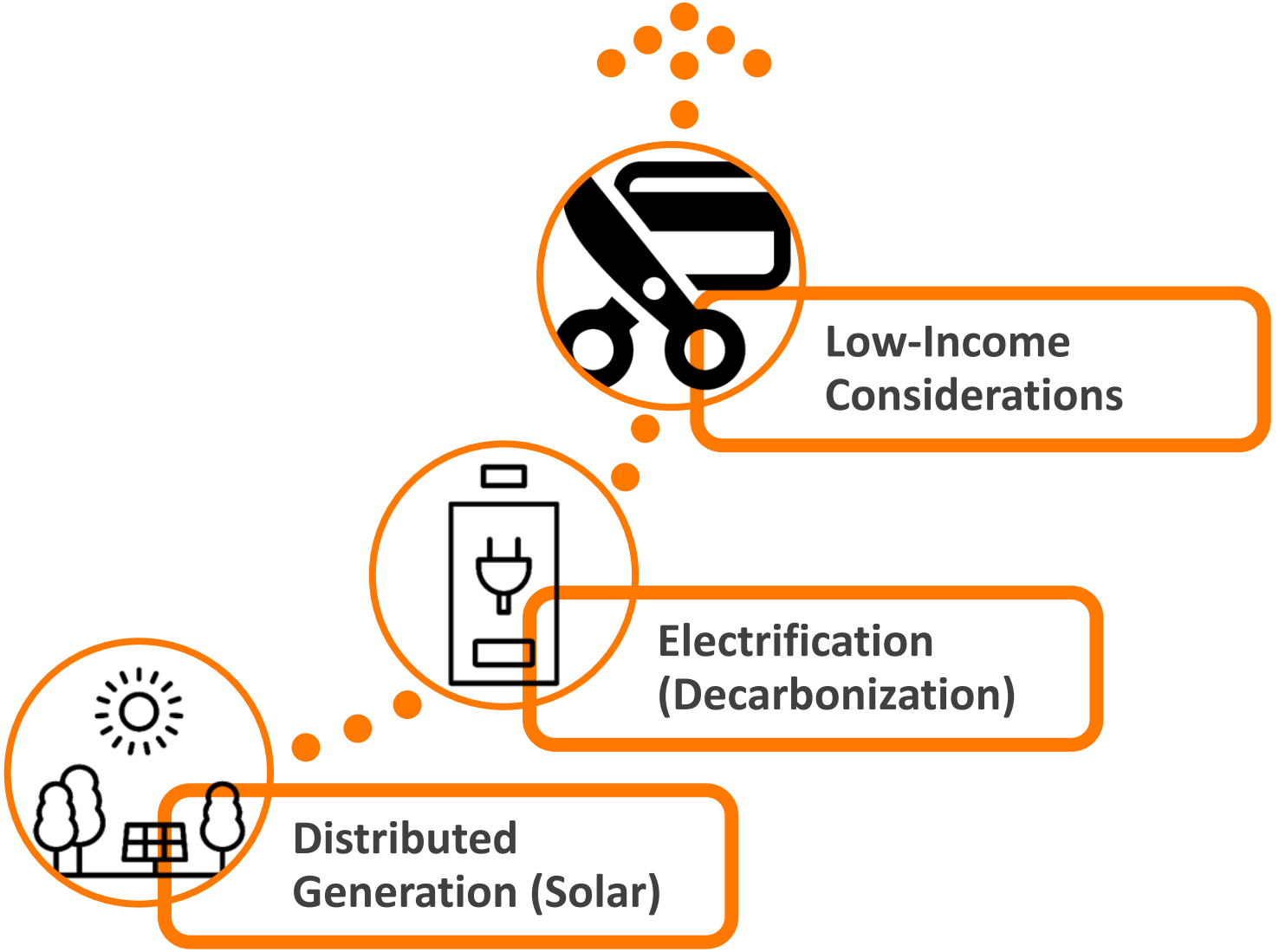


Data from 2019/2020 Cost-of-Service Analysis. Does not include $9.6 million in fixed cost allocated for Click! underrecovery.

Key Rate Design Takeaways

TACOMA POWER
TACOMA PUBLIC UTILITIES

Rate design impacts policy objectives.



Distributed Energy Resource Basics

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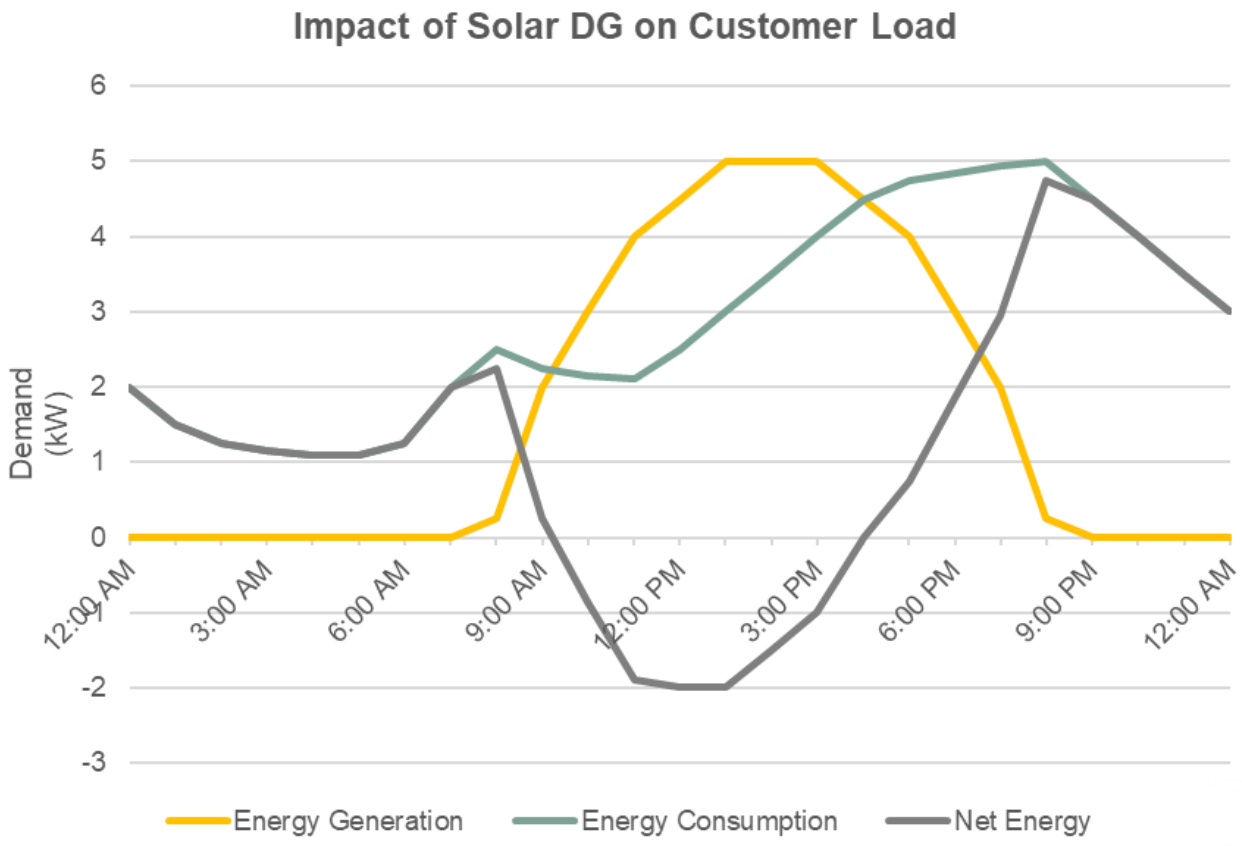
Most customer-owned DER systems only produce power part of the day or year. **The utility must provide power during other times** (at night for solar photovoltaic systems, for example). This requires the **utility to provide the same fixed transmission and distribution infrastructure to the DER customer 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

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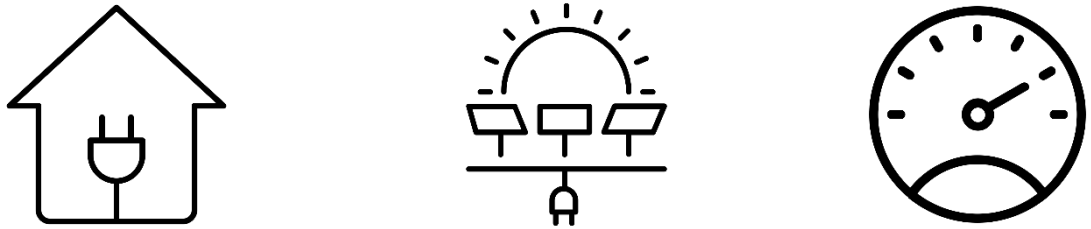

