Click! Network

2018 Cable TV Rate Increase Recommendation

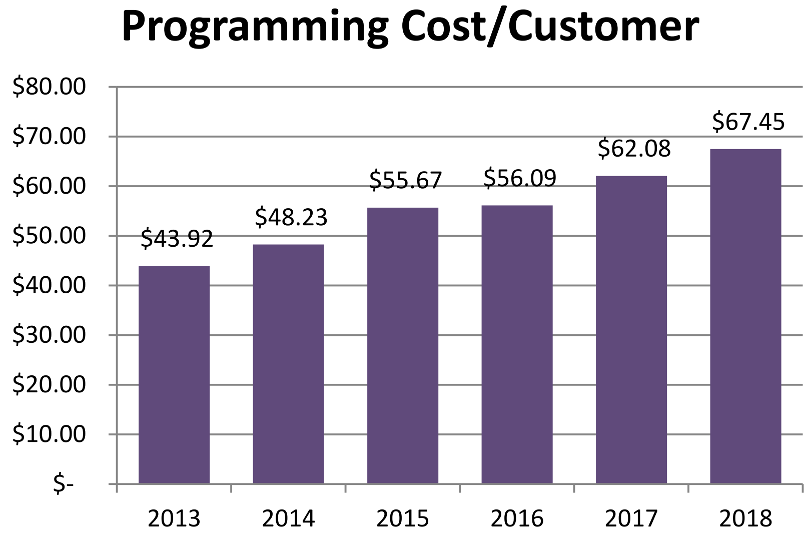
Pam Burgess
Click! Business Operations Mgr.

Background

- This presentation focuses only on the Cable TV Service
- The 2017/2018 Budget includes rate increases each year
- Cable TV Rates were last increased by 12.9% in March 2017
- The next increase of 11.3% is slated to occur in January 2018
- Cost of programming increasing in 2018
- Comcast rate increase expected to occur in October 2017

Increasing cost of programming

- The overall cost of programming is expected to increase by 9% in 2018
- Click! will pay $5.37 more per month per customer in 2018



CLICK! NETWORK
TACOMA PUBLIC UTILITIES

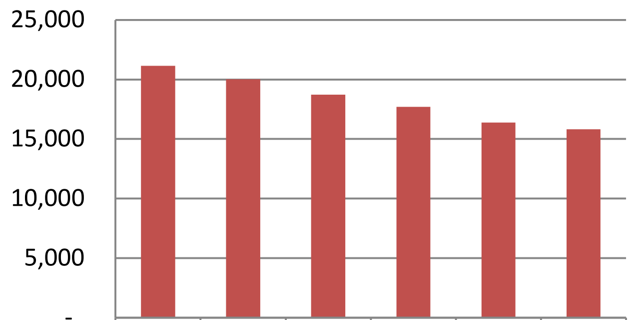
2017/2018 budget assumptions

- Click! would be providing retail services
- Growth in revenue from retail Internet and Voice services
- Sale of product bundles
- Growth in Cable TV customers
- Higher programming costs from growth in Cable TV customer

Budget adjustments to reflect status quo

- Cable TV customer trend: Click! and nationwide – faster for Click!

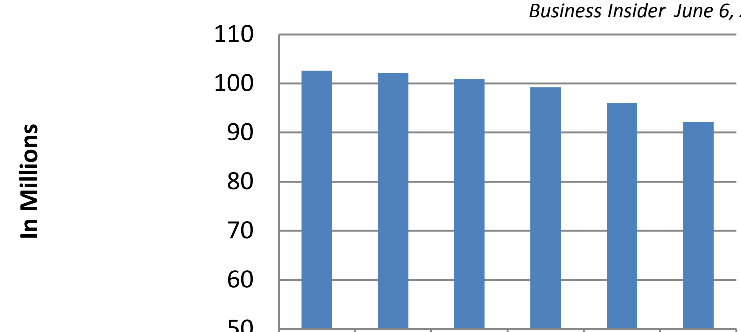
Cable TV Subscriber Trend



	2013	2014	2015	2016	2017	2018
Subs. Trend & Budget	21,132	20,001	18,734	17,696	16,391	15,814
% Change		-5.7%	-6.8%	-5.9%	-8.0%	-3.6%

National Video Subscribers

Business Insider June 6, 2017



	2013	2014	2015	2016	2017	2018
National Video Subs	102.6	102.1	100.9	99.2	96.0	92.1
% Change		.5%	-1.2%	-1.7%	-3.3%	-4.2%

- **Programming costs reduced by $805,000 in 2017 and $2.8 million in 2018 to reflect Cable TV customer trend**
- **Assumes $1.5 Million in labor savings in 2018**

