

# Water Shortage Response Plan Update

- June 27, 2018

# Overview

- **Purpose of the Shortage Response Plan**
- **Background – The planning context**
- **Principles - Underlying basis**
- **Changing Implementation Concepts**
- **4 stages of the plan**
- **Goal setting for demand reduction**
- **Appendices**
- **Summary and Recommendations**

# Purpose

- **Be well prepared to serve our customers in the event of a water shortage and/or system problems.**
- **Reinforce that the implementation of the WSRP is not a failure, but rather, is part of the plan to provide water to customers in a responsible way.**
- **Complements existing water conservation program.**
- **Provides guidelines and options to address extended low flows in the Green River or reduced availability of groundwater.**
- **Provides a menu of possible responses on both the supply and demand sides.**

# Background

- **Wrote the first plan in response to drought in 1992.**
- **Last update was done in 2006.**
- **Response to the 2015 drought showed that a more detailed plan would be useful.**
- **Integrated Resource Plan is currently being developed.**

# Principles

- **Plan should be flexible**
- **Solutions consider responsible supply and demand side alternatives**
- **Shortage inconvenience/disruption should be shared**
- **Conservation vs Curtailment**
- **Voluntary preferred (over Mandatory)**
- **Safeguard water quality**

# Additional Concepts

- **Modeled after Seattle's Plan for consistency**
- **"Preparation" Stage vs "Advisory" Stage**
- **Supplement a Public Advisory Committee in times of drought**
- **Incident Command System (ICS) system of organization**
- **Triggers are not rigid; flexibility is maintained. Tools under development (IRP - WYSDM, Water Supply Outlook Tool) will support decision-making**
- **In accordance with TMC 12.10.150 – After Public Utility Board approval of the WSRP, Superintendent and/or Director is authorized to implement the Plan**

# 4 Stages

## •Stage 1 – Preparation

- There is a potential for a water shortage
- No customer action required
- Internal preparations

## •Stage 2 – Voluntary

- Available sources are not expected to be sufficient
- Encourage customers to reduce water use
- Level of sacrifice depends on level of severity

## •Stage 3 - Mandatory

- Sources and previous demand reductions are not expected to be sufficient
- Prohibits nonessential water uses (exemptions apply)

## •Stage 4 – Emergency

- Catastrophic event or as continuation from a severe drought
- Maintaining an effective level of water service
- Public health and safety needs are paramount

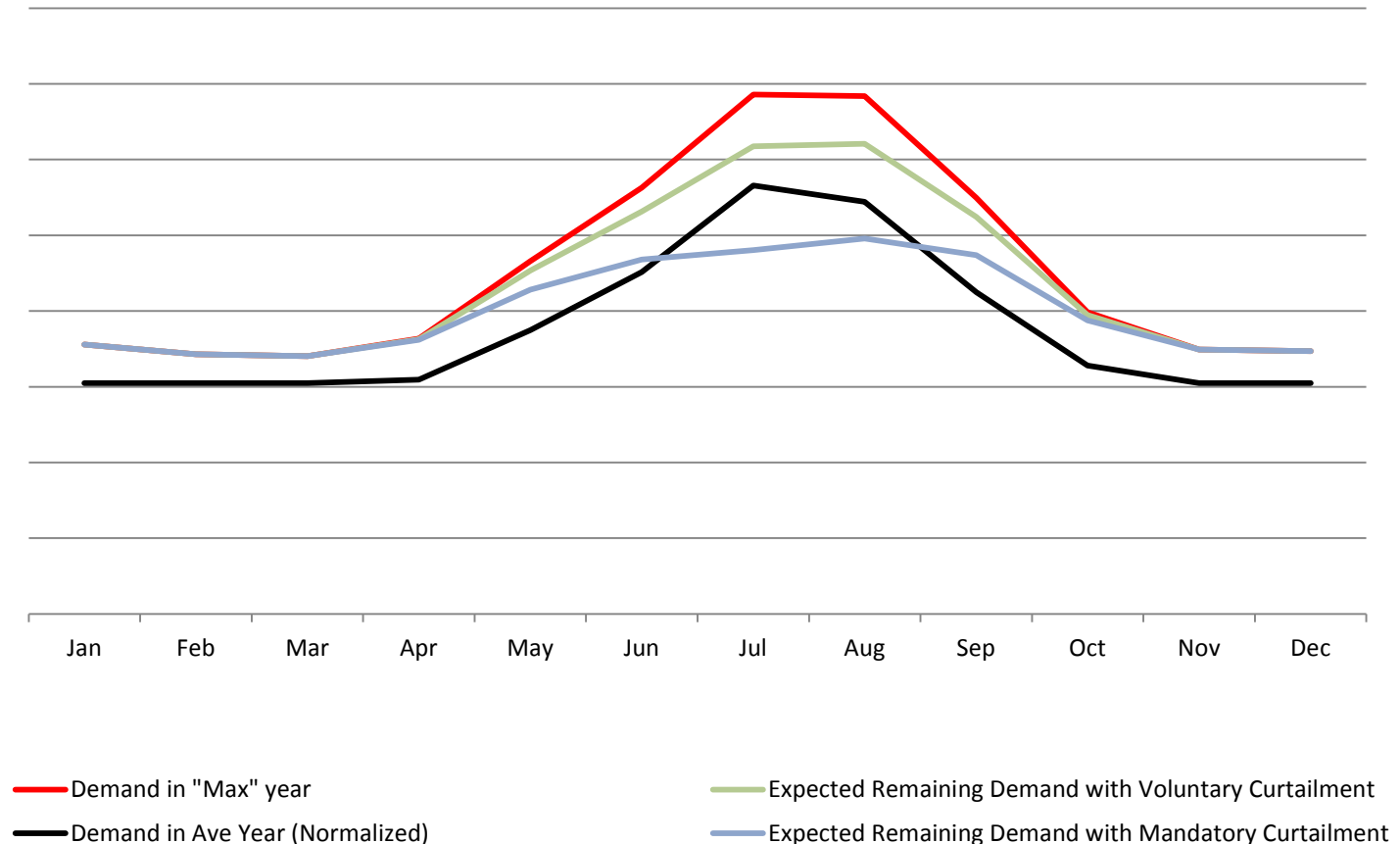
# Demand Reduction Goal Setting

- **Demand reduction goals for Stages 2 through 4 should be:**
  - Meaningful
  - Measurable
  - Understandable
  - Reasonable
  - Scalable
  - Consistent
- **The WSRP does not pre-set explicit goals for demand reduction. Goals will be set at the time of the event.**



# Potential Demand Reduction Savings

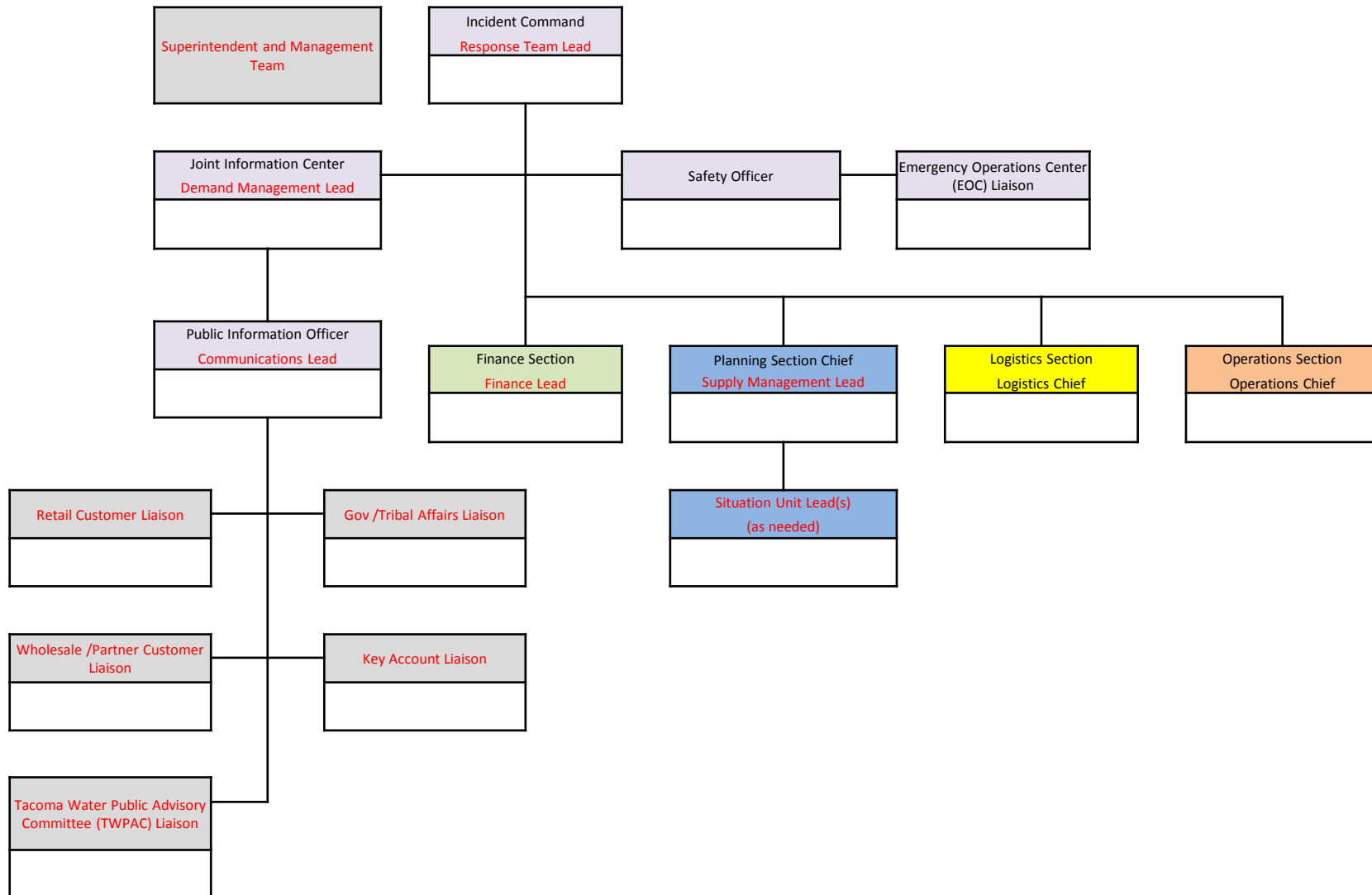
Based on combination of Consultant modeling experiences throughout the State, and Tacoma Water's 2015 drought experience.