$$Energy\ Consumed - Energy\ Generated = Net\ Energy$$

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

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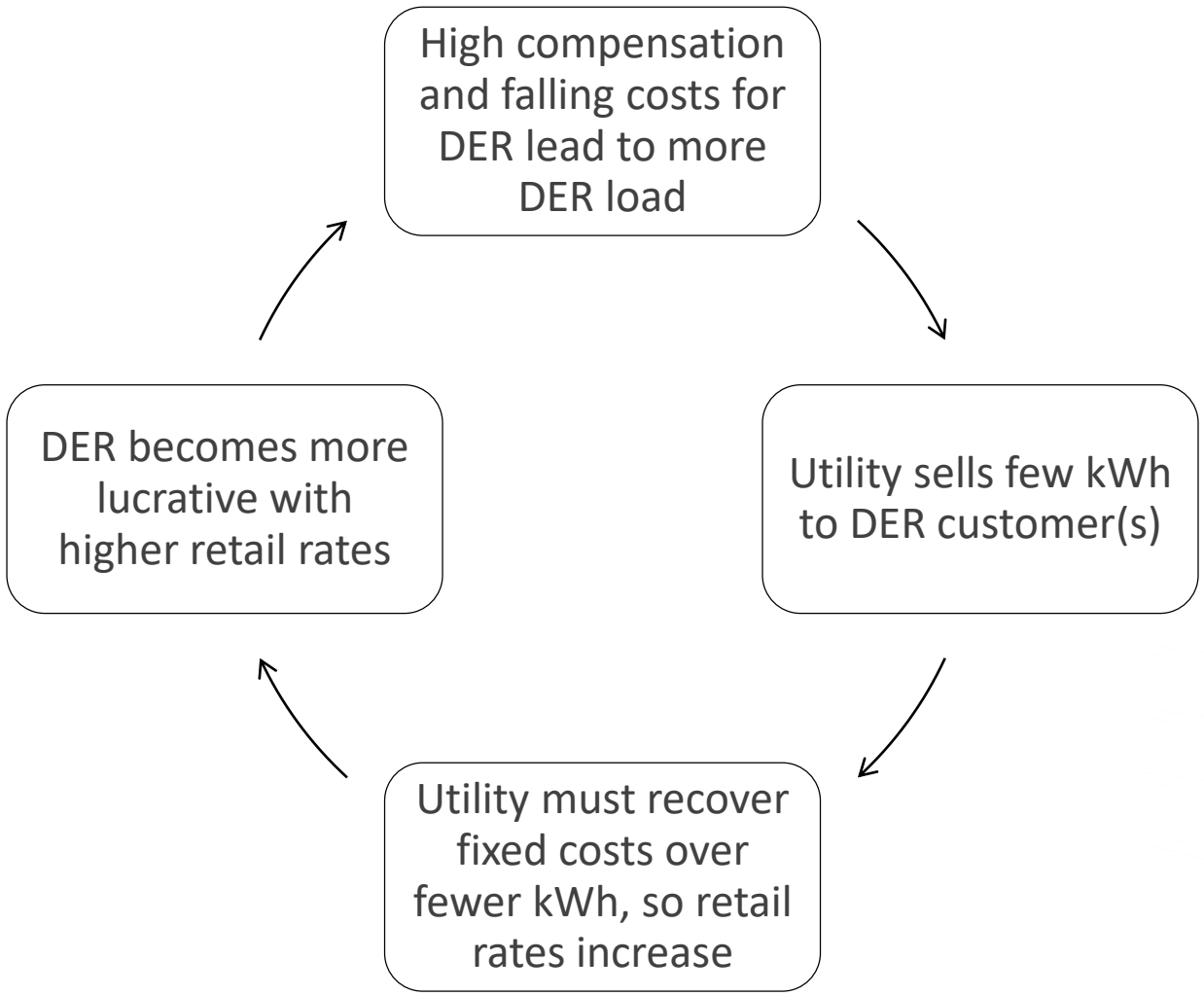
DER Adoption Rates are Increasing

- 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"



Rate Design for Decarbonization

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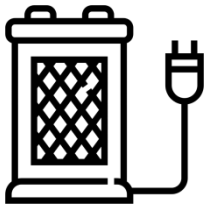
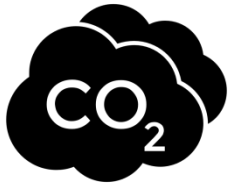
Low-Cost Electrification Encourages Decarbonization

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

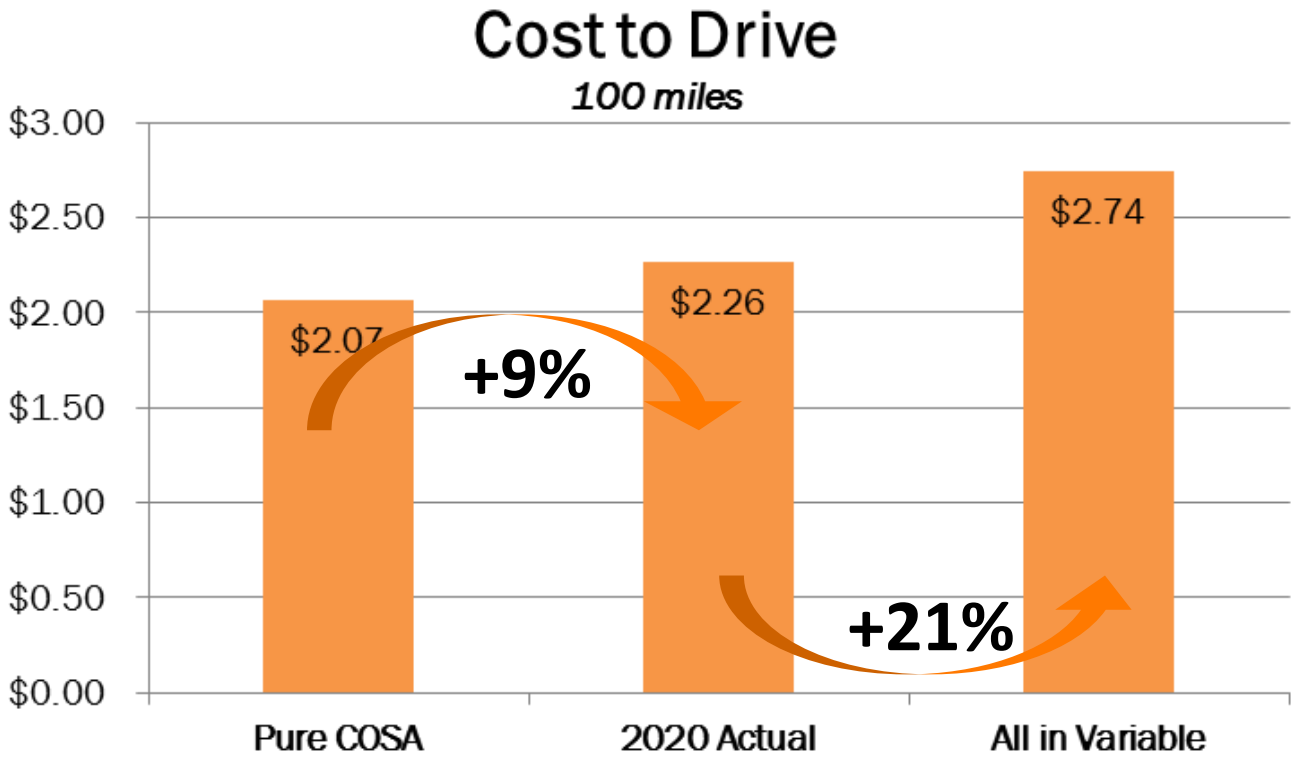




Switching from efficient natural-gas heaters to efficient electric heaters reduces carbon emissions by about 6400 pounds per year.

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.

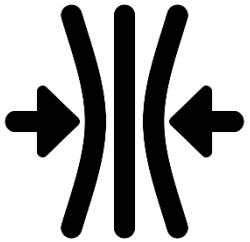
Residential Rate Example	19/20 COSA	2020 Actual	All in Variable
Customer	$23.30	$17.30	$0.00
Energy	3.2890¢	4.5351¢	4.3626¢
Delivery	4.0860¢	3.5353¢	5.4198¢

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

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Tacoma Power service area research and data…

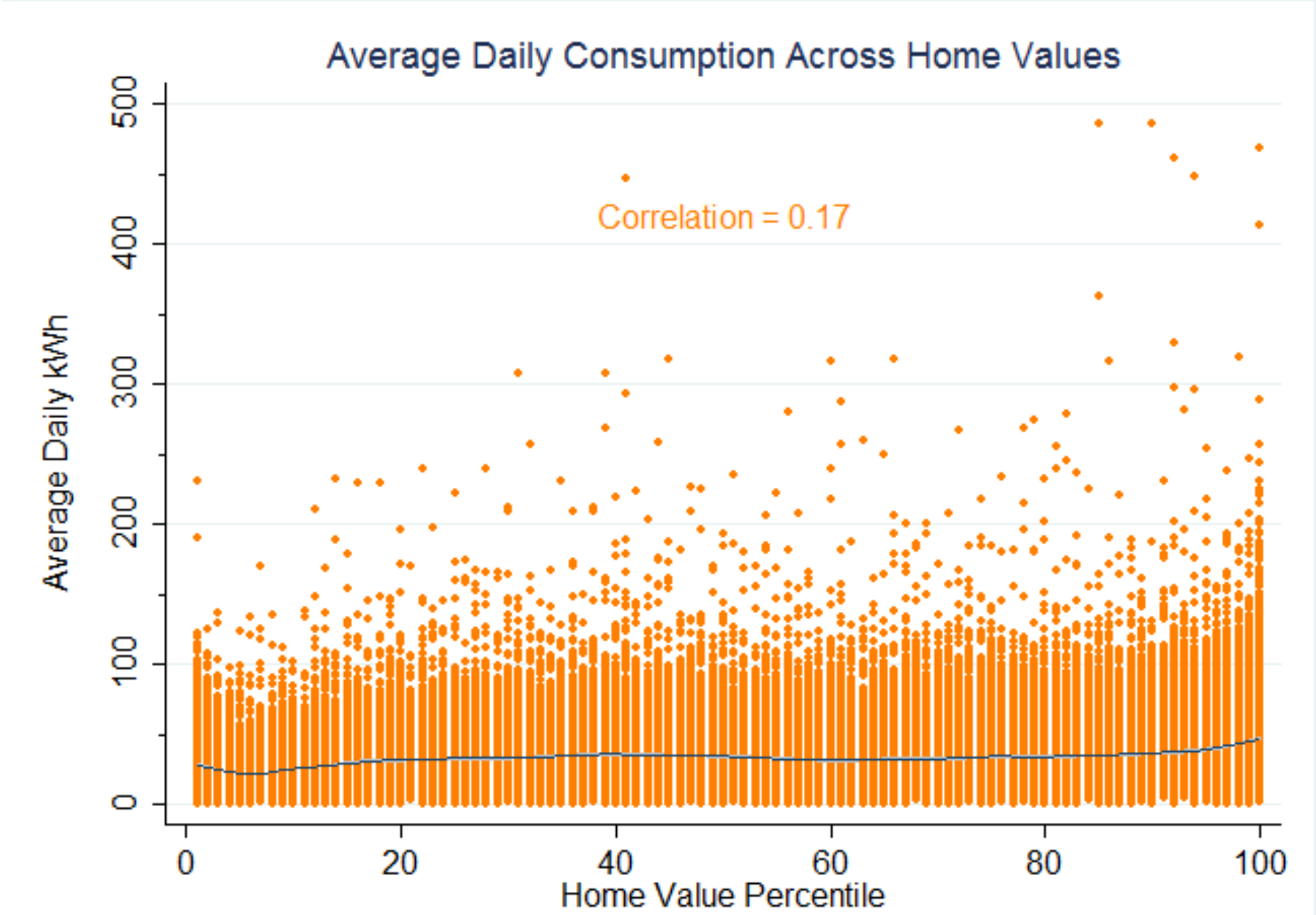
Many low-income customers live in high-use houses or inefficient apartments. They are large users and benefit from a fixed increase. Many other low-income customers live in efficient houses or small-use apartments. They benefit from a variable charge increase.