Cable TV costs exceeding Cable TV revenue in 2017/2018

	2017	2018
Revenue from Rate Increases	$1,017,702	$809,806
Re-forecast Total Cable TV Revenue	$17,623,895	$17,326,938
Re-forecast Total Cable TV O&M Cost	$21,526,089	$20,106,852
Capital Cost – Cable TV	$2,610,500	$2,610,500
Total Under Recovery (O&M + Capex)	$6.5 Million	$5.3 Million

Rates needed to close the gap in 2018

- **SCENARIO 1: 25% average increase generating $20,447,242 in 2018 fully covers cable TV O&M costs**

- **SCENARIO 2: 46% average increase generating $22,992,000 in 2018 fully covers cable TV O&M and capital costs**

	SCENARIO 1			SCENARIO 2		
Service	Rate	Customer Increase	Avg. % Increase	Rate	Customer Increase	Avg. % Increase
Broadcast	$ 27.00	$ 7.31		$ 28.00	$ 8.31	
Standard	$ 73.00	$ 13.01	25%	$ 88.00	$ 28.01	46%
Plus						
Set-top analog	$ 2.00	$ 0.90	81%			
Set-top standard def	$ 7.00	$ 1.50	27%			
Set-top high def	$ 10.00	$ 2.25	29%			
Set-top DVR	$ 19.00	$ 4.75	33%			

- **Most customers would pay $13.01 - $28.01 more per month**
- **These rates would likely drive more rapid decline in customers**

Cable TV rate increase history

Year	Average Adjustment
Apr-12	9.0%
Jan-13	9.0%
Aug-13	7.8%
Jul-14	10%
Jul-15	0%
Jul-16	0%
Mar-17	12.9%
Jan-18	11.3%*

*Proposed 2018 average Cable TV increase

2018 rate proposal

- Implement the planned 11.3% Cable TV rate increase
- Effective January 1, 2018
- Increase in rates balanced to address cost recovery and market
- Also increasing certain equipment and premium rates, and one-time charges
- Keeping rates under the market's A La Carte rates
- Market A La Carte rates have been the benchmark for rate setting comparisons, as the *effective* market rate information is not available

2017-18 proposed Cable TV rates

Tacoma	Mar-17
Broadcast	$ 19.69
Standard	$ 59.99

Jan-18	$ Change	% Change
$ 20.99	$ 1.30	6.6%
$ 66.99	$ *7.00	11.7%

Avg. % Change
11.3%

* $ Change to Standard *includes* $ Change to Broadcast

- Rates outside Tacoma slightly higher to recover GET

Service	Rate	New Rate	Change
Click! ON Digital	$81.99	$89.99	*$8.00
The Filipino Channel	$11.99	$12.99	$1.00
Commercial Music	$26.95	$29.95	$3.00
Commercial Root Sports	$10.00	$12.00	$2.00

* $ Change to Click! ON Digital *includes* $ Change to Standard

CLICK! NETWORK
TACOMA PUBLIC UTILITIES

2017-18 proposed Cable TV rates - Other

Equipment	Rate	New Rate	Change
Digital Adapter (DTA)	$1.10	$1.15	$0.05
Standard Def Receiver	$5.50	$5.75	$0.25
High Def Receiver	$7.75	$8.00	$0.25
HD DVR	$14.25	$14.75	$0.50

One-Time Charge	Rate	New Rate	Change
Installation (unwired)	$50.00	$55.00	$5.00
Reconnection (wired)	$40.00	$45.00	$5.00
Install Add’l Outlet	$20.00	$25.00	$5.00
Hourly Service Charge	$40.00	$45.00	$5.00

Market rate comparison

- Historically used Comcast's A La Carte rates for Tacoma
- Market *effective* rate not available
- Comcast promos shown are as quoted on phone 10/11/17

			COMCAST		CLICK/ISP
Cable + Internet	140+ channels		$69.99 - $89.99	*1 yr. promo*	
	55 Mbps Internet		$112.00 - $121.99	*regular*	$156.94
Cable TV only	140+ channels		$49.99 - $59.99	*1 yr. promo*	
			$73.99	*regular*	$66.99
Add-On Fees*	Broadcast TV		$7.00		$0
	Sports		$5.00		$0
* Included in regular pricing shown above					

- Comcast website regular price of TV package ranges from $52.49 to $75.49; TV only price shown is per Tacoma rate card including fees
- Comcast telephone representatives quoted TV package prices of $71.99 to $72.95, plus add-on fees.