# Appendices

- A. Water Shortage Response Team Membership (Internal), Roles and ICS Organization Chart**
- B. Tacoma Water Public Advisory Committee Membership**
- C. Previous WSRP Implementations**
- D. Communication and Outreach Plan**
- E. Potential Customer Demand Reduction Actions**
- F. Wholesale and Partner Customer Outreach Suggestions**
- G. Potential Exemptions for Water Use Restrictions**
- H. Potential Supply-side Augmentation Actions**

# Appendix A: ICS Organization Chart



# Appendix E: Demand Reduction Actions

Potential Customer Demand Reduction Actions <sup>1</sup>									
(see footnotes)									
	End Use <sup>2</sup>	Behavior or Hardware <sup>3</sup>	Implementation Stage <sup>4</sup>	Indoor or Outdoor <sup>5</sup>	Season <sup>6</sup>	Sector <sup>7</sup>	Action <sup>8</sup>	Potential to enforce <sup>9</sup>	Potential Exemption <sup>10</sup>
1	Clothes Washing	Behavior	N/A - Conservation	Indoor	Year Round	NR	Towels On Request: Provide new towels only on request.	N	
32	Irrigation - Frequency	Behavior	Voluntary	Outdoor	Summer	All	Eliminate One Watering Day: Cut one day from your typical weekly watering schedule (except for young plants as noted elsewhere). (Note: The similar "Water X Times A Week Maximum" series might be preferred wording, but this is included as an option.)	N	
52	Irrigation - Frequency	Behavior	Mandatory	Outdoor	Summer	All	Water Twice A Week Maximum: Plant watering is only allowed twice a week, in accordance with the published schedule by address.	Y	

# Appendix H: Supply Augmentation Actions

Project	Type	Project Description	Potential Yield	Estimated Cost	Notes
Tacoma Well Fields	Groundwater	Start seldom-used, inefficient wells	small	low	See Well Operation Summary
Eagle Lake	Surface Water	Pump Eagle Lake	medium	medium	See 2015 Drought file
Wholesale Purchases from Lakehaven Utility District	Intertie	TW purchases water through an intertie from Lakehaven Utility District	Medium (hydraulically limited)	Low	Used in 2015.

# Summary & Recommendations

- **The revised Water Shortage Response Plan builds on strong regional collaboration.**
- **The four stage process provides a step-wise approach to conditions as they naturally evolve.**
- **We recommend adoption of the revised Water Shortage Response Plan.**
  
- **Next steps, timing and approval**

# Tacoma Power Rate Recommendations

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**Christina Leinneweber, Senior Utilities Economist**

**June 27, 2018**



## Tacoma Power Rate Recommendations

# Agenda

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EV Charging Station Pilot Rate