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

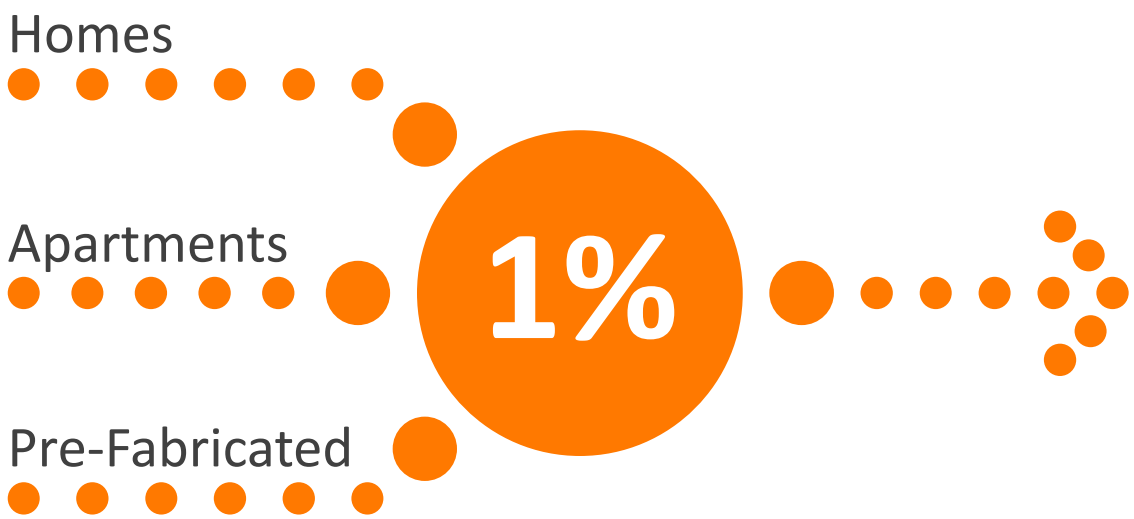
Consumption records were pulled for the valued houses, apartments, mobile homes, *et cetera*.

NO LINK was found between the value of the house, apartment, or other dwelling and the consumption level.

Income Does Not Determine Usage



Design Cannot Protect Low-Income



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

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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 an 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.

Example	Higher Fixed Charge*	Higher Variable Charge†	Difference
Low	$ 68.39	$ 60.78	$ (7.61)
High	$ 155.17	$ 172.33	$ 17.16

Fixed Charges Reduce Seasonality

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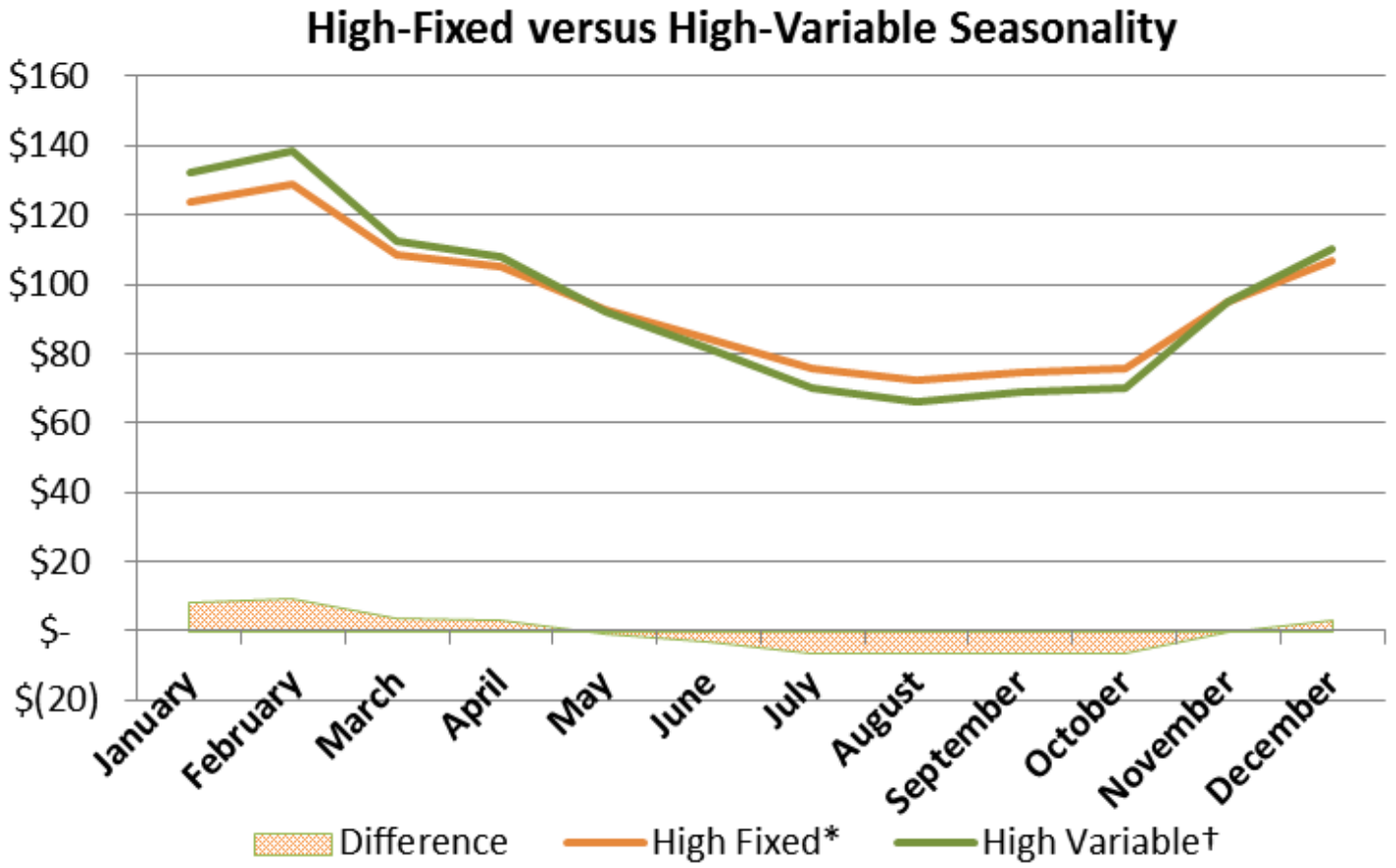
High variable costs result in high winter bills.

- 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

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	Higher Fixed	Higher Variable
Equity & Inclusion	+ low-income, high users benefit + caps dollar impact of rate increase + reduces subsidy to customers that can afford to invest in DER and conservation	+ low-income, low users benefit
Financial Sustainability	+ better aligns prices with cost-to-serve + reduces financial risk of declining loads causing rate increases + increases bill predictability	
Rates	- difficult for some customers to understand/accept	+ easier to understand - low elasticity of demand for electricity requires very high price signals to significantly impact consumption
Environmental Leadership	+ encourages electrification	+ encourages solar and other DER + encourages conservation

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SD3 Rates

SD2 Financial Stability

SD5 Environmental Leadership

SD11 Decarbonization/ Electric Vehicles

Tacoma Power Rate Design

Section 6

Part Three: Electric Vehicle Charging Fee Update

Electric Vehicle Charging Fees

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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

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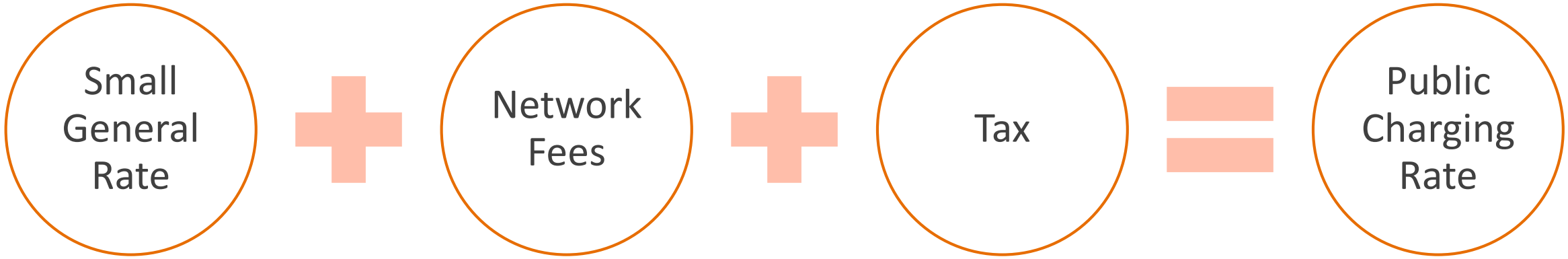
1. Rate aligns with cost of service