CLICK! NETWORK
TACOMA PUBLIC UTILITIES

Recommendation

- Approve the proposed Cable TV rates effective January 1, 2018 as fair, just and reasonable, and necessary to meet Click!'s 2017-18 Biennial Budget

Next steps

TPU Board Meeting – October 25, 2017
GPFC Meeting – November 1, 2017
City Council 1st Reading – November 7, 2017
City Council 2nd Reading – November 14, 2017

30-day notification – November 30 via mail

2018 increase effective date – January 1, 2018

Tacoma Power

Q4 2017 Energy Risk Management Update

Ray Johnson
Manager, Rates & Energy Risk

Agenda

1 Wholesale Net Revenues

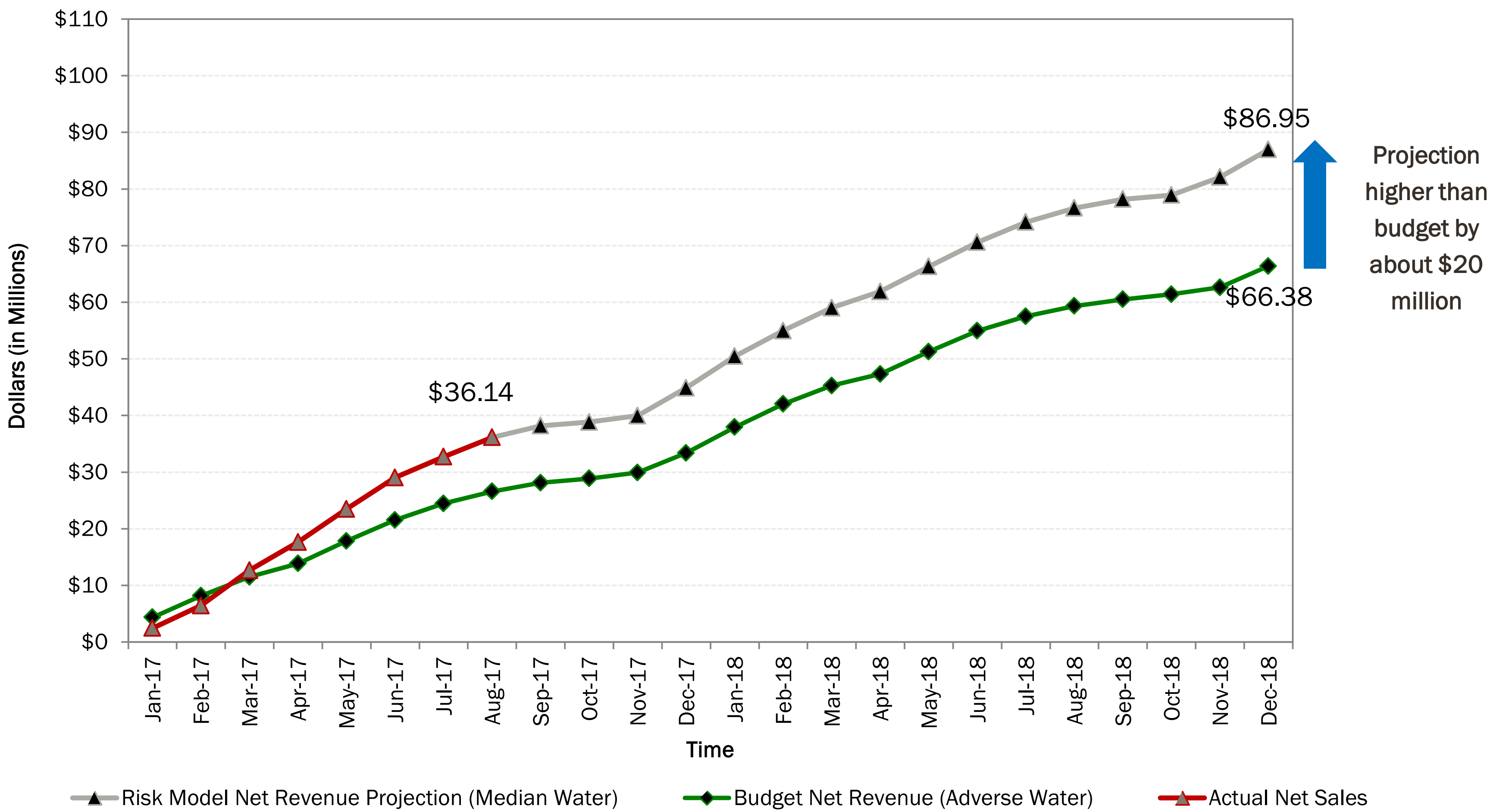
2 Hedging Program

Wholesale Net Revenues

Section 1

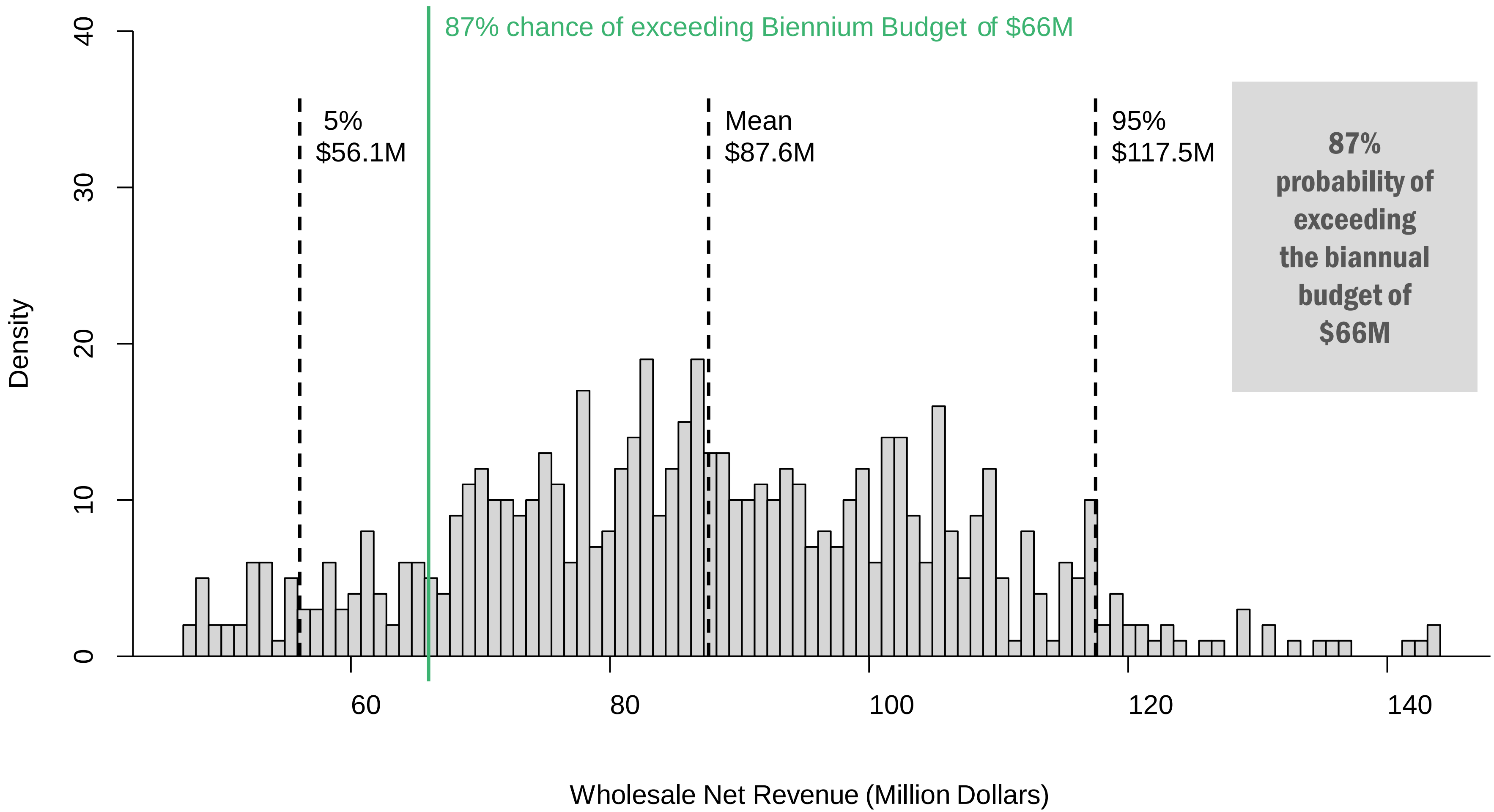
Commercial Operations Update

Cumulative Net Wholesale Revenue vs. Budget Net Revenue
January 2017 – December 2018