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Appendix

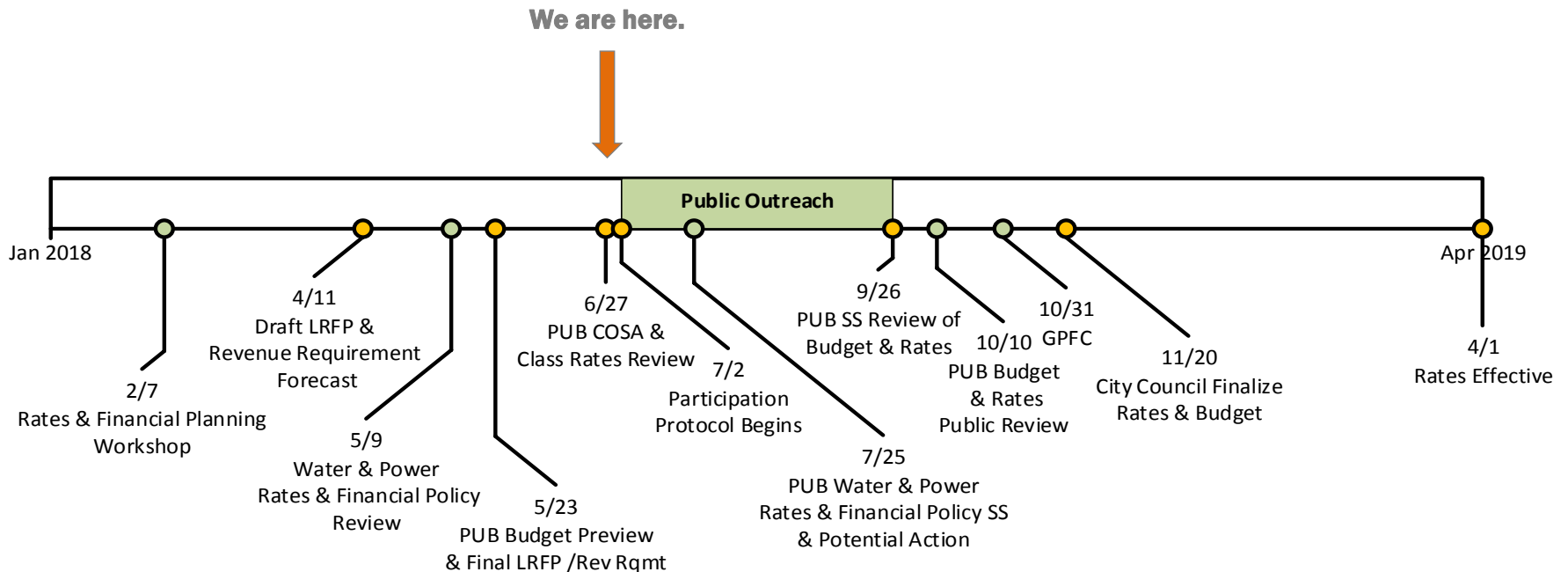


# Introduction

Power Rates  
Section 1

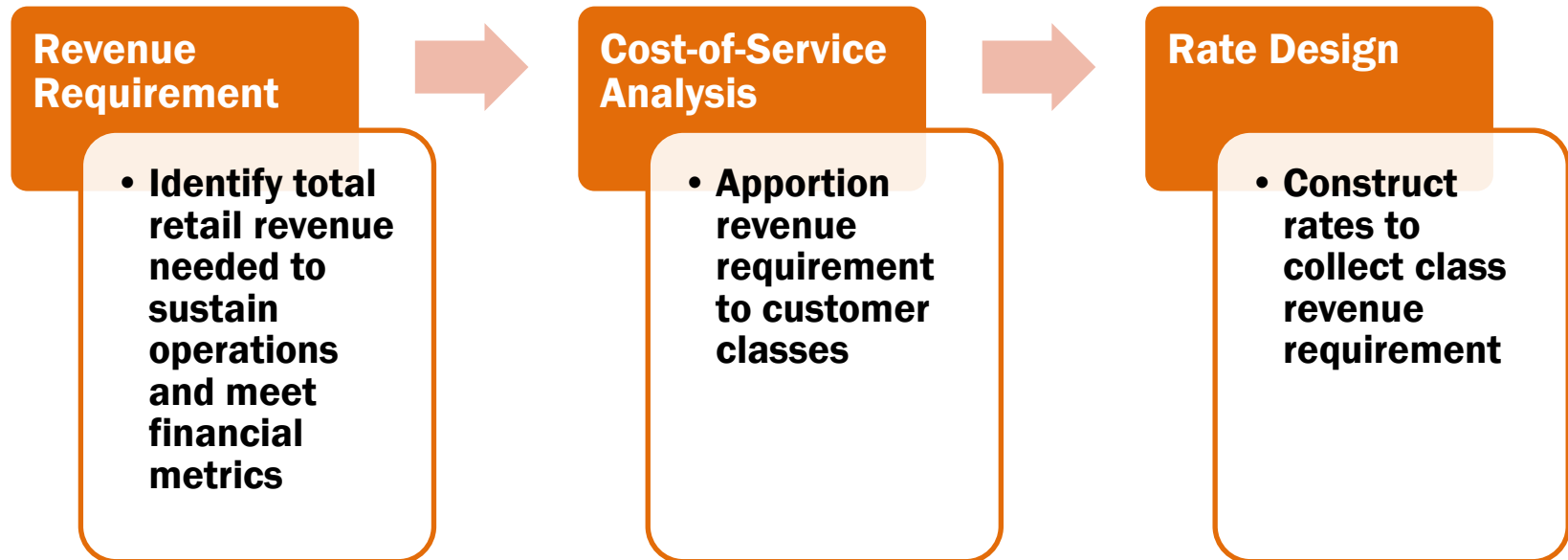
## Introduction

# Budget and Rate Timeline



## Introduction

# Rate Making Process

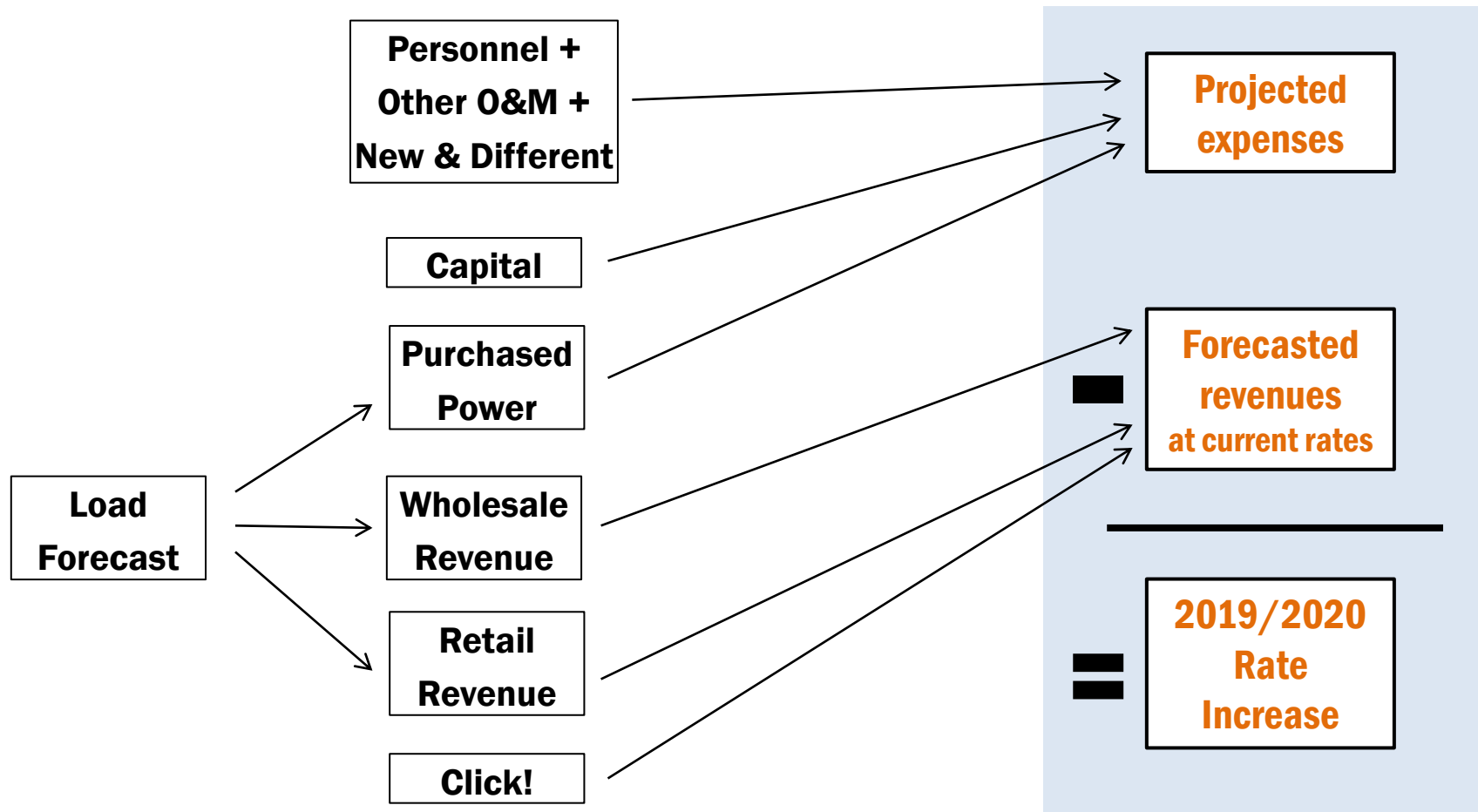


# Revenue Requirement Forecast

Power Rates  
Section 1.1

## Revenue Requirement Forecast

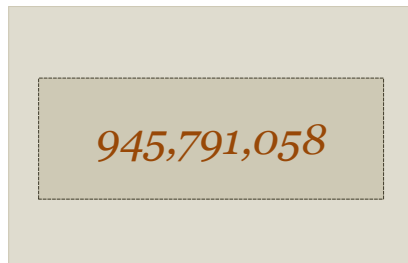
# Revenue Requirement Calculation



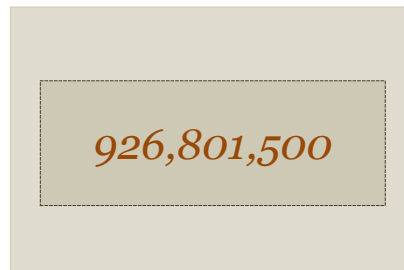
## Revenue Requirement Forecast

# 2019/20 Revenue Requirement Forecast

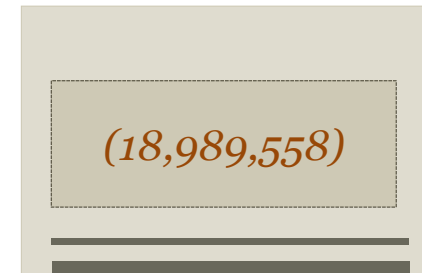
### Projected Expenses including cash needs\*



### Projected Revenues at current rates\*



### Revenue Increase Needed



*\*Total Expense and Total Revenue values are for the 2019/2020 Calendar Year ( January 2019 through December 2020).*

The Tacoma Power Revenue Requirement forecast is based on a set of assumptions about future revenues and spending. These assumptions influence our projection of the amount we will need to collect in the next biennium to cover all of the utility's expenses. Some key assumptions made to develop the revenue requirement include:

*Continued increased spending on capital infrastructure*

*Continued flat to declining retail load over time*

*Continued decrease of wholesale revenues over time*

*Continued increase of purchased power expenses into the future*

**Preliminary, subject to change. See Revenue Requirement Forecast Assumptions document from 6/22/2018.**

## Revenue Requirement Forecast

# Methodology

The Revenue Requirement Forecast represents a more realistic or less conservative estimate of actual expected spending. Said another way, the methodology removes some of the budget conservatism that results in the growth of cash reserves.

Should actual expenditures be greater than the revenue requirement forecast, Tacoma Power will use cash or request an additional rate increase.

The Revenue Requirement Forecast is preliminary and subject to change as the budget process continues.

## Revenue Requirement Forecast

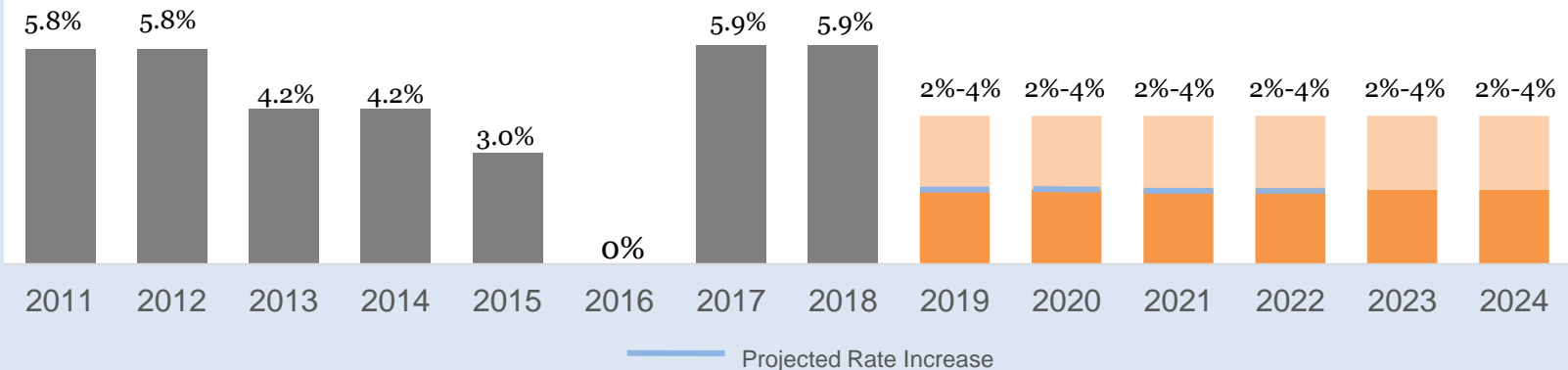
# Forecast of Projected Rate Increases

2019-2024

### Projected Rate Increases

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

**Additional shading** in future years represents uncertainty associated with revenues and expenses, mostly due to potential for adverse or critical water conditions.





# Cost of Service

Power Rates  
Section 1.2

## Cost of Service

# Cost-of-Service Analysis

## Tacoma Public Utilities is a Cost-of-Service Organization

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

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

## Cost of Service

# Important Notes

The 19/20 rate recommendations are produced from an updated cost of service model.

### Legacy Model versus Updated Model

- Updated Model created by consultant Black & Veatch
- Methodological differences
- Use of legacy allocators for load factors, minimum system
- May make further revisions before next rate process

### Next Step: Review by Ft. Lewis (Participation Protocol)

- Department of Defense has the right to retain a rates consultant to review COSA
- Military may make comment to Board on policy matters

**Transitioned to  
Updated COSA  
Model**

**DRAFT**

# Rate Design

Power Rates  
Section 1.3

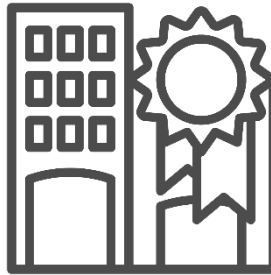
## Rate Design

# Overarching Principles of Rate Design



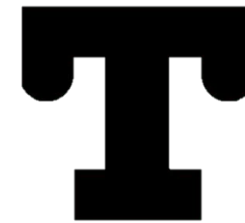
### Legal

- Fair
- Just
- Reasonable
- Non-Discriminatory



### Industry-Standard

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



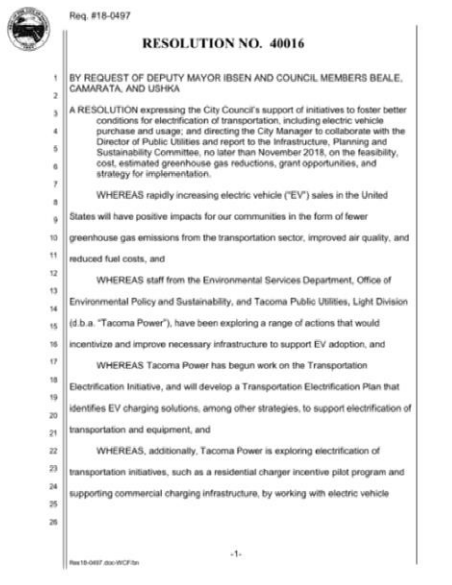
### TPU Principles

- Affordability
- Environment
- Public Involvement

## Rate Design

# Policy Direction from City Council

Throughout this presentation, rate recommendations are made in context of their impact on transportation electrification. We do this in light of the Tacoma City Council Resolution in Support of Electric Vehicle Initiatives.



## Resolution in Support of Electric Vehicle Initiatives

Rapidly increasing electric vehicle (EV) sales in the United States is a trend that will have positive impacts for our communities in the form of

- Fewer greenhouse gas emissions from the transportation sector
- Improved air quality
- Reduced fuel costs

## Objective

To foster better conditions for Electrification of Transportation, including electric vehicle purchase and usage.