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

TACOMA POWER | TACOMA WATER | TACOMA RAIL
TACOMA PUBLIC UTILITIES

SD1 Equity and Inclusion

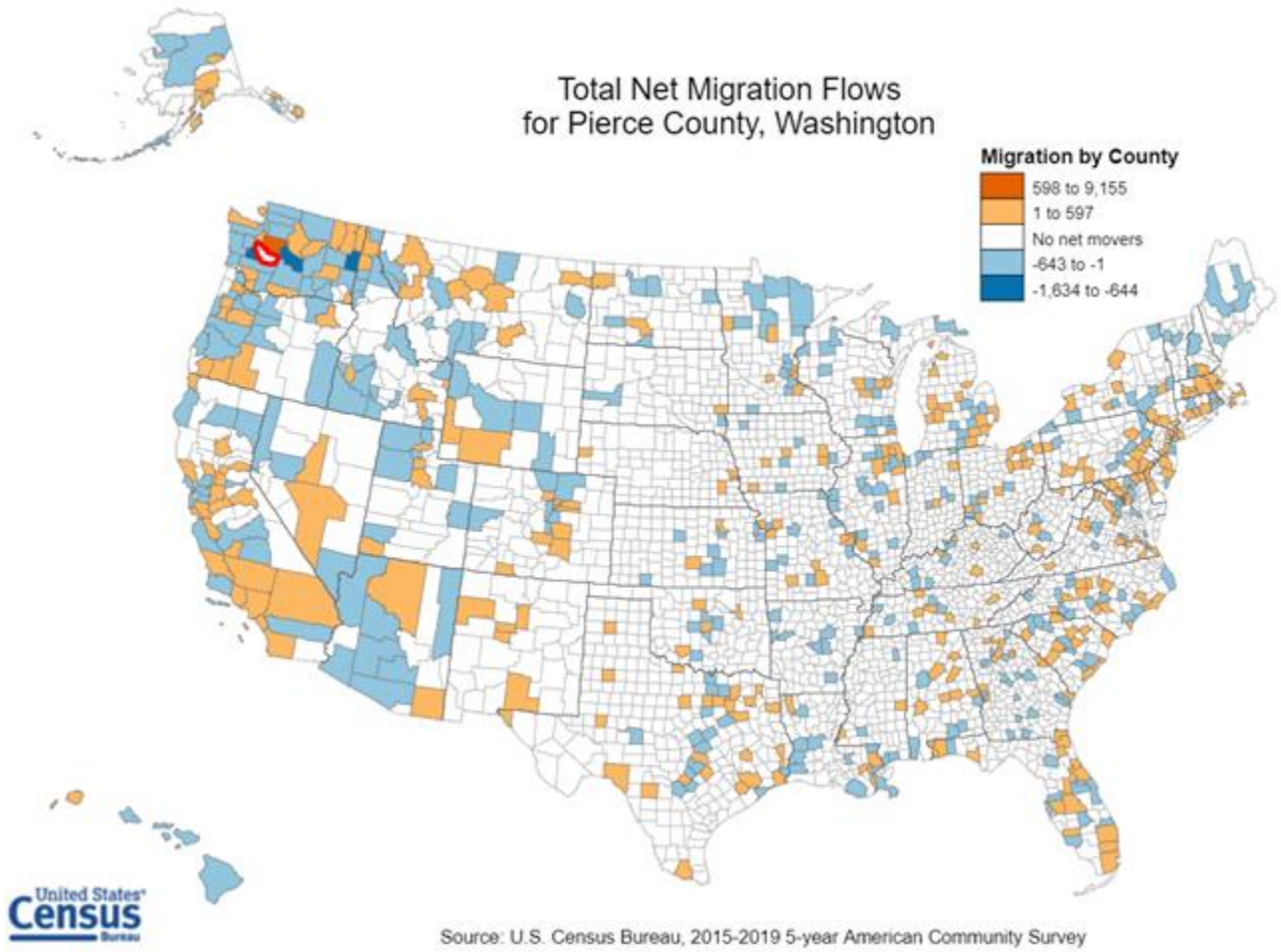
SD2 Financial Stability

SD3 Rates

Demographic Orientation

Power & Water Service Area Trends

Pierce County is Growing: 2015-2019



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%)

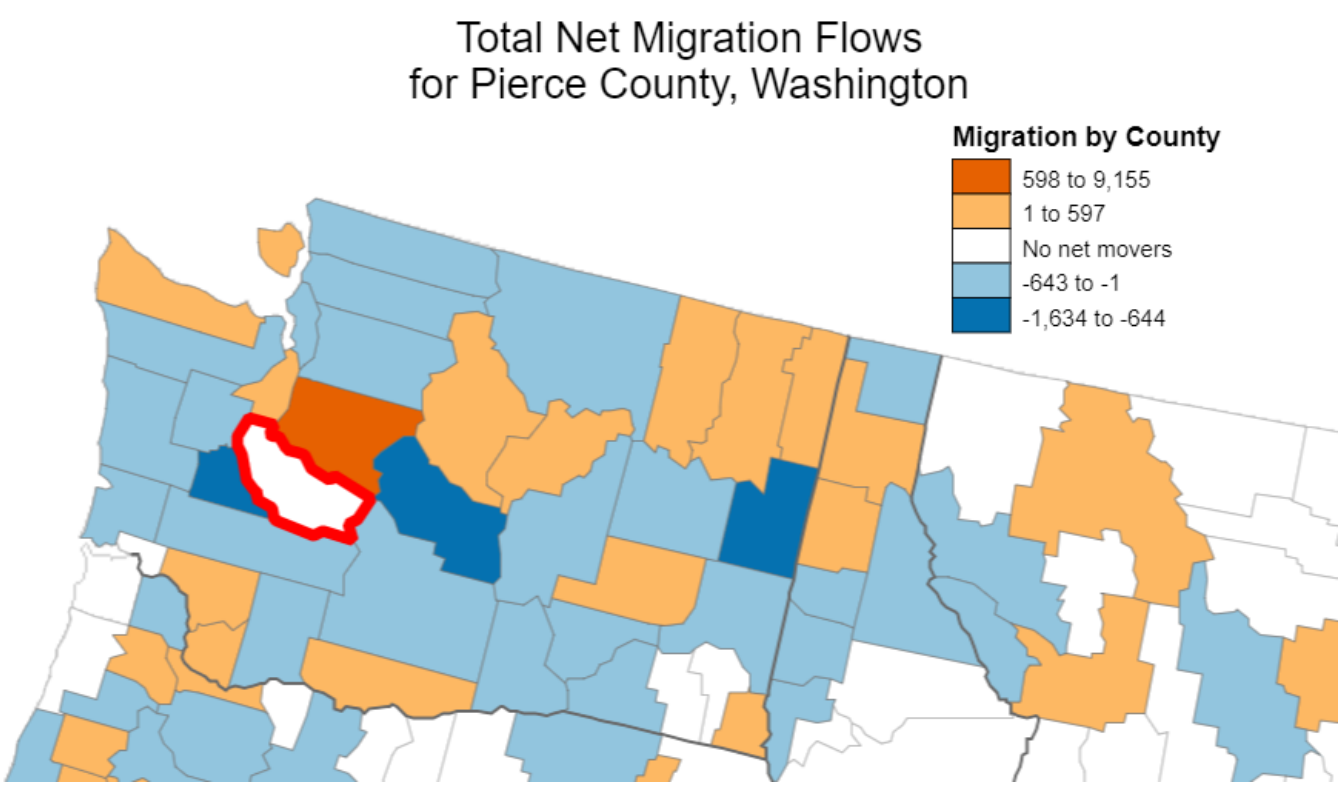
From another state: 30,769

- 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%)

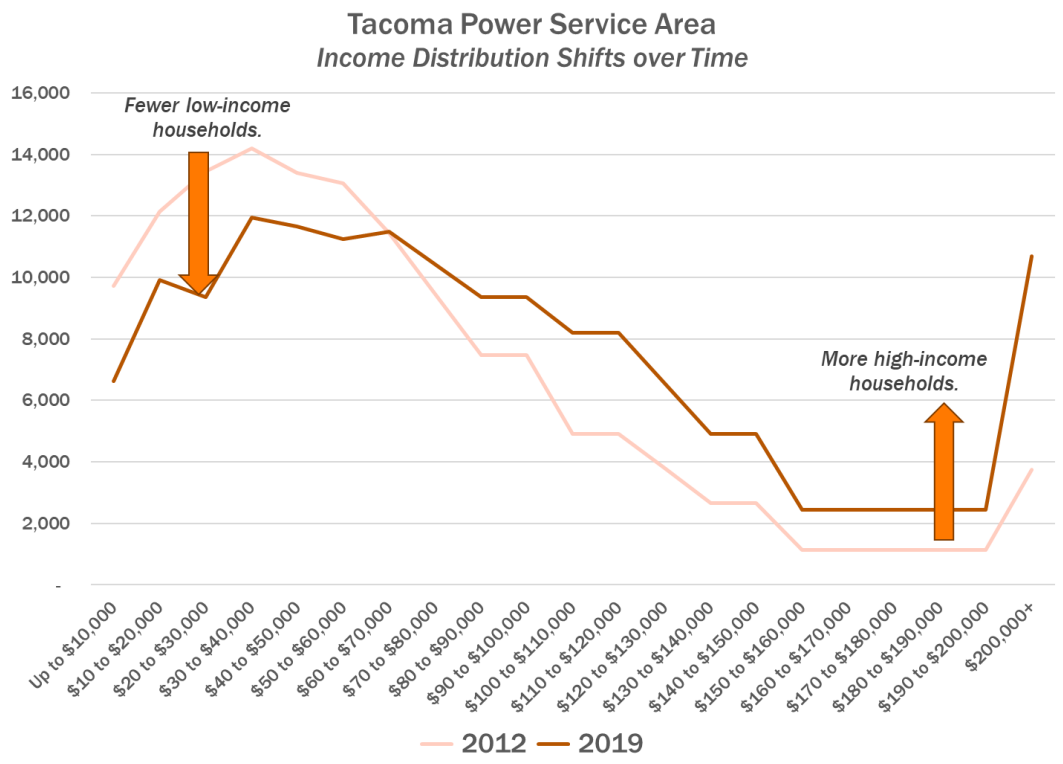
From another county: 31,938

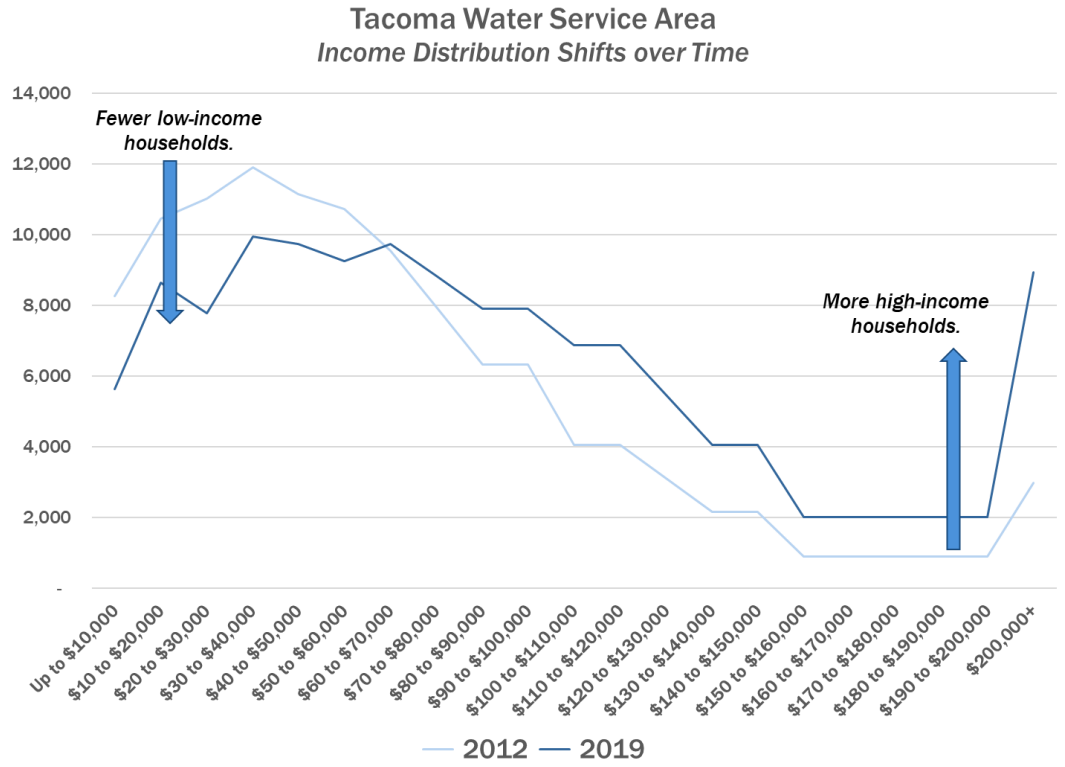
- King: 9,155 net to Tacoma (88% of net entry)