Commercial Operations Update

Simulation of Biennial Net Revenues

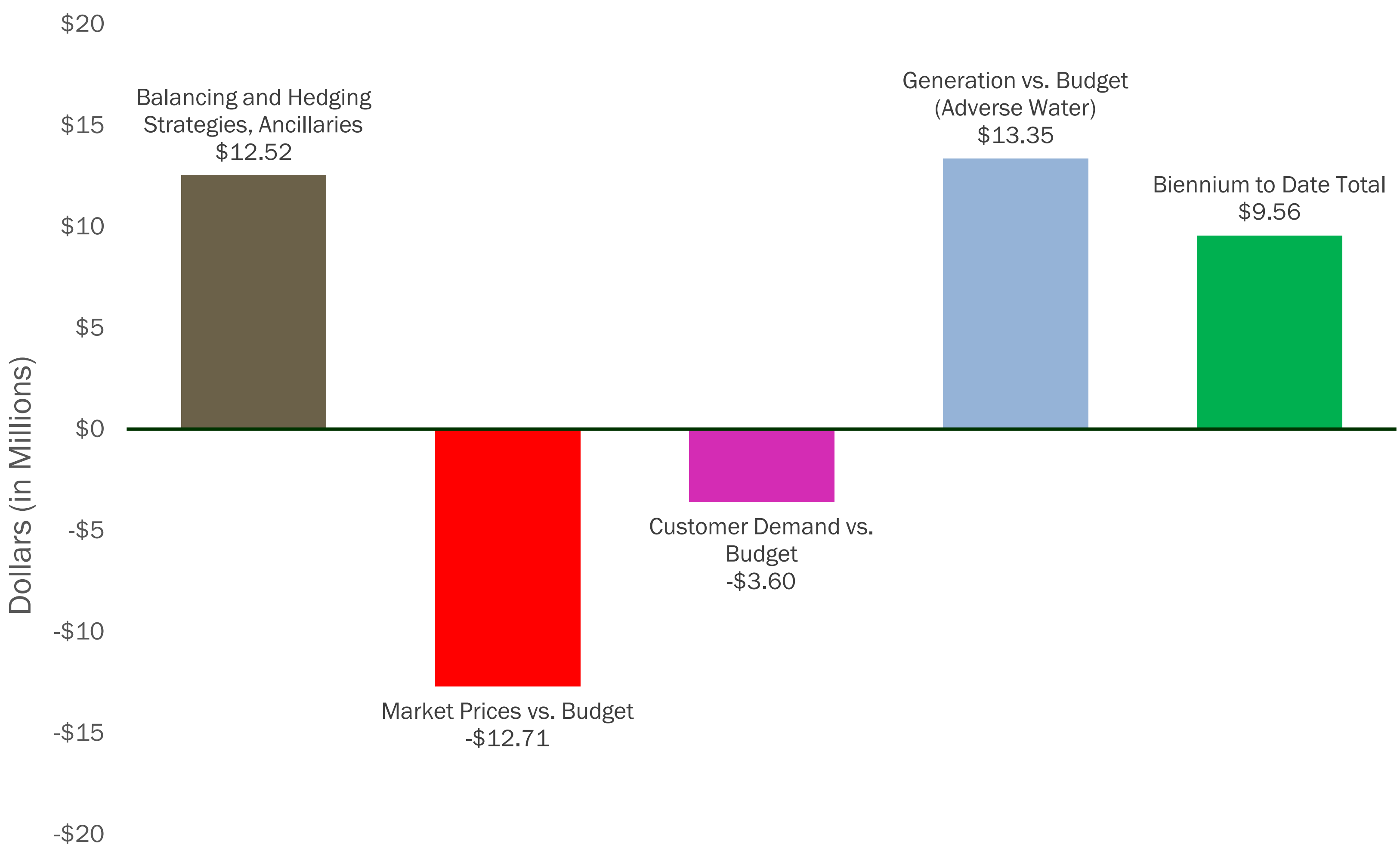


87% probability of exceeding the biannual budget of $66M

Commercial Operations Update

Cumulative Net Wholesale Revenue Variance

January 2017 – August 2017



Hedging Program

Section 2

Overview

Hedging Program Objective

A hedging program is part of Tacoma Power's energy risk management policy.

The objective of the hedging program is to:

- ✓ Stabilize net revenues from wholesale operations
- ✓ Protect against very low wholesale revenue outcomes