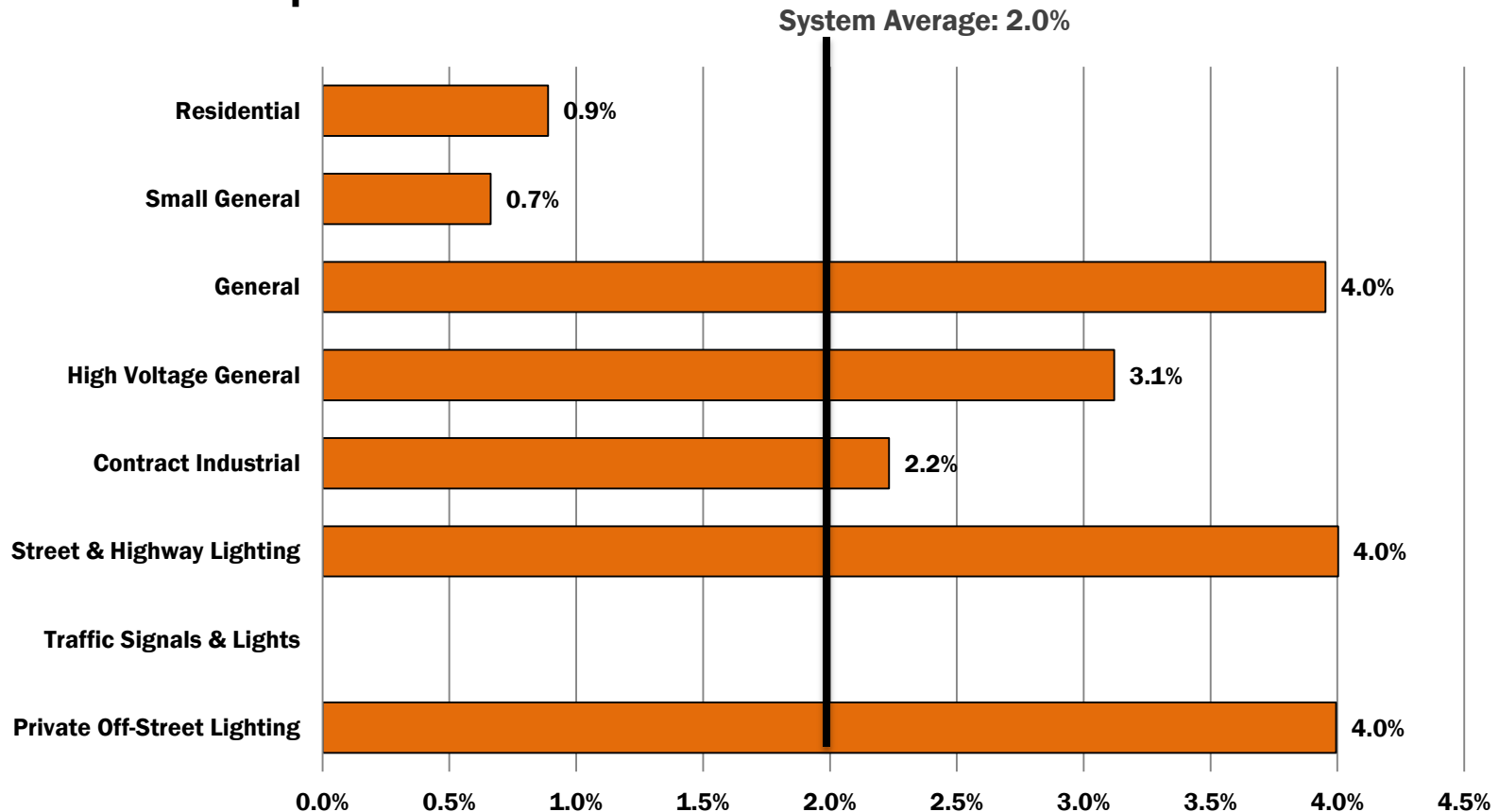
# COSA Results

Power Rates  
Section 2

## COSA Results

# Recommended Increase by Class

### Annual Step Increase

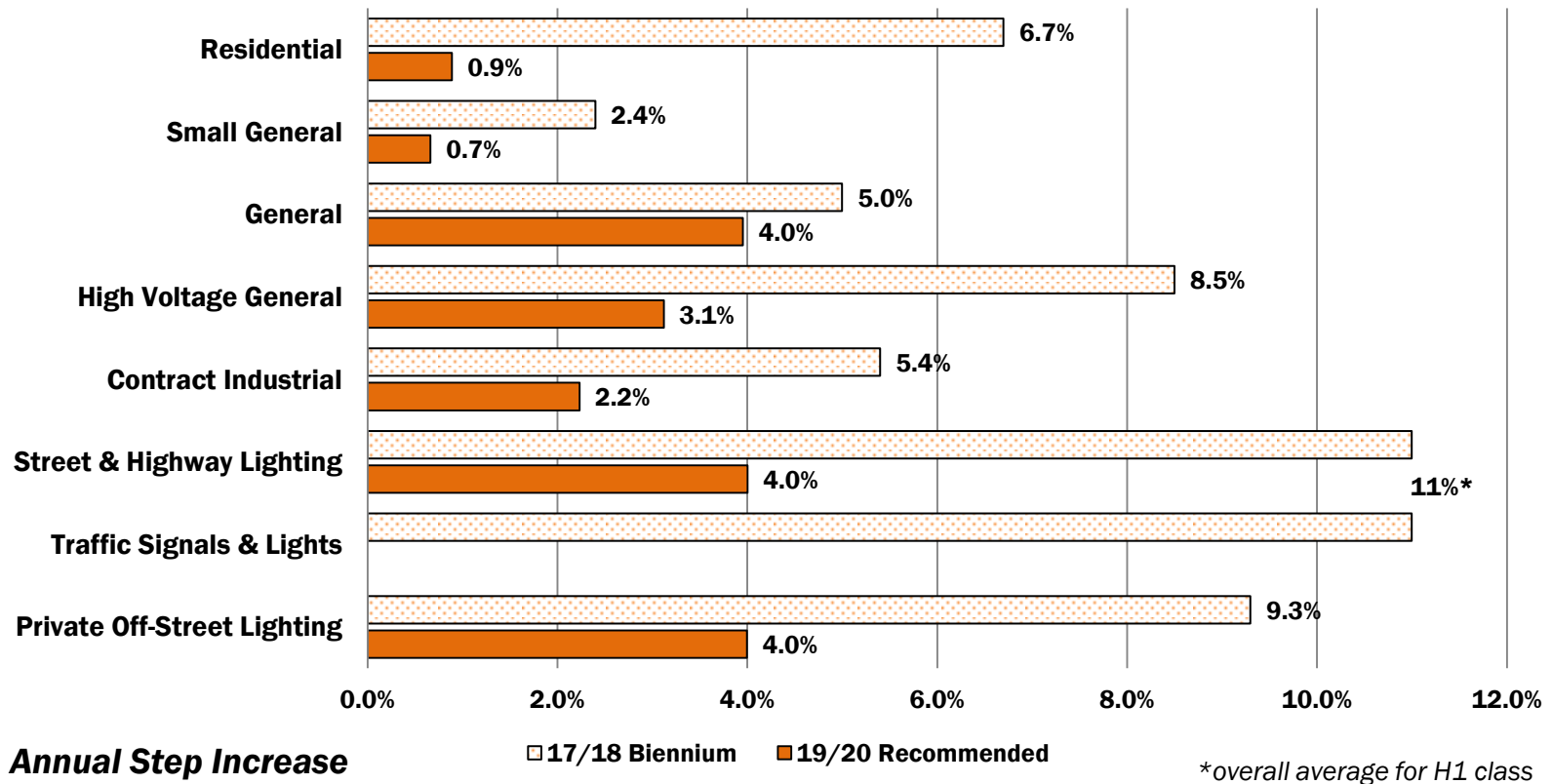




## COSA Results

# Recommended Increase by Class

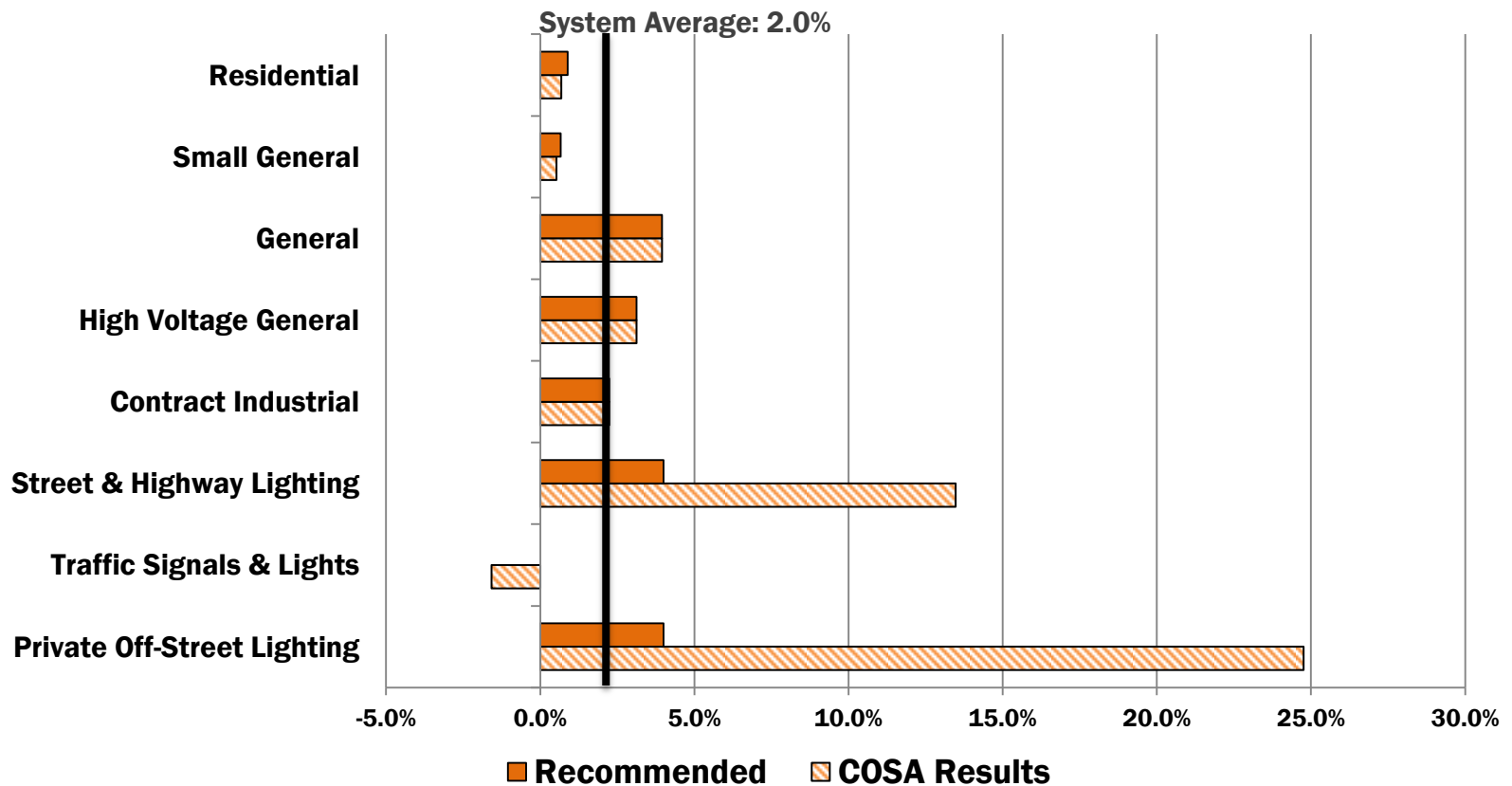
The 2019/2020 increase is substantially smaller 2017/2018.



## COSA Results

# COSA versus Recommended Increase

## Annual Step Increases



## COSA Results

# Gradualism Recommended for Lighting

### Drivers of Streetlight Class Rate Increase

- **Data inconsistencies** recently highlighted with street and traffic billing units
- *Small class* → **high percent** increases can be driven by **small dollar** changes
- *Small class* → **COSA model/methodology** changes have disproportionate impact

### Rate Increase Cap Choices

- **Level of Cap:** 2x system average rate increase

**Allocation to Other Classes:** shown by meter count—places most burden on residential and small general classes

Other cap limits and allocations possible if desired.

Lighting classes  
COSA rate increase is  
**1,578,949** of  
**21,980,031**  
rate period increase.

## COSA Results

# COSA Rate Change Detail

Description	Revenue at Existing Rates*	Final COSA Results*	COSA Rate Change		Redistribution for Gradualism Cap (Increase Cap at 2x System)	Recommended Rate Change	
			Amount	Annual Increase		Amount	Annual Increase
Residential	\$365,351,989	\$ 369,082,504	\$ 3,730,515	0.7%	\$ 1,152,813	\$ 4,883,328	0.9%
Small General	57,070,622	57,522,822	452,200	0.5%	115,536	567,736	0.7%
General	207,180,477	219,578,662	2,398,185	3.9%	18,674	12,416,859	4.0%
High Voltage General	45,870,568	48,038,774	2,168,206	3.1%	50	2,168,256	3.1%
Contract Industrial	48,523,303	50,175,279	1,651,976	2.2%	18	1,651,994	2.2%
Street & Highway (H1)	1,834,191	2,217,800	383,609	13.5%	(273,005)	110,604	4.0%
Traffic Signals (H1)	168,602	164,663	(3,940)	-1.6%	3,940	-	0.0%
Private Off-Street (H2)	3,005,788	4,205,067	1,199,279	24.8%	(1,018,026)	181,253	4.0%
<b>Total</b>	<b>\$ 729,005,540</b>	<b>\$750,985,571</b>	<b>\$ 21,980,031</b>	<b>2.0%</b>	<b>\$ -</b>	<b>\$ 21,980,031</b>	<b>2.0%</b>

**Preliminary, subject to change.**

# Rate Design: Customer Charge

Power Rates  
Section 3

## Policy: Residential Rate Design

# Rate Recommendation

Place 100% of the residential class 19/20 rate increase in customer charge.