Source: U.S. County Migration Patterns (census.gov)

Income Inequality is Growing

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



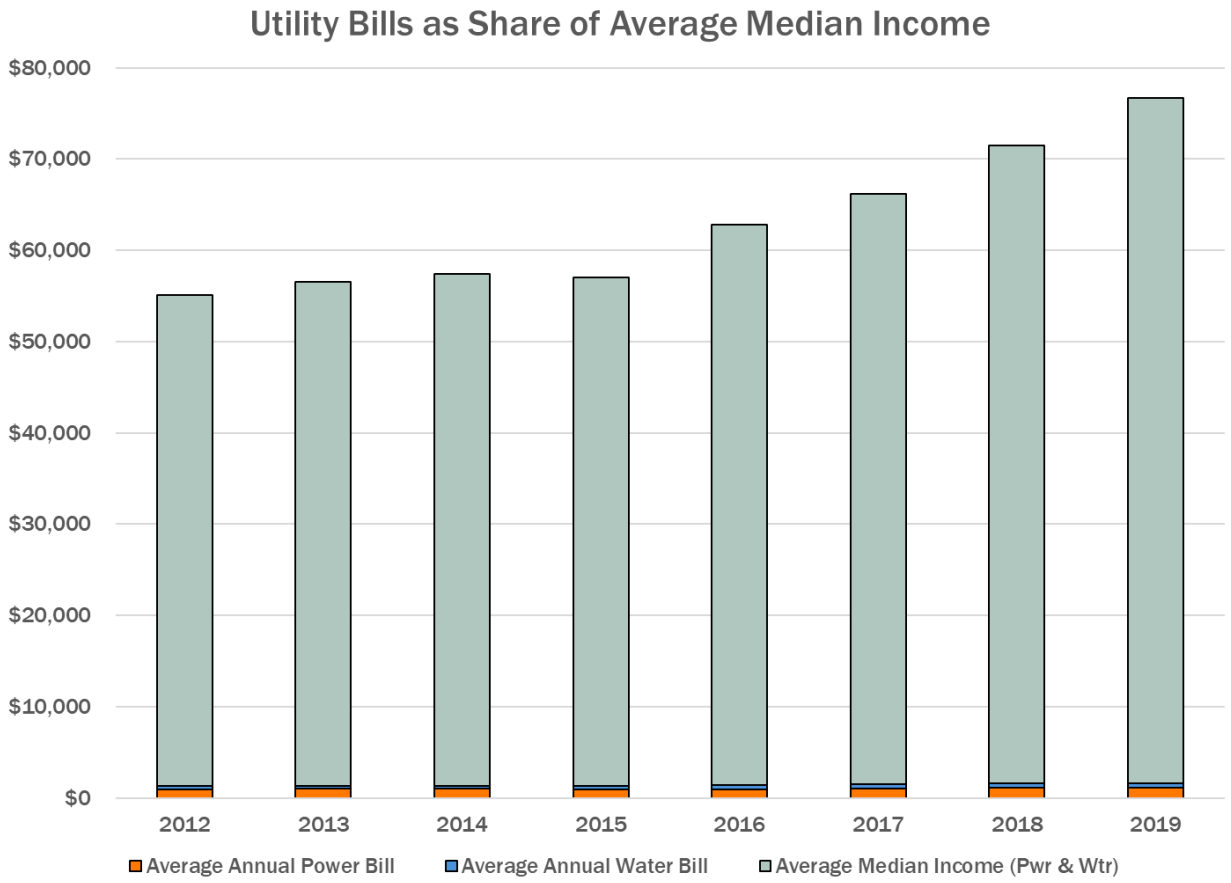


Source: American Community Survey 1-Year Dataset, 2012 & 2019 (U.S. Census Bureau). 2019 is the latest year for which data is available.

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



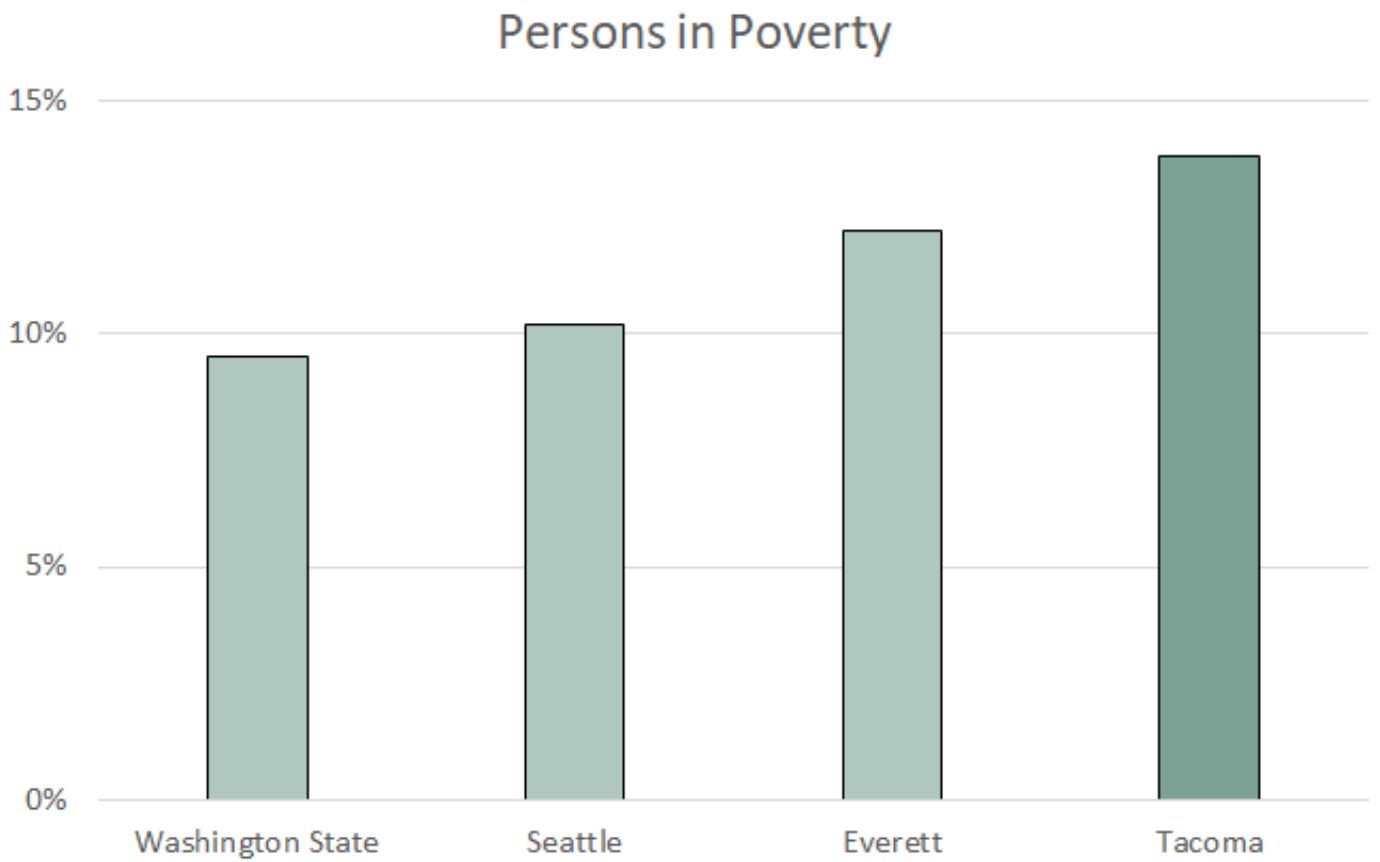
Average Median Income:
- $53,762 to $75,052 (+40%)

Average Bill:
- Power: $933 to $1,113 (+19%)
- Water: $378 to $474 (+25%)

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 More Poverty

Tacoma has **higher percentage** of **individuals in poverty** than other large metropolitan areas in the Puget Sound region.

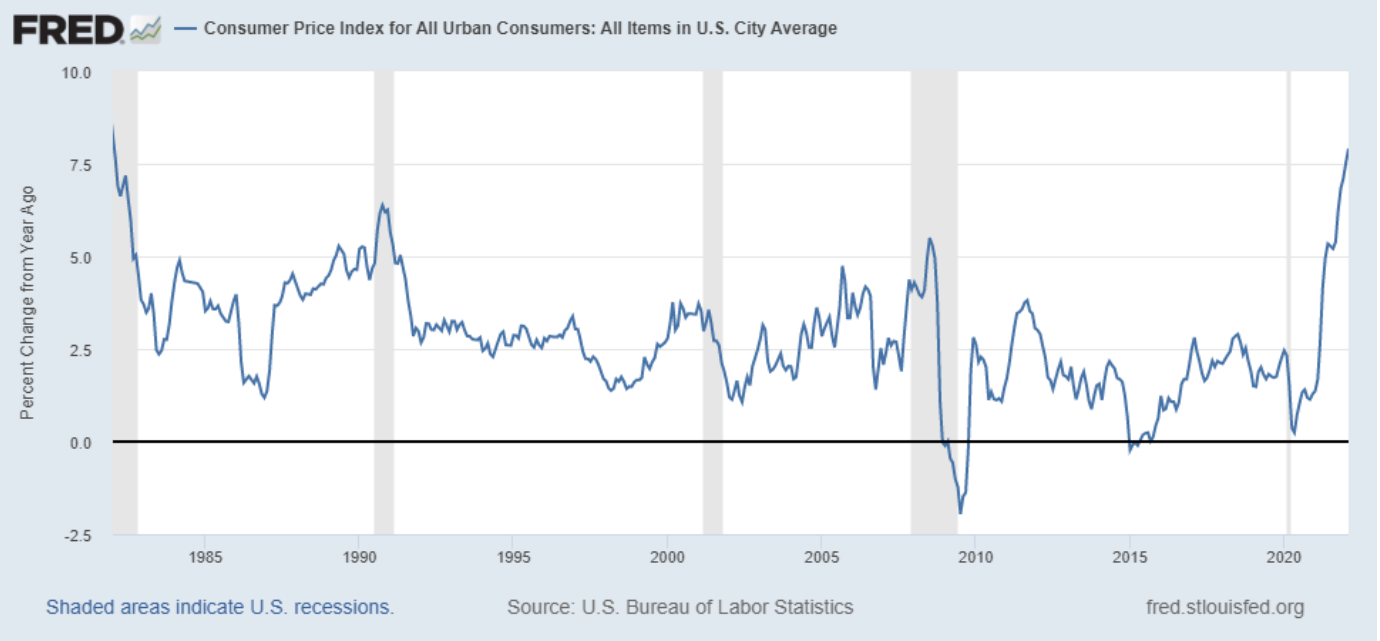


Source: American Community Survey 5-Year Dataset, 2016-2020 (U.S. Census Bureau).