Hedging Program Design

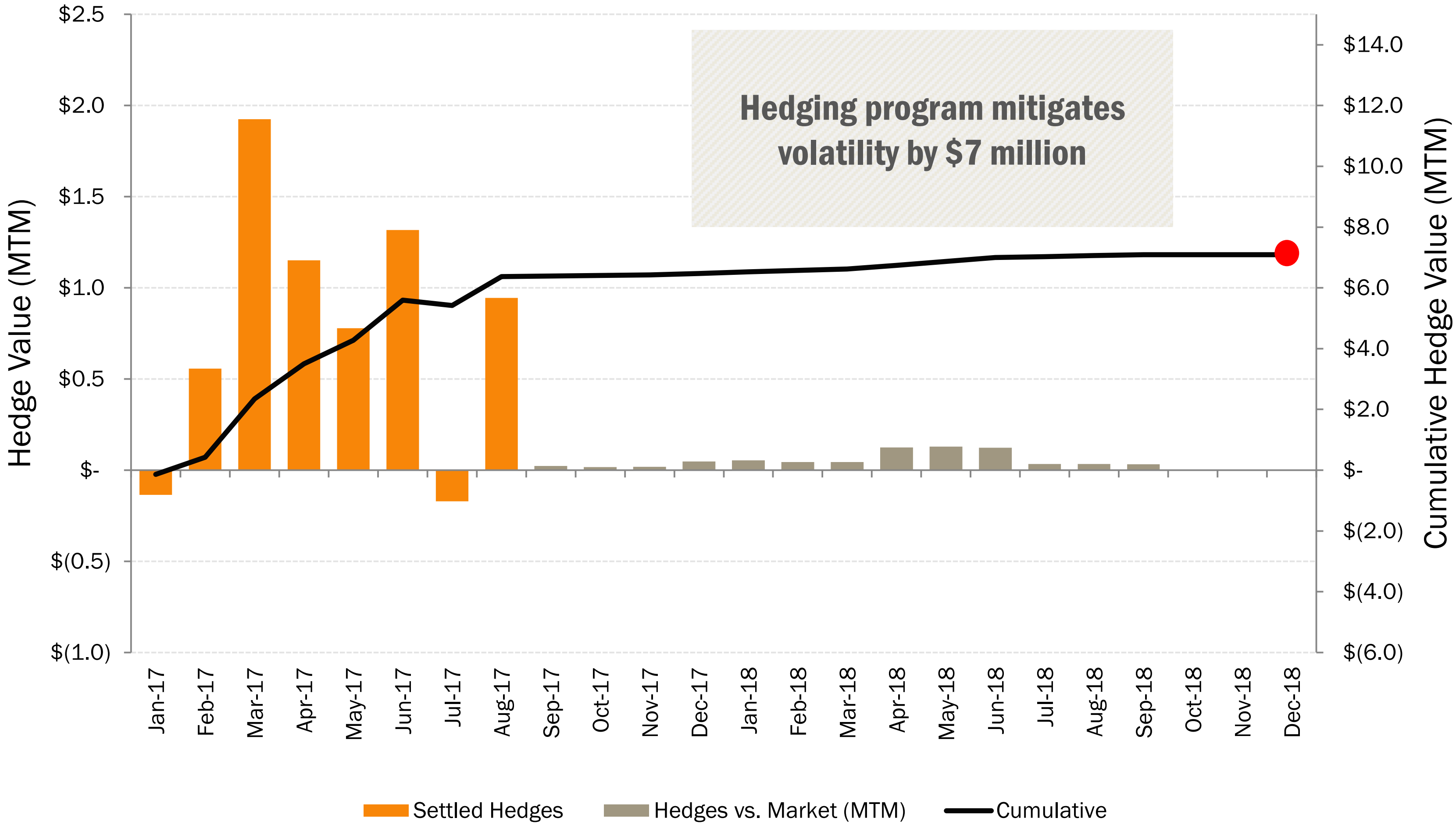
The hedging policy enforces dollar cost averaging of surplus sales and prohibits holding deficit positions.

The program has a two year horizon, and utilizes physical forward contracts.

Allowable hedge ratio governed by "hedging bands" that:

- ✓ Limit the maximum amount hedged far into the future
- ✓ Require progressively more surplus be hedged as time to delivery gets closer

2017-18 Program Performance



Overview

Background

- ✓ Tacoma Power frequently sells electricity to wholesale trading partners or "counterparties"
- ✓ Tacoma Power incurs credit exposure – money that the utility could lose in the event of a counterparty default

Credit Risk Management Program

Tacoma Power manages credit risk by:

- ✓ Extending credit to investment grade counterparties only
- ✓ Setting exposure limits based on creditworthiness
- ✓ Daily monitoring of credit quality
- ✓ Daily monitoring of exposure
- ✓ Actions include stopping trading with a specific counterparty, requesting collateralization.

Top 15 Credit Exposures

Counterparty	Credit Rating	Exposure	LC Collateral	Loss in Event of Default
Avangrid Renewables, LLC	BBB+	$633,004		$633,004
Vitol, Inc.	BBB	$585,310		$585,310
Pacific Northwest Generating Cooperative, Inc.	NR	$519,120		$519,120
Morgan Stanley Capital Group, Inc.	A	$457,337		$457,337
Portland General Electric Co.	A-	$393,287		$393,287
TransAlta Energy Marketing (US) Inc.	BB+	$358,015	$1,000,000	$0
Southern California Edison Co.	A	$355,000		$355,000
EDF Trading Limited	BBB+	$310,163		$310,163
PacifiCorp	A-	$293,880		$293,880
BP Energy Company	BBB+	$263,432		$263,432
Shell Energy North America (US), L.P.	A	$182,035		$182,035
Brookfield Energy Marketing LP	A-	$170,876	$2,000,000	$0
Puget Sound Energy, Inc.	BBB+	$157,640		$157,640
Avista Corporation	BBB	$147,730		$147,730
Powerex Corp.	AAA	$34,850		$34,850