	Rate Design				
	Current	COSA	Recommendation		
			2019	2020	Annual Increase
Customer Charge	\$ 16.50	\$ 23.30	\$ 17.35	\$ 18.20	+0.85 step
Energy Charge	0.045351	0.032890	0.045351	0.045351	None
Delivery Charge	0.034435	0.040860	0.034435	0.034435	None
1,000 kWh Bill	\$ 96.29	\$ 97.06	\$ 97.14	\$ 97.99	

## Policy: Small General Rate Design

# Rate Recommendation

Place 100% of the small general class 19/20 rate increase in customer charge.

	Rate Design				
	Current	COSA	Recommendation		
			2019	2020	Annual Increase
Customer Charge	\$ 22.50	\$ 35.21	\$ 23.45	\$ 24.40	+0.95 step
Energy Charge	0.044616	0.032862	0.044616	0.044616	None
Delivery Charge	0.034587	0.038942	0.034587	0.034587	None
2,000 kWh Bill	\$ 180.91	\$ 178.82	\$ 181.86	\$ 182.81	

## Policy: Residential & Small General Rate Design

# Rationale for Rate Recommendations



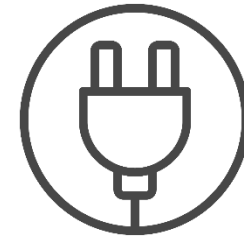
### Reduces Seasonal Bill Variability

Increasing the customer charge decreases seasonal bill variability. Large fluctuations in bills can be difficult for low-income customers and small businesses to manage.



### Enhances Financial Stability

Increasing the customer charge aligns fixed costs and fixed revenues.



### Benefits Electrification

Supports adoption of electric appliances and vehicles by keeping “fuel” costs low.



# Rate Design: Minimum System Analysis

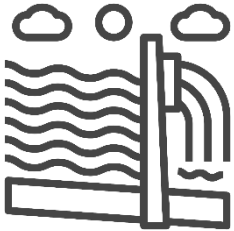
Power Rates  
Section 3.1

## Policy: Customer Charge Rate Design

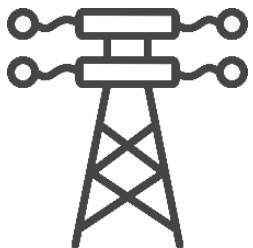
# Description of Minimum System Analysis

Even when only 1kWh is used, the utility makes sizable investments to connect a customer to the system.

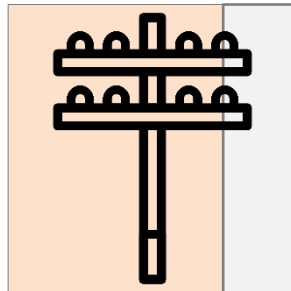
### Generation Plant



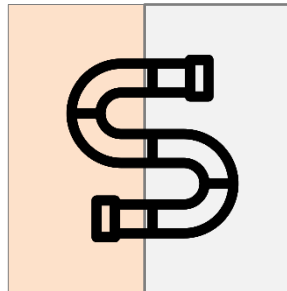
### Transmission Plant



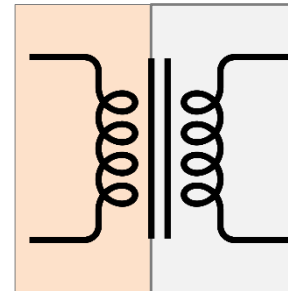
### Distribution Plant



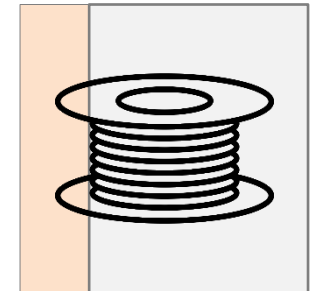
*Poles, Towers,  
and Fixtures*



*Conduit and  
Vaults*



*Line Transformers*



*Conductors and  
Devices*

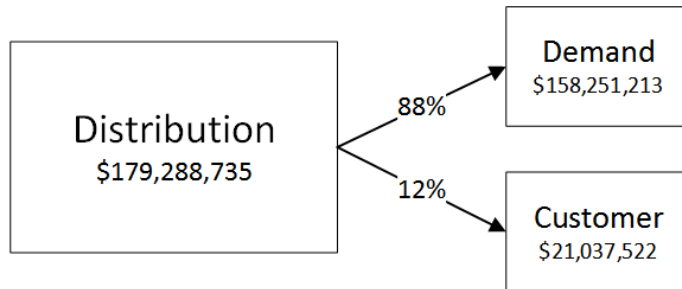
*The cost of the smallest theoretical distribution system required to connect a customer to the customer cost is included in the customer charge.*

## Policy: Customer Charge Rate Design

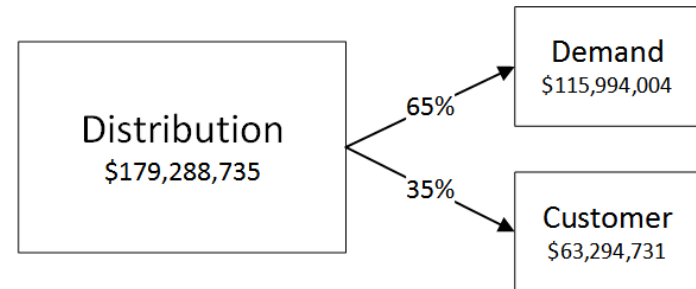
# Description of Minimum System Analysis

Even when only 1kWh is used, the utility makes sizable investments to connect a customer to the system.

### NO MINIMUM SYSTEM



### FULL COST-OF-SERVICE



## Policy: Customer Charge Rate Design

# Impact of Minimum System Analysis

Each rate class's estimated cost-of-service customer charge is derived using Minimum System Analysis.

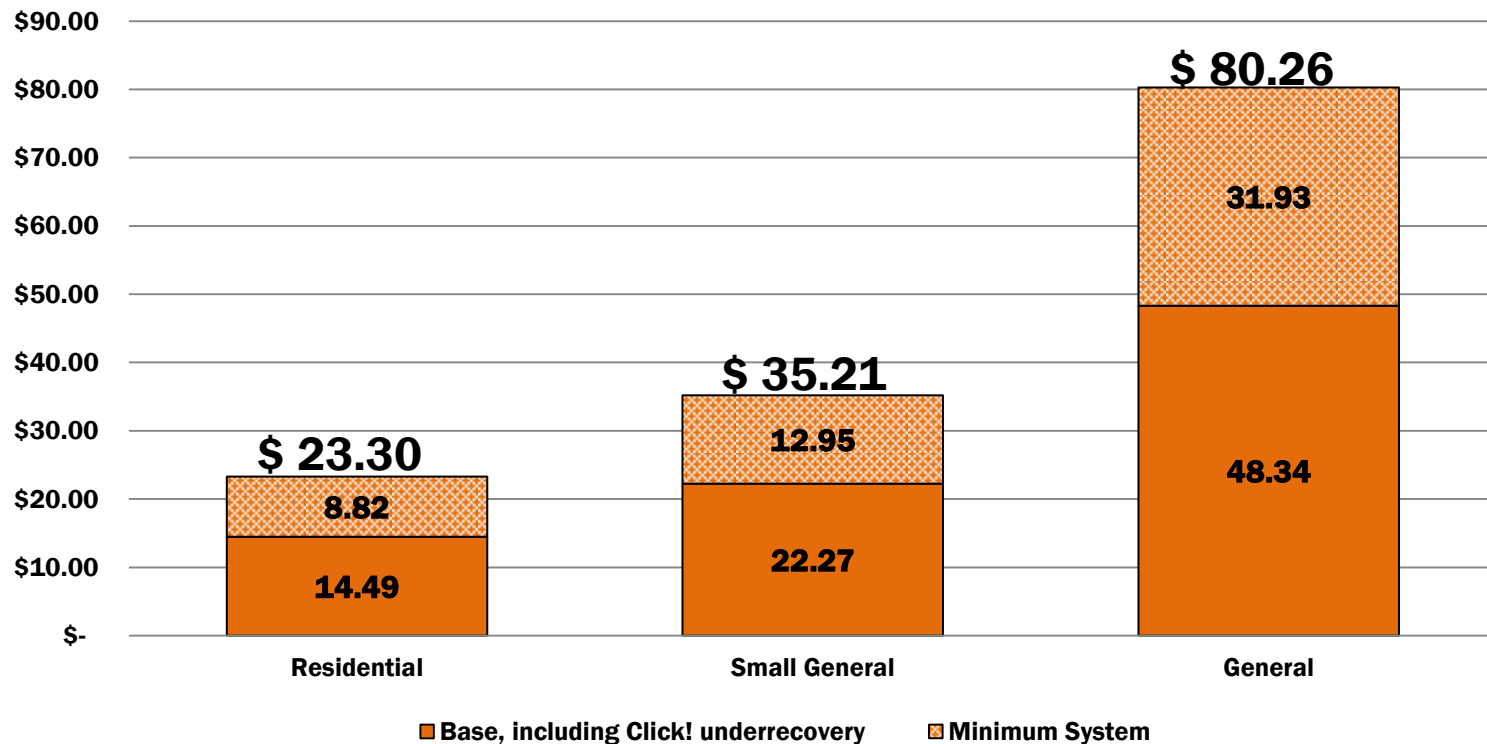
Use of the Minimum System Analysis ensures recovery of fixed costs to provide distribution services.

Customer Charge	Rate Design				Impact of Minimum System
	Current	Recommended 2020	COSA with Minimum System		
			Included	Excluded	
Residential	\$ 16.50	\$ 18.20	\$ 23.30	\$ 14.49	\$ 8.82
Small General	22.50	24.40	35.21	22.27	12.95
General	76.00	80.00	80.26	48.34	31.93

## Policy: Customer Charge Rate Design

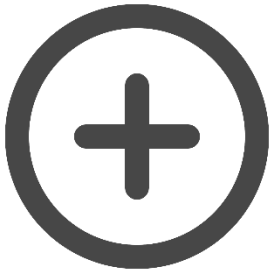
# Impact of Minimum System Analysis

### Cost-of-Service Customer Charge Components

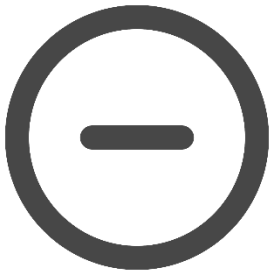


## Policy: Customer Charge Rate Design

# Rationale for Minimum System Analysis



- Simple to calculate and explain
- Usually results in a higher customer charge, which is advantageous for
  - customers who **cannot control** their electric usage
  - customers who **cannot install** distributed generation
  - customers who **electrify** appliances or transportation
- Ensures **full recovery** of fixed distribution cost
- **Covers cost** to utility of providing distribution connections to distributed-generation customers on the grid
- **Consistent** with 2017/2018 Cost-of-Service Analysis methodology
- **Consistent** with industry practice



- Requires **theoretical** analysis with various assumptions to create allocators
- Usually results in **higher** customer charge, which is disadvantageous for
  - low users
  - distributed-generation owners
- **Change** from pre-2015 Cost-of-Service Analysis methodology.