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

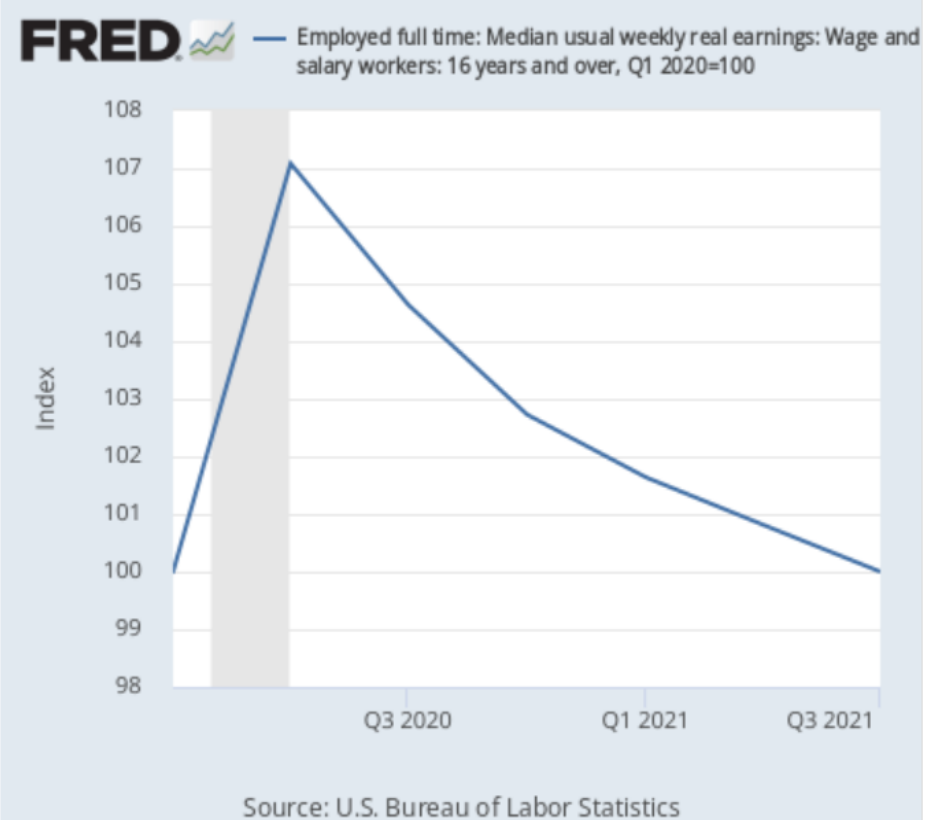


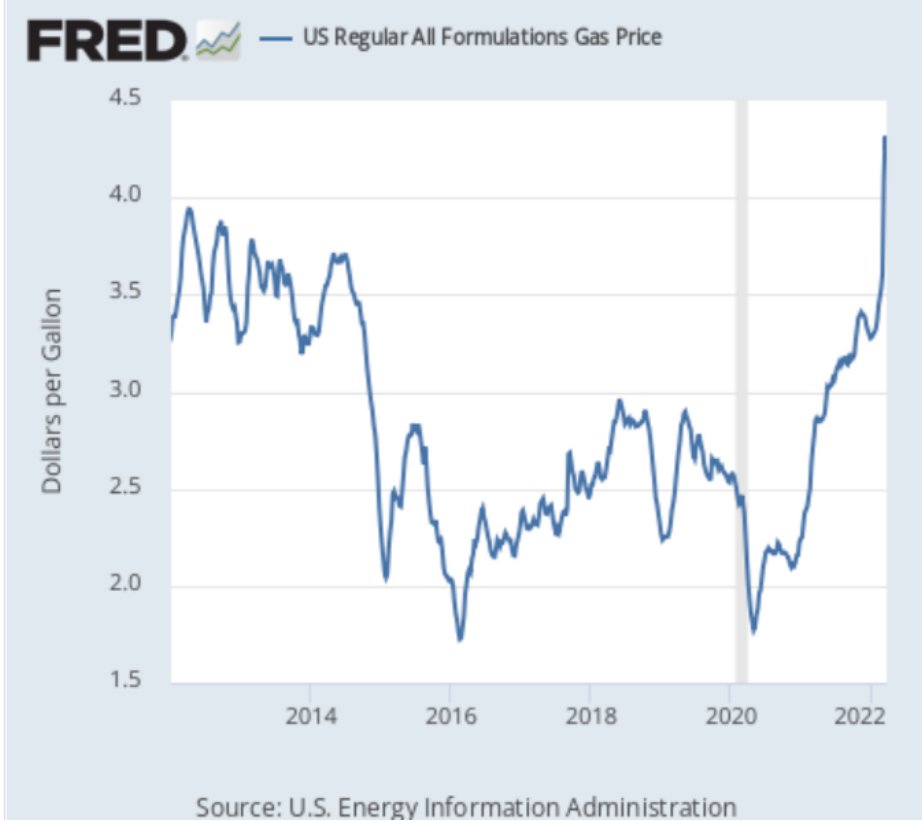
Source: Federal Reserve Economic Database, Consumer Price Index for All Urban Consumers: All Items in U.S. City Average (CPIAUCSL)

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 and 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.

Year	Average TPU Bill	Power Households	Water Households
2021	$134.80	16,055 or 10%	13,849 or 11%
2022	$137.50	16,243 or 10%	14,014 or 11%

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.

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

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TACOMA PUBLIC UTILITIES

SD1 Equity and Inclusion

SD2 Financial Stability

SD3 Rates

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

Household Size	Maximum Monthly Household Income
1	$2,385
2	$2,762
3	$3,068
4	$3,405
5	$3,679
6	$3,953

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
    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

Household Size	Maximum Monthly Household Income
1	$3,180
2	$3,635
3	$4,090
4	$4,540
5	$4,905
6	$5,270

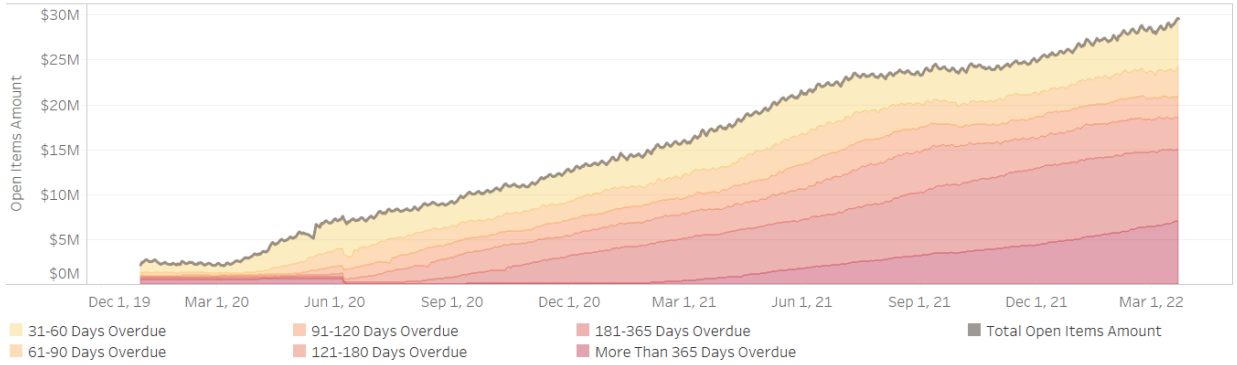
Short-Term Needs

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.

Consumer Class: Residential | Service Division Group: All | Service Division: All | Aging Bins: Multiple values | I want to see...: Open Items

Distribution of Open Items By Aging Bin

includes invoice documents resulting from All utility service(s), and Residential consumer class(es), in aging bins 31-60 Days Overdue, 61-90 Days Overdue, 91-120 Days Overdue and 3 more



March 22

	Total Open Items Amount	% Change in Open Items From Prior Year	Total Doubtful Allowance Amount	% Change in Doubtful Allowance From Prior Year
2022	$29,591,498	70.60%	$20,348,734	108.42%
2021	$17,345,206	494.27%	$9,763,118	833.95%
2020	$2,918,718	40.16%	$1,045,359	27.95%
2019	$2,082,439	33.57%	$817,002	66.05%
2018	$1,559,068		$492,033	

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

TACOMA WATER
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Tacoma Water

Special Considerations for Income-Constrained Customers

Projecting Customer Assistance

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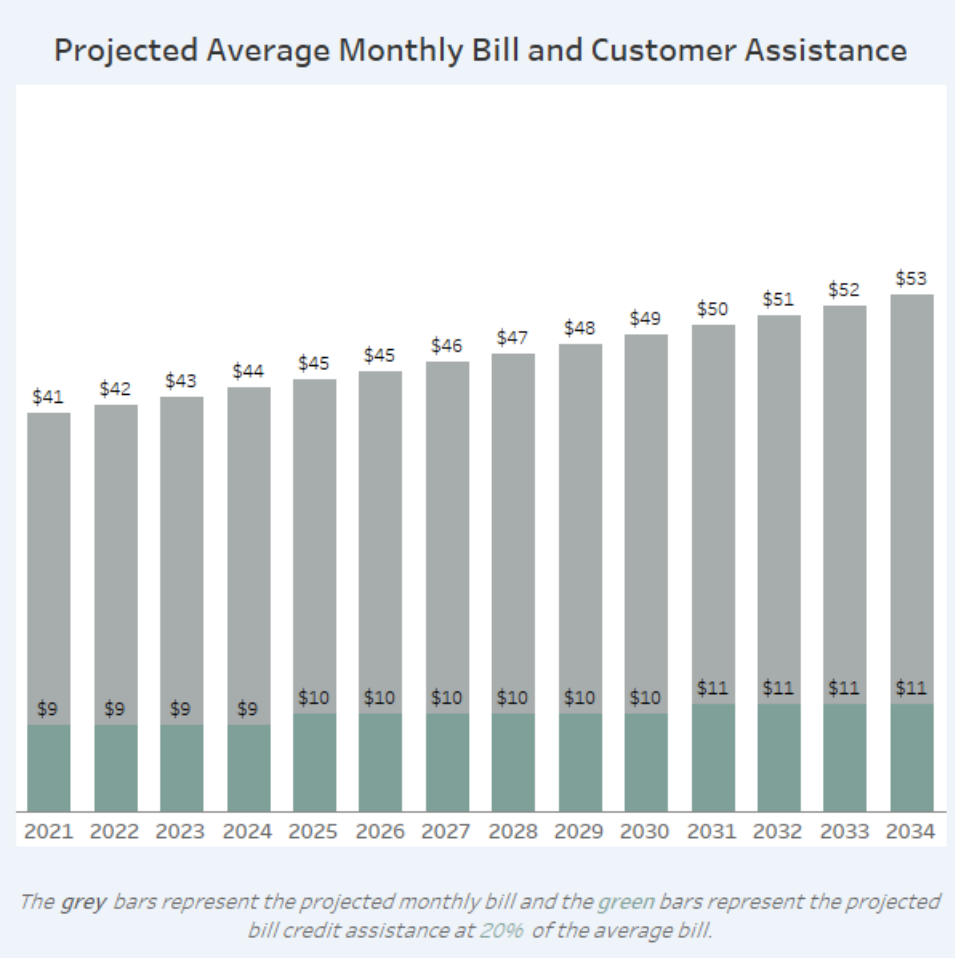
Including Assistance into Projections