BUILDING AND INSPIRING LEADERSHIP

TPU-Wide Leadership Development Program

PUB Board Meeting
October 11, 2017

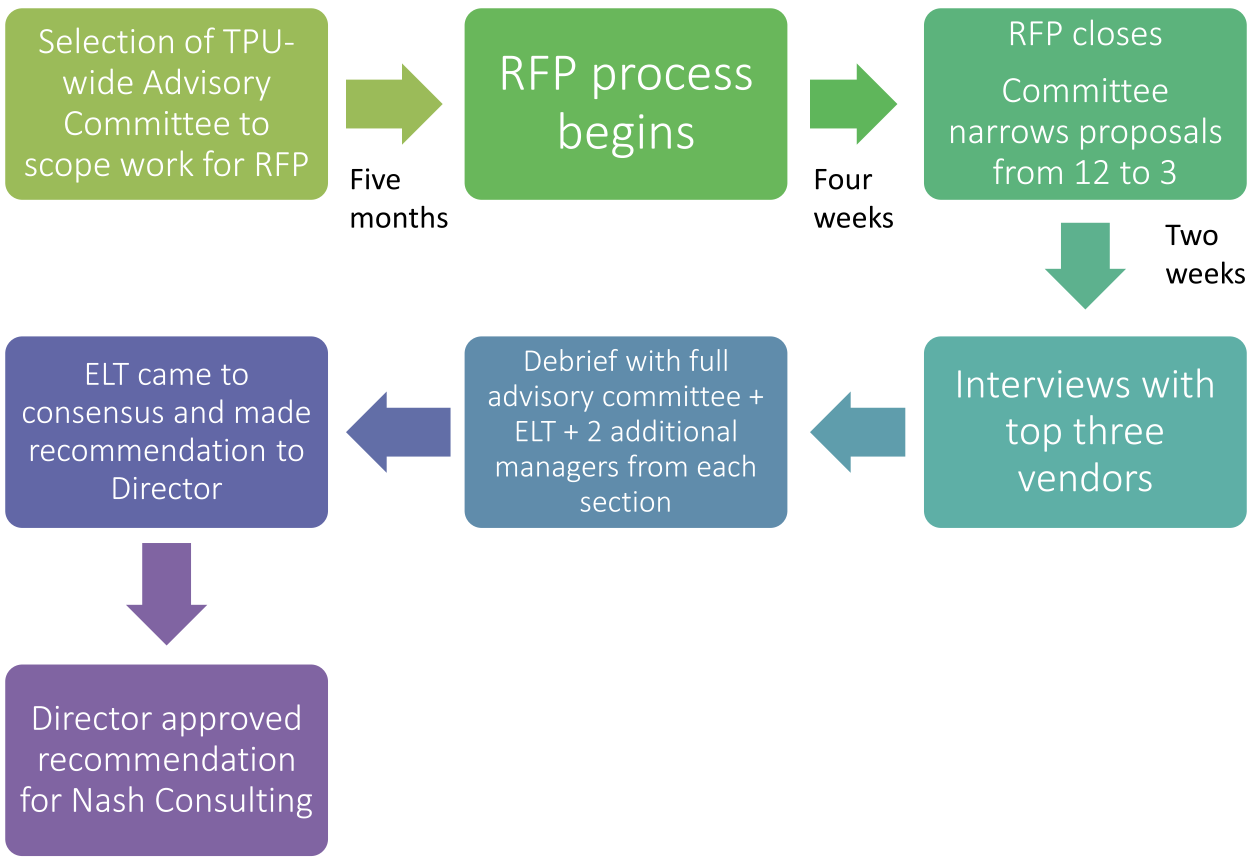
WHY

You can pay employees to give their backs and hands, but they volunteer their hearts and brains.

- DR. STEPHEN R. COVEY

Fact: 80% of exiting employees aren't quitting their job…they're quitting their **boss**.

HOW



Selection of TPU-wide Advisory Committee to scope work for RFP
Five months
RFP process begins
Four weeks
RFP closes
Committee narrows proposals from 12 to 3
Two weeks
Interviews with top three vendors
Debrief with full advisory committee + ELT + 2 additional managers from each section
ELT came to consensus and made recommendation to Director
Director approved recommendation for Nash Consulting

THE CURRICULUM

THE NASH 5-DAY

Day One

MINDSET

- Top 15 management skills
- Importance of morale
- Learn and improve adaptive skills
- Intentional 1:1s

Day Two

TOOL BELT

- Give and receive feedback
- Combat triangulation and negativity
- Decision making

Day Three

BEHAVIOR STYLES

- Discover own behavior style
- Learn how to adjust style
- Recognize and appreciate behaviors in others

Day Four

PERFORMANCE MANAGEMENT

- Role as mentor and coach
- Strategies for dealing with employee issues
- Power of recognition and reward