## Policy: Customer Charge Rate Design

# Rate Design and Transportation Electrification

Higher fixed charges lower the cost of electrification.

Charge	Current Rates	Full Increase in Fixed (Proposed Rates)	Full Increase in Variable	Reduce Customer Charge
Customer	\$ 16.50	\$ 18.20	\$ 16.50	\$ 14.50
Energy	0.045351	0.045351	0.036170	0.038268
Delivery	0.034435	0.034435	0.045351	0.045351
Average Residential Monthly Bill				
Non-EV	\$ 93.80	\$ 95.50	\$ 95.48	\$ 95.52
EV Household	123.72	125.42	126.05	126.87
Monthly Cost of EV	\$ 29.92	\$ 29.92	\$ 30.57	\$ 31.36
Increase in Cost of EV Adoption (relative to current rates)		0.00%	\$ 0.65 2.20%	\$ 1.44 4.80%

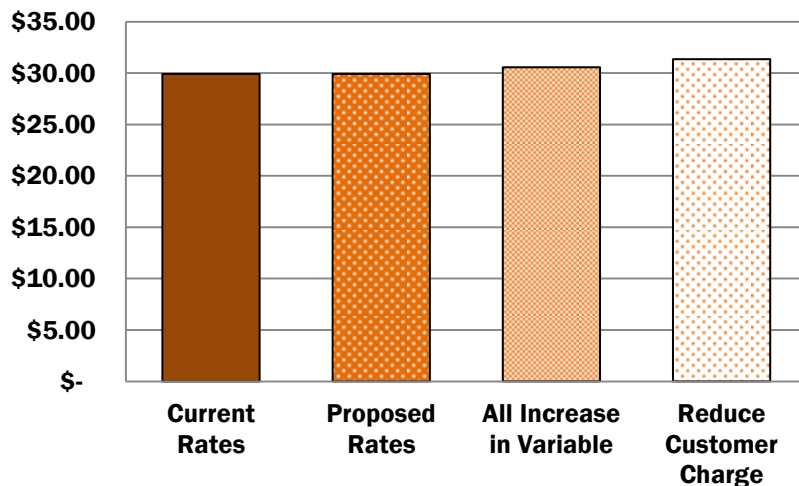
Assumes EV drives 15,000 miles per year at .30 kWh per mile, costing 375 kWh per month; 100% of vehicle charging occurs at residence.

## Policy: Customer Charge Rate Design

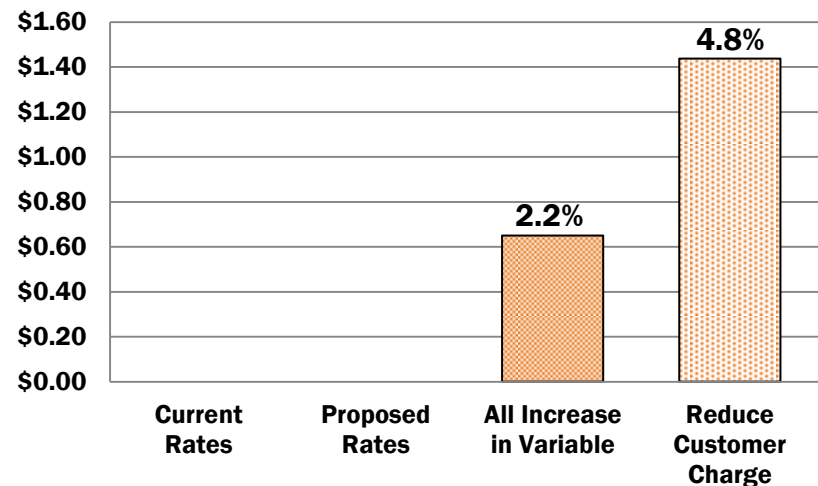
# Rate Design and Transportation Electrification

Higher fixed charges lower the cost of electrification.

### Cost of an Electric Vehicle



### Increase in Cost of an EV

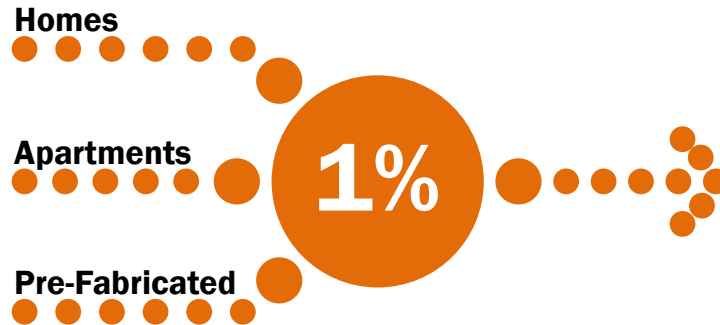


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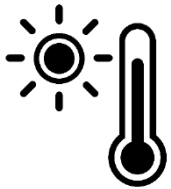


## Policy: Customer Charge Rate Design

# Rate Design and Low-Income Customers



**Only 1% of the variation in Tacoma Power's customers' electric use can be explained by estimated income.**



Most utilities are summer-peaking, and air conditioning provides a significant portion of load. Low-income customers often forego air conditioning, so their bills may be systematically lower. Few homes are heated electrically.

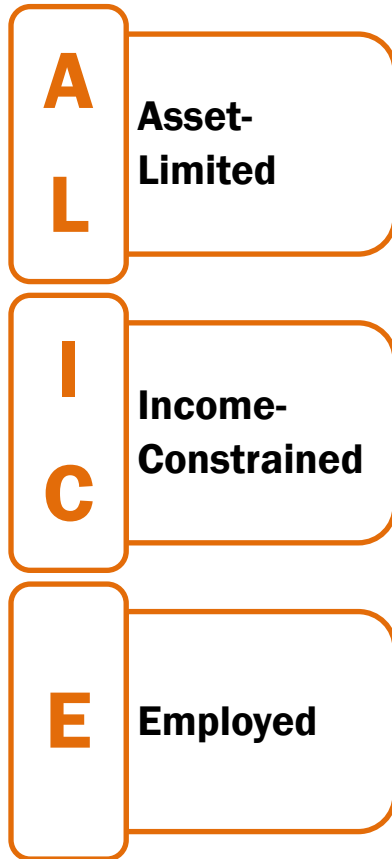
In Tacoma Power's service territory, air conditioning is relatively rare, and many homes, particularly older homes, are heated electrically. It is **much harder for low-income residents to forego heating** than air conditioning.



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.

Tacoma Power's internal studies have **failed to find systematic correlations between estimated income level and electric usage.**

# Rate Design and Low-Income Customers



Poverty: 11%

ALICE: 31%

---

**42%**

## Vulnerable Households in Pierce County

With rising rents and other cost-of-living expense in the county, regional organizations are increasingly focused on the struggles of working families. Increasing numbers of employed individuals are unable to afford basic necessities. Such families are particularly vulnerable to unexpected bills and are often unable to control electric usage by upgrading their homes to be more efficient. Collecting the rate increase through the customer charge **limits the bill impact** to these customers to 85¢ per month.

# Click! Under- Recovery

Power Rates  
Section 4

## Click! Under-Recovery Allocation

# Click! Under-Recovery Allocation

CLICK! FINANCIALS	2019	2020	2019/2019
Click! Revenue	24,720,180	24,318,280	49,038,460
Click! Commercial O&M	25,117,923	25,930,857	51,048,780
Click! and HFC Capital	1,237,378	1,237,378	2,474,756
Click! Capital A&G Credit	-55,864	-44,909	-100,773
Taxes	3,307,972	3,249,244	6,557,216
<b>Net Cash Flow</b>	<b>-4,887,229</b>	<b>-6,054,290</b>	<b>-10,941,519</b>

### Allocation by Meter Count

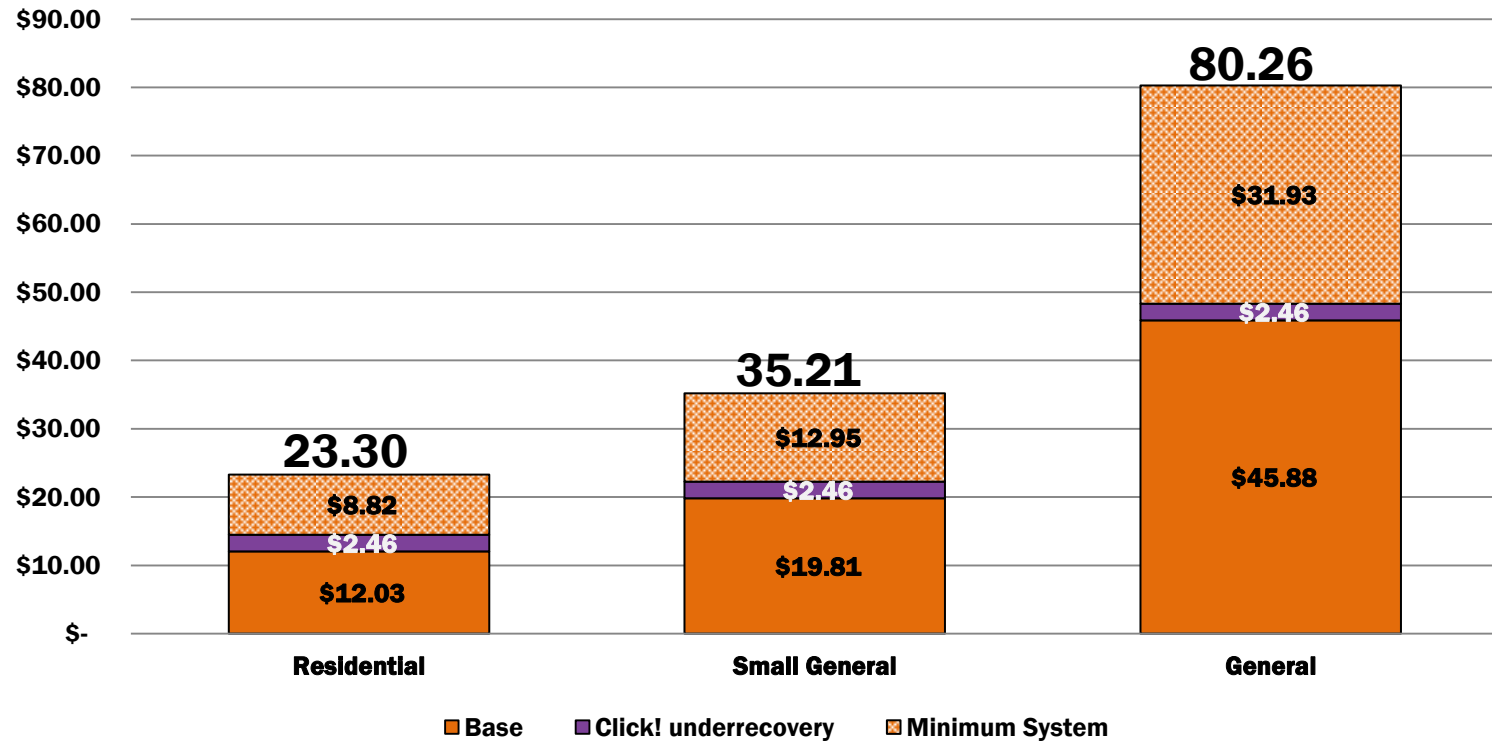
- Shows Click! under-recovery in customer charge, as in the last rate case
- Decreases from \$3.42 per customer per month in the 17/18 budget projection to \$2.46 per customer per month in this projection