- 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

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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

FY21 LIHWAP FUNDING ALLOCATION

AMOUNT

TOTAL: $19,976,183

- ARP: $8,776,882
- CAA: $11,199,301

OPERATIONAL PRIORITIES

- Restoration of services
- Payment of arrearages

PROGRAM COORDINATION

- Joint application with LIHEAP
- Intake and referrals to/from other programs as determined by subgrantees

Source: Washington LIHWAP Profile Summary

Conservation & Customer Programs

TACOMA WATER
TACOMA PUBLIC UTILITIES

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.

Image courtesy of Rachio

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 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.)[1]
2. A grant up to $5,000 income-eligible customers. (You can supplement exceeding amounts with a deferred loan.)[1]

[1] 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.

Water and the Rental Population

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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.

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Special Considerations for Income-Constrained Customers

Current Assistance Portfolio

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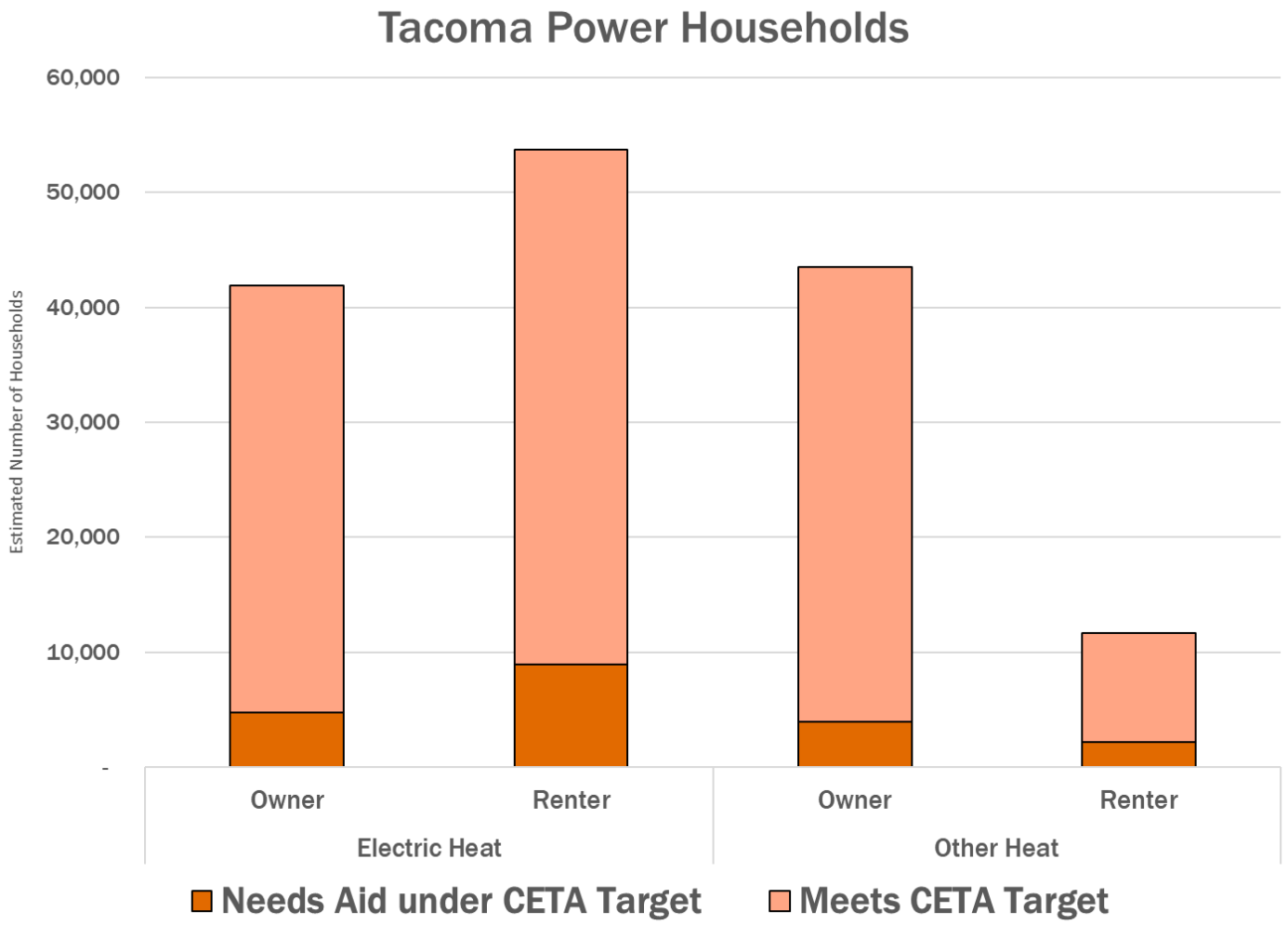
- **Discount Rate Program** for income-qualified seniors and disabled customers *(roughly 75% participation rate)*
- **Bill Credit Assistance Plan** (BCAP) *(roughly 5-10% participation rate)*
- Current Income-Constrained **Conservation** Programming *(minimal)*

Renters with Electric Heat Need the Most Help



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.

Inequities in Renting & Heating Type

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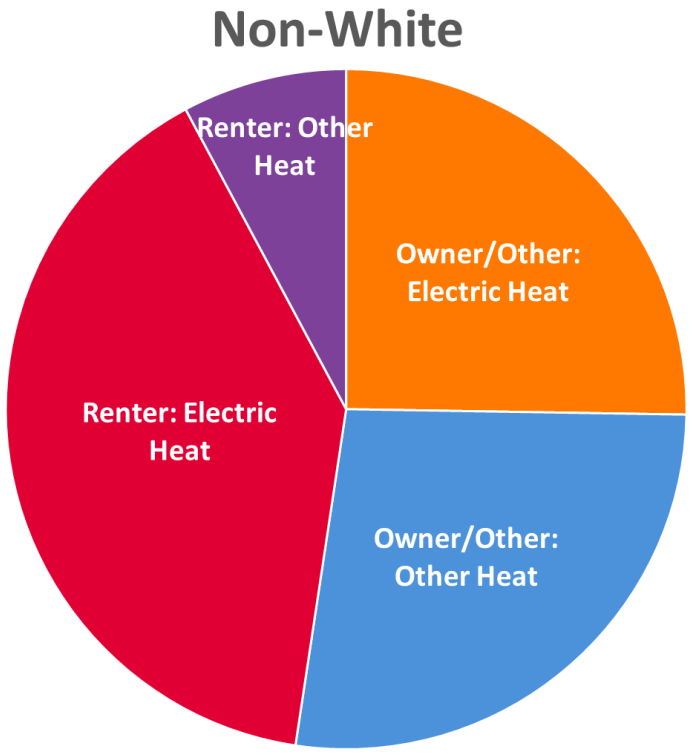
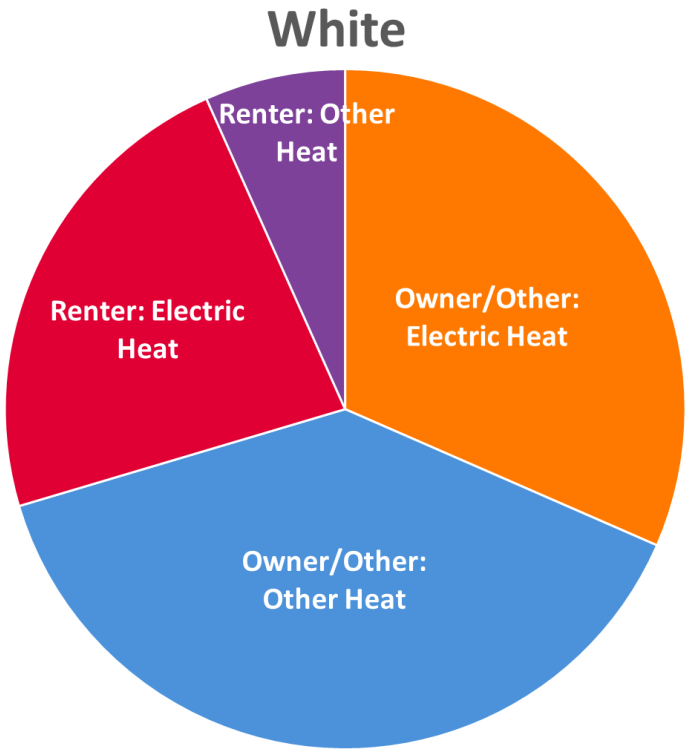
BIPOC people are more likely to have factors correlated with need for aid, such as being a renter or having electric heat.