Day Five

SUSTAINABILITY

- Action planning for success
- P.R.O.A.C.T
- Conflict resolution
- Breaking down silos

CLIENTS

WATER/POWER UTILITIES

WOODINVILLE WATER DISTRICT

SNOHOMISH COUNTY PUD

P.U.D. CHELAN COUNTY

Seattle City Light

GOVERNMENT

THE CITY OF WENATCHEE WASHINGTON

NON-PROFIT

the Y YMCA

PRIVATE SECTOR

SWEDISH

Microsoft

Cashmere Valley Bank Member FDIC

PERKINS COIE COUNSEL TO GREAT COMPANIES

WHO

M I C H A E L   N A S H
P R E S I D E N T

Michael brings 30 years of experience helping organizations and leaders achieve results. He has assisted over 100 organizations move toward greater excellence and success.

- B.A. in Social Work
- M.A. in Applied Behavioral Sciences with an emphasis on Organizational Development & Coaching
- 18 years of direct executive management experience
- 20 years of partnering with organizations as an external consultant, executive coach and trainer

WHAT'S NEXT

- NEGOTIATE CONTRACT AND SCOPE OF WORK
- PUB REVIEWS FOR APPROVAL (NOVEMBER 15)
- CONSULTANT ON SITE FOR PLANNING (DECEMBER 2017)
- TRAININGS BEGIN (Q1 2018)

Long-Range Financial Plan

Public Utility Board Study Session

TACOMA POWER
TACOMA PUBLIC UTILITIES

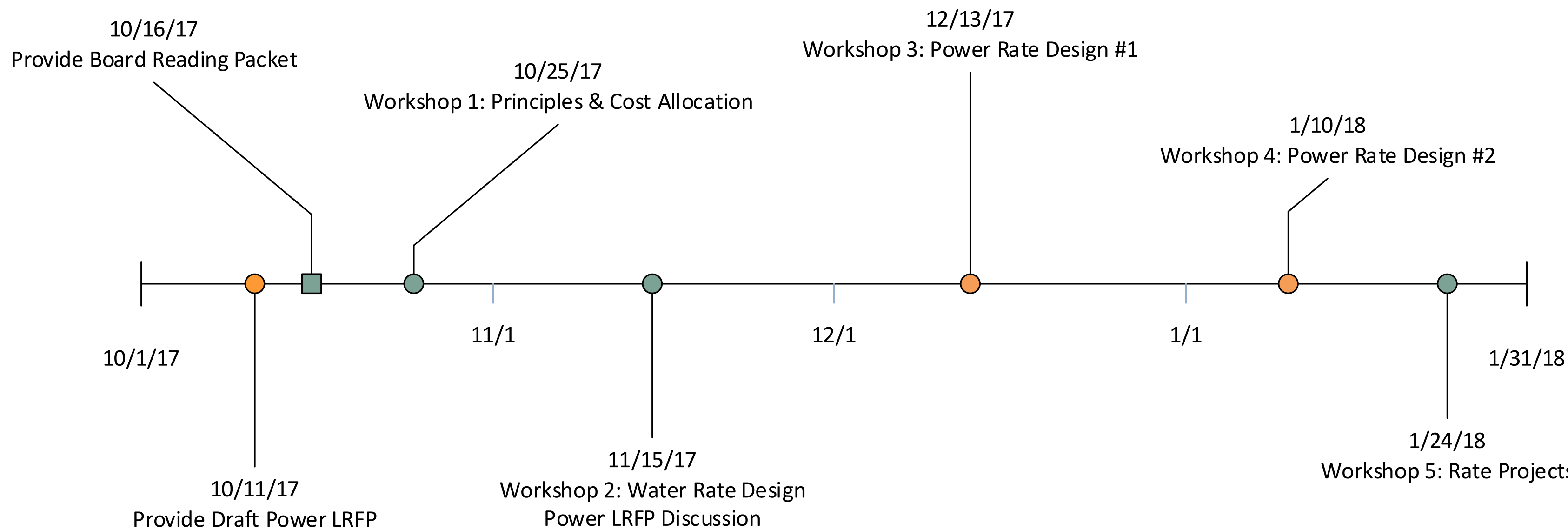
Bill Berry
Travis Metcalfe

October 11, 2017

How Stakeholders Might Use the LRFP

	Education	Financial Planning	Strategic Planning	Decision-Making	Competitive Position
Public Utility Board	✓	✓	✓	✓	
City Council	✓	✓	✓	✓	
Management	✓	✓	✓	✓	✓
Customers	✓	✓			
Financial Community	✓				✓
Employees	✓	✓	✓	✓	
Public	✓				
Other Stakeholders	✓				

Updated Schedule for Board Workshops