**\$ 2.46**  
per customer per  
month  
**impact of Click!**  
**underrecovery**

Click! Under-Recovery Allocation

# Effect on Customer Charge

## Cost-of-Service Customer Charge Components



# G Class Rate Design

Power Rates  
Section 7



## Policy: Schedule G Rate Design

# Rate Recommendation

	Rate Design				
	Current	COSA	Recommendation		
			2019	2020	
Customer Charge	\$ 76.00	\$ 80.26	\$ 78.00	\$ 80.00	+\$2 each step
Demand Charge	8.35	14.05	8.43	8.51	+1% each step
Energy Charge	0.044813	0.032547	0.047316	0.049959	+6% each step



## Policy: Schedule G Rate Design

# Rationale

### **COSA Results in Substantial Demand Charge Increase**

- Schedule G serves a large, diverse group of customers
- “Average” COSA results not representative of many class customers
- COSA results will disproportionately impact low-demand Schedule G customers
- Goal remains to split customer class, requires data not yet available

### **Recommendation**

- Small increase in customer charge to full cost of service
- Small increase in demand charge to avoid disproportionate impact to smaller customers
- Most of rate increase in energy charge



## Policy: Schedule G Rate Design

# Illustration of Impacts

### Sample Bills under Alternate Rate Designs

	Current	COSA	Recommendation	
			2019	2020
Small Customer Bill	\$ 667	\$ 646 -3.1%	\$ 696 +4.3%	\$ 725 +4.3%
Medium Customer Bill	3,284	3,480 +6.0%	3,413 +3.9%	3,549 +4.0%
Large Customer Bill	102,081	128,854 +26%	105,134 +3.0%	108,327 +3.0%

*Small Customer billed at 10,000 kWh and 17 kW; Medium Customer billed at 46,605 kWh and 134 kW; Large Customer billed at 1,000,000 kWh and 6,849 kW*

# EV Charging Station Pilot Rate

Power Rates  
Section 8

## EV Charging Station Pilot Rate

# Context

Proposed pilot rate is one of the Tacoma Power initiatives aligned with the Tacoma City Council Resolution in Support of Electric Vehicle Initiatives.



Req. #18-0497

### RESOLUTION NO. 40016

1 BY REQUEST OF DEPUTY MAYOR IBSEN AND COUNCIL MEMBERS BEALE,  
2 CAMARATA, AND USHKA

3 A RESOLUTION expressing the City Council's support of initiatives to foster better  
4 conditions for electrification of transportation, including electric vehicle  
5 purchase and usage; and directing the City Manager to collaborate with the  
6 Director of Public Utilities and report to the Infrastructure, Planning and  
7 Sustainability Committee, no later than November 2018, on the feasibility,  
8 cost, estimated greenhouse gas reductions, grant opportunities, and  
9 strategy for implementation.

10 WHEREAS rapidly increasing electric vehicle ("EV") sales in the United  
11 States will have positive impacts for our communities in the form of fewer  
12 greenhouse gas emissions from the transportation sector, improved air quality, and  
13 reduced fuel costs, and

14 WHEREAS staff from the Environmental Services Department, Office of  
15 Environmental Policy and Sustainability, and Tacoma Public Utilities, Light Division  
16 (d.b.a. "Tacoma Power"), have been exploring a range of actions that would  
17 incentivize and improve necessary infrastructure to support EV adoption, and

18 WHEREAS Tacoma Power has begun work on the Transportation  
19 Electrification Initiative, and will develop a Transportation Electrification Plan that  
20 identifies EV charging solutions, among other strategies, to support electrification of  
21 transportation and equipment, and

22 WHEREAS, additionally, Tacoma Power is exploring electrification of  
23 transportation initiatives, such as a residential charger incentive pilot program and  
24 supporting commercial charging infrastructure, by working with electric vehicle  
25

Req 18-0497 doc 01/27/18

-1-

## Resolution in Support of Electric Vehicle Initiatives

Rapidly increasing electric vehicle (EV) sales in the United States is a trend that will have positive impacts for our communities in the form of

- Fewer greenhouse gas emissions from the transportation sector
- Improved air quality
- Reduced fuel costs

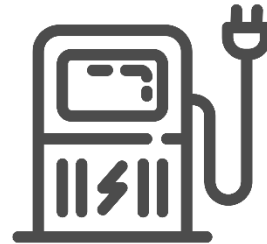
## EV Charging Station Pilot Rate

# Objective



### Objective

To foster better conditions for Electrification of Transportation, including electric vehicle purchase and usage.



### Direct Current Fast Chargers

Public Direct Current Fast Chargers (DCFC) are anticipated to play an important role in accelerating electric vehicle adoption.

DCFC have high electricity demand relative to total energy consumption.

## EV Charging Station Pilot Rate

# Current State

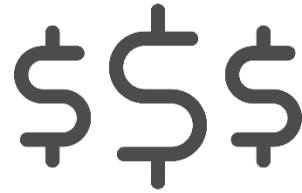


### DCFC in Tacoma Power Territory

Public Direct Current Fast Chargers are currently classified as General Service, or Schedule G, customers.

Schedule G is a three part rate

- Customer Charge
- Demand Charge
- Energy Charge



### Challenge

Because DCFC electricity demands are high, demand charges create a significant barrier in DCFC network development.

## EV Charging Station Pilot Rate

# Pilot Concept



### Potential Solution

Derive a two-part EV Public Charging Station Pilot rate from General Service Schedule G

- Customer Charge
- Energy Charge
- 



### What is a Pilot?

A pilot is...

- A test or trial of a concept
- Limited in scope and duration
- Intended to provide new information about the concept so that it may be evaluated for possible adoption in a new permanent service schedule

## EV Charging Station Pilot Rate

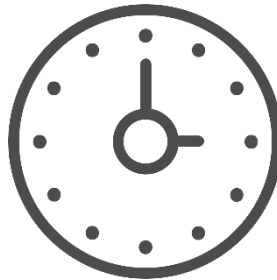
# Rate Design

Rate option details will be presented to PUB in the August 8<sup>th</sup> Study Session.



### Availability & Scope

- Available to customers offering charging services for the use of the general public
- Service must be separately metered with an interval meter
- Customer must be under 1MW
- Pilot limited to 25 metered customers



### Duration

- 7 years
- Staff will evaluate utilization and potential adjustments after 2 years with gradualism in mind



### Benefits of EV Charging Station Pilot Rate

- Improves options for Tacoma Power customers
- Benefits system planning through acquired data
- Informs future rate offerings