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

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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

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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

Recap from March 23rd Study Session

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

Utility	Metric
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

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Utility	Metric
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

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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

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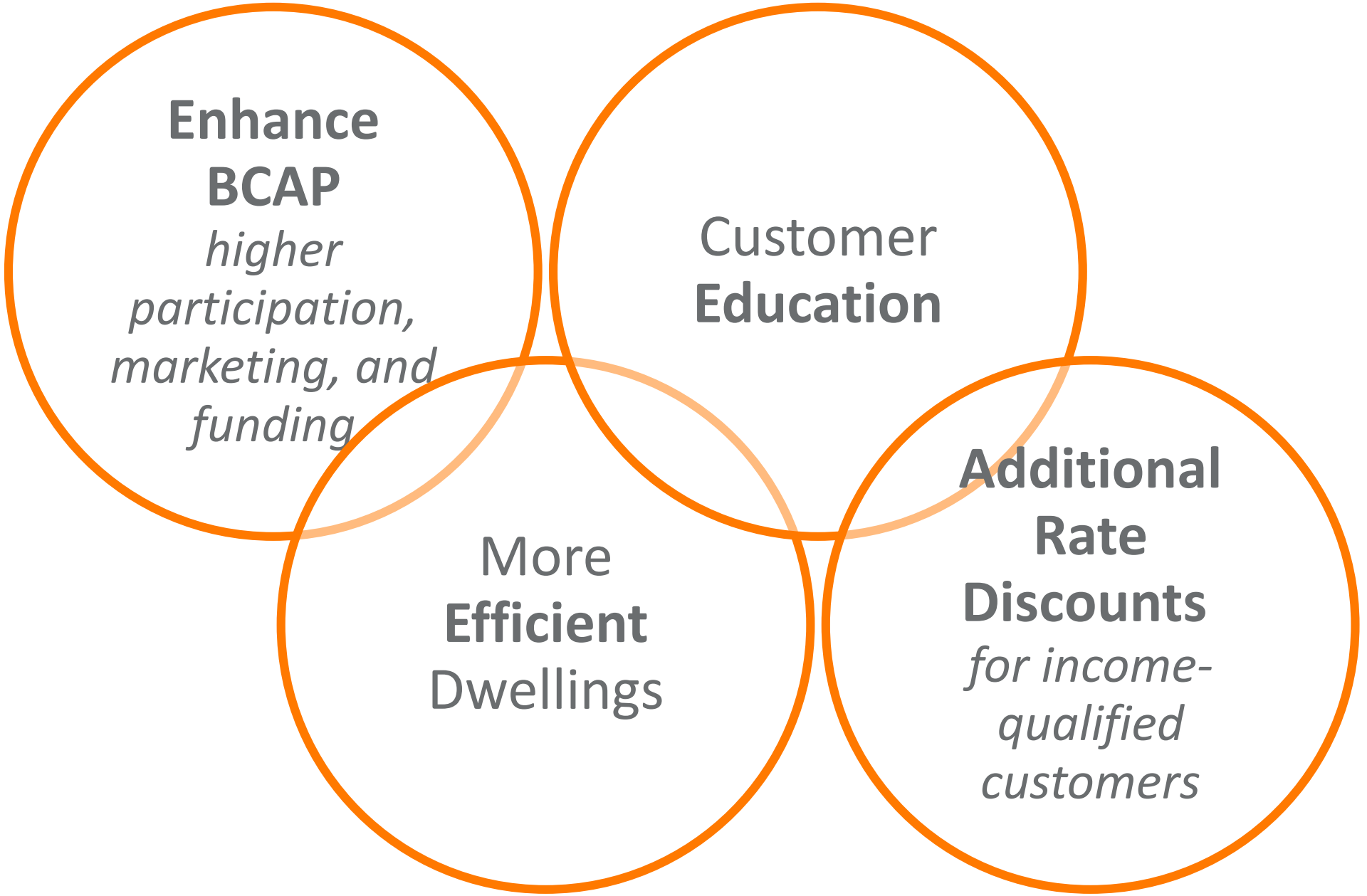
- ✓ Revamp approach to providing conservation programs to income-constrained customers
- Consider offering residential conservation measures outside of current conservation program
- Expand rate discount programs to reach more people with more assistance

A Word from Customer Solutions



Demographic Appendix

Pierce County is Growing: 2015-2019

Pierce County Net Migration: +8,122

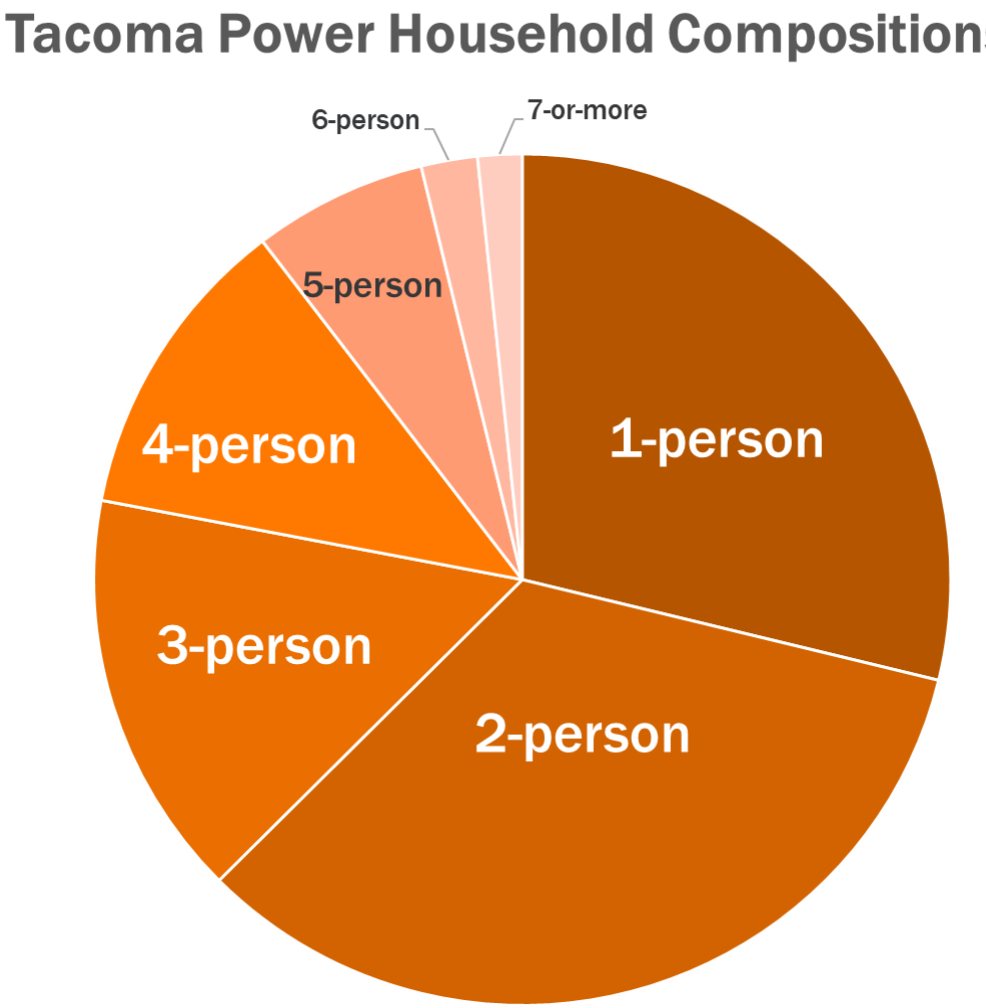
- Net from another state: 3,633 (45% of total net)
- Net from another Washington county: 4,489 (55% of total net)

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

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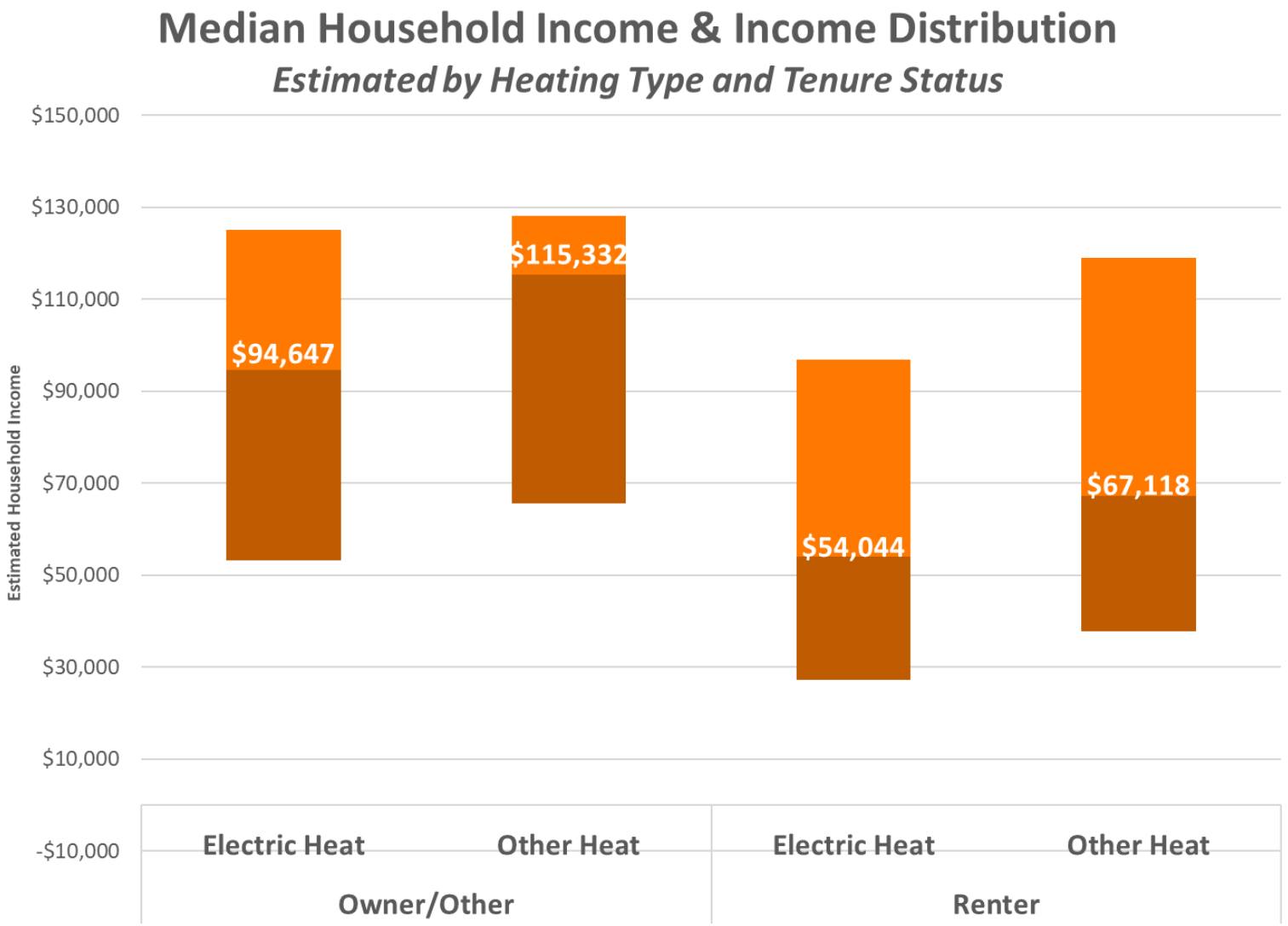

- **Renters** have lower incomes than owners.
- **Electric-heat** users have lower incomes than other-heat users, even for owners.

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

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

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?"