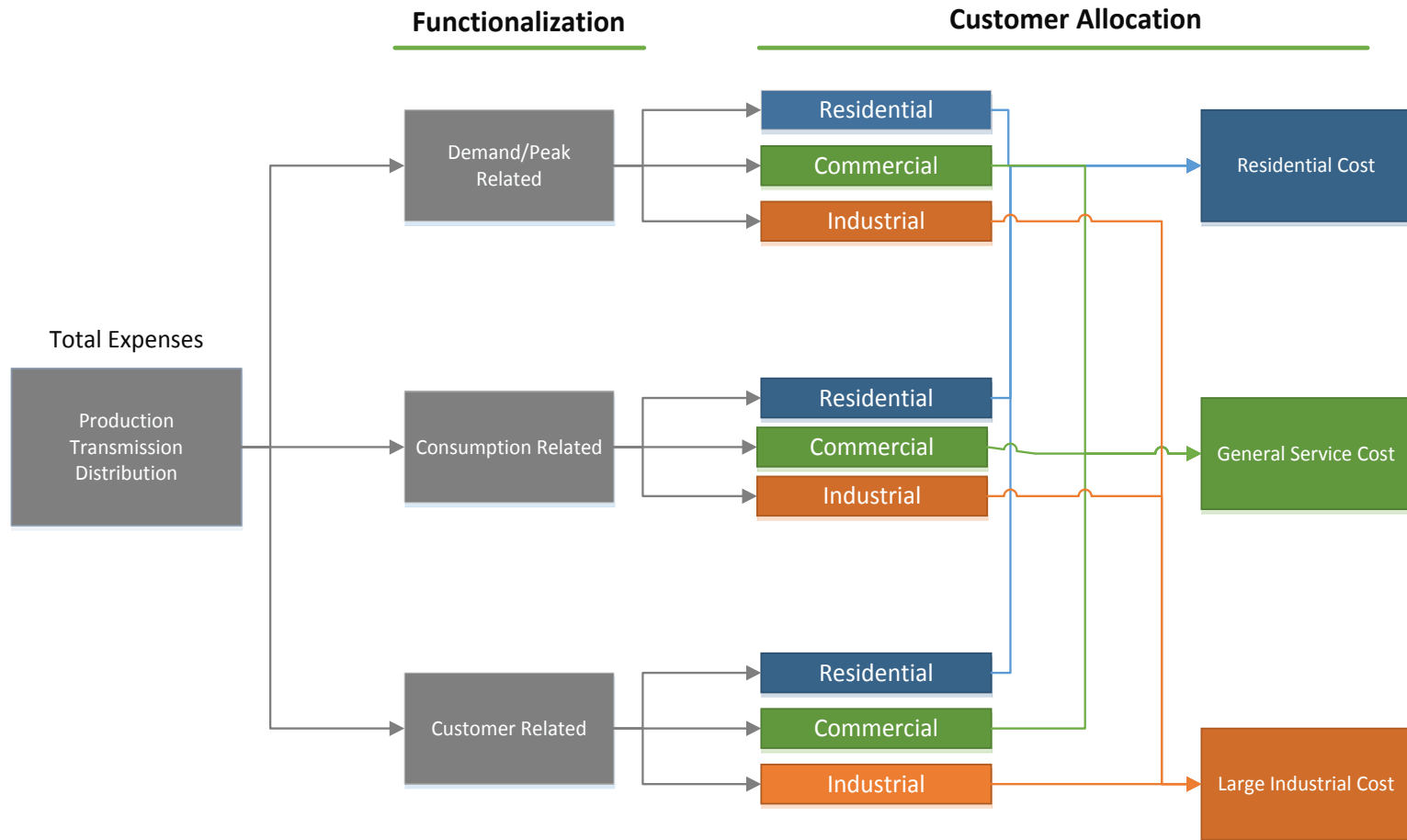
# Appendix

**Power Rates  
Section 9**



## Appendix

# Cost-of-Service Study



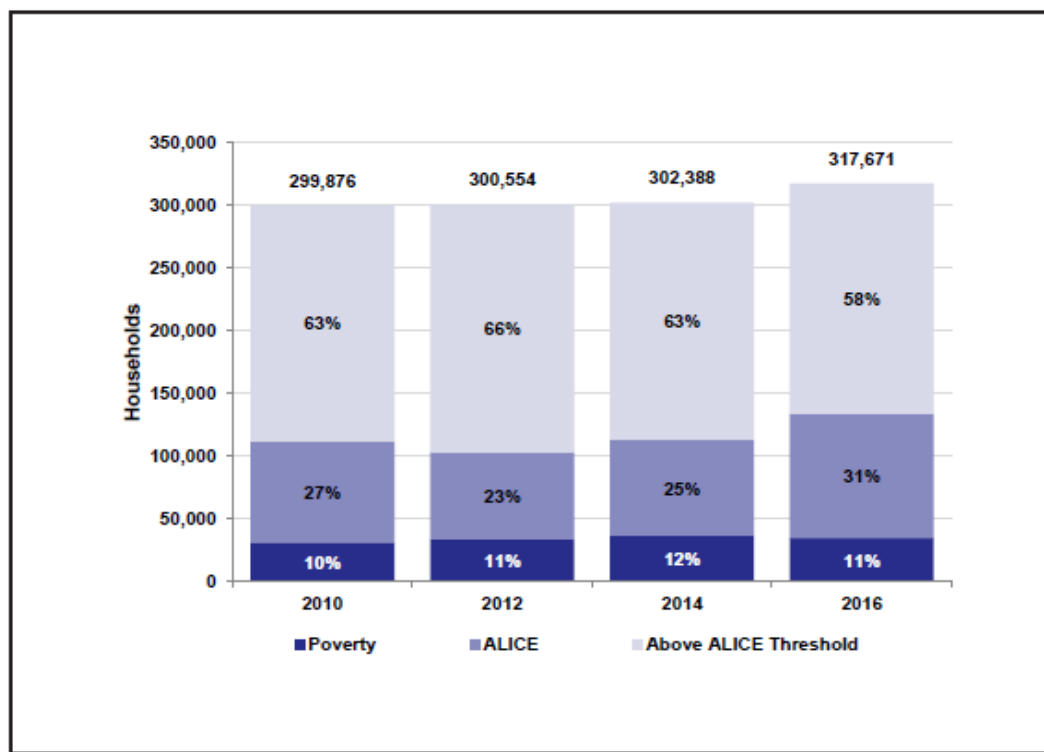
## Appendix

# United Way ALICE Report

## How has the number of ALICE households changed over time?

**ALICE** is an acronym for Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the county (the ALICE Threshold). Combined, the number of ALICE and poverty-level households equals the total population struggling to afford basic needs. The number of households below the ALICE Threshold changes over time; households move in and out of poverty and ALICE as their circumstances improve or worsen. The recovery, starting in 2010, has been uneven across the state. Conditions have improved for some families, but with rising costs, many still find themselves struggling.

Households by Income, 2010 to 2016



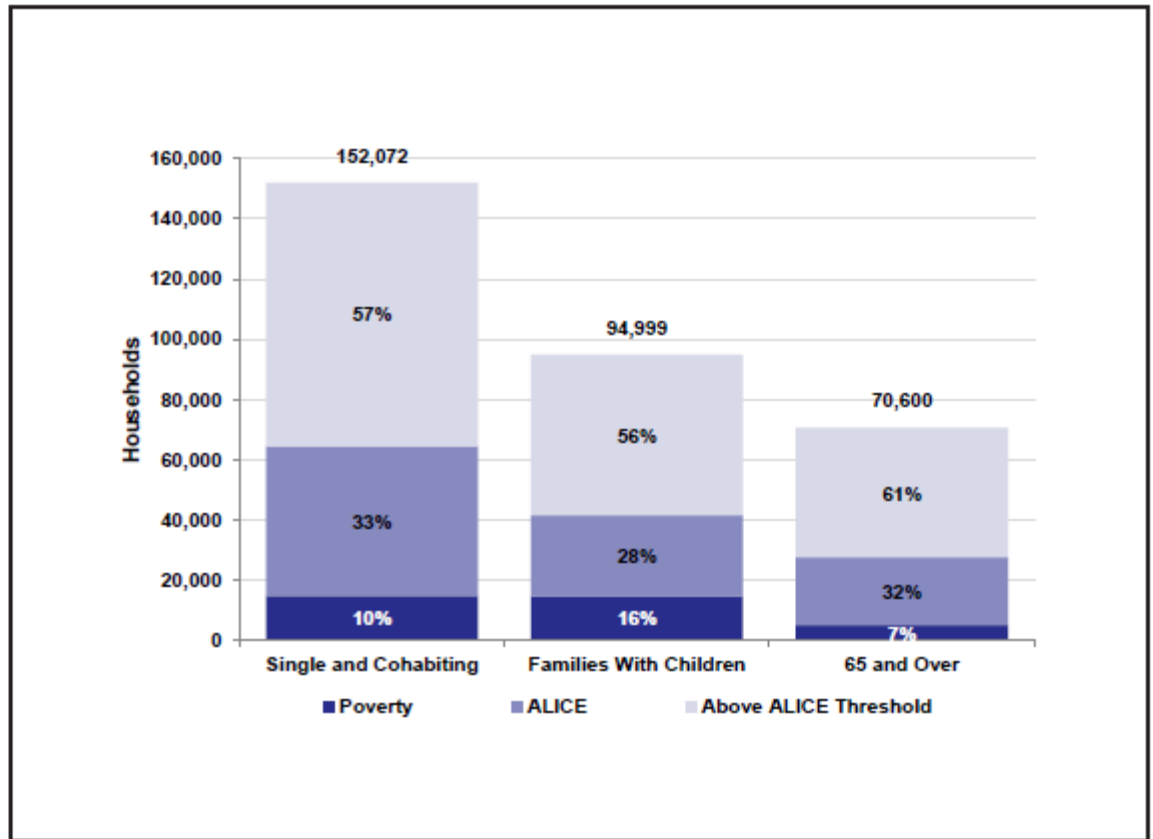
## Appendix

# United Way ALICE Report

### What types of households are struggling?

The way Americans live is changing. There are more different family and living combinations than ever before, including more people living alone or with roommates and more adult children living with their parents. Families with children are changing: There are more blended families with remarried parents, more non-married cohabiting parents, and more same-sex parents. The number of senior households is also increasing. Yet all types of households continue to struggle: There are ALICE and poverty-level households across all of these living arrangements.

Household Types by Income, 2016



## Appendix

# United Way ALICE Report

## Why do so many households struggle?

### The cost of living continues to increase...

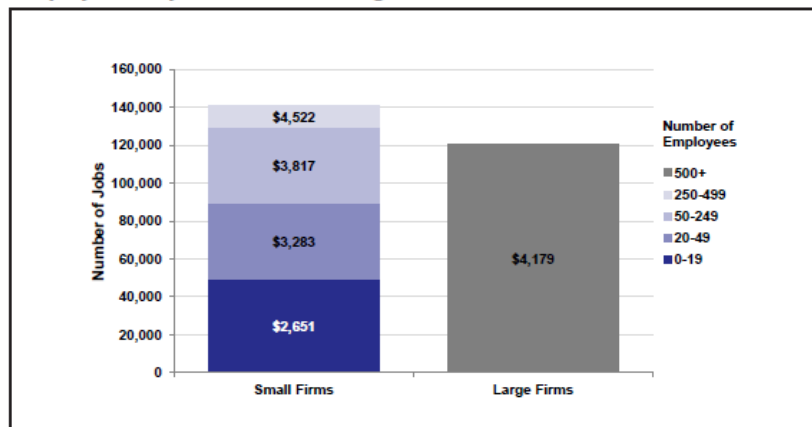
The Household Survival Budget reflects the bare minimum that a household needs to live and work today. It does not include savings for emergencies or future goals like college. In 2016, costs were well above the Federal Poverty Level of \$11,880 for a single adult and \$24,300 for a family of four. Family costs increased by 28 percent statewide from 2010 to 2016, compared to 9 percent inflation nationally.

Household Survival Budget, Pierce County		
	SINGLE ADULT	2 ADULTS, 1 INFANT, 1 PRESCHOOLER
Monthly Costs		
Housing	\$742	\$1,126
Child Care	\$-	\$1,408
Food	\$177	\$586
Transportation	\$409	\$818
Health Care	\$226	\$845
Technology	\$55	\$75
Miscellaneous	\$189	\$548
Taxes	\$286	\$621
Monthly Total	\$2,084	\$6,027
ANNUAL TOTAL	\$25,008	\$72,324
Hourly Wage	\$12.50	\$36.16

### ...and wages lag behind

Employment and wages vary by location and firm size, but across the state more than half of newly-hired workers earn less than the cost of the family Household Survival Budget. Small firms (<50 employees) often drive economic growth but their wages tend to be lower, especially in rural areas where they are the largest employers. Large firms (500+ employees) offer higher wages but are concentrated in cities, where the cost of living is also higher. Medium-size firms (50-500 employees) pay more but employ the fewest workers.

### Employment by Firm Size and Wage for New Hires, 2016



Sources: 2016 Point-in-Time Data: American Community Survey; ALICE Demographics: American Community Survey; the ALICE Threshold. Budget: U.S. Department of Housing and Urban Development; U.S. Department of Agriculture; Bureau of Labor Statistics; Internal Revenue Service; Child Care Aware of Washington, 2016.

## Appendix

# United Way ALICE Report

### 2016 Point-in-Time Data

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**Population:** 861,312 • **Number of Households:** 317,671

**Median Household Income:** \$64,434 (state average: \$67,106)

**Unemployment Rate:** 6.2% (state average: 5.4%)

**ALICE Households:** 31% (state average: 28%) • **Households in Poverty:** 11% (state average: 11%)

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## Appendix

# Average Rates: Current & Proposed

Average per-kWh Rate	Current Rates	Proposed Rates*
Residential	9.68 ¢	9.81 ¢
Small General	9.36 ¢	9.45 ¢
General	7.05 ¢	7.47 ¢
High Voltage General	5.14 ¢	5.38 ¢
Contract Industrial	4.70 ¢	4.86 ¢
Street & Highway Lighting (H1)	5.24 ¢	5.56 ¢
Traffic Signals & Lights (H1)	9.77 ¢	9.77 ¢
Private Off-Street Lighting (H2)	21.13 ¢	22.41 ¢
<b>Total</b>	<b>7.84 ¢</b>	<b>8.07 ¢</b>

*\*average for 19/20 rate period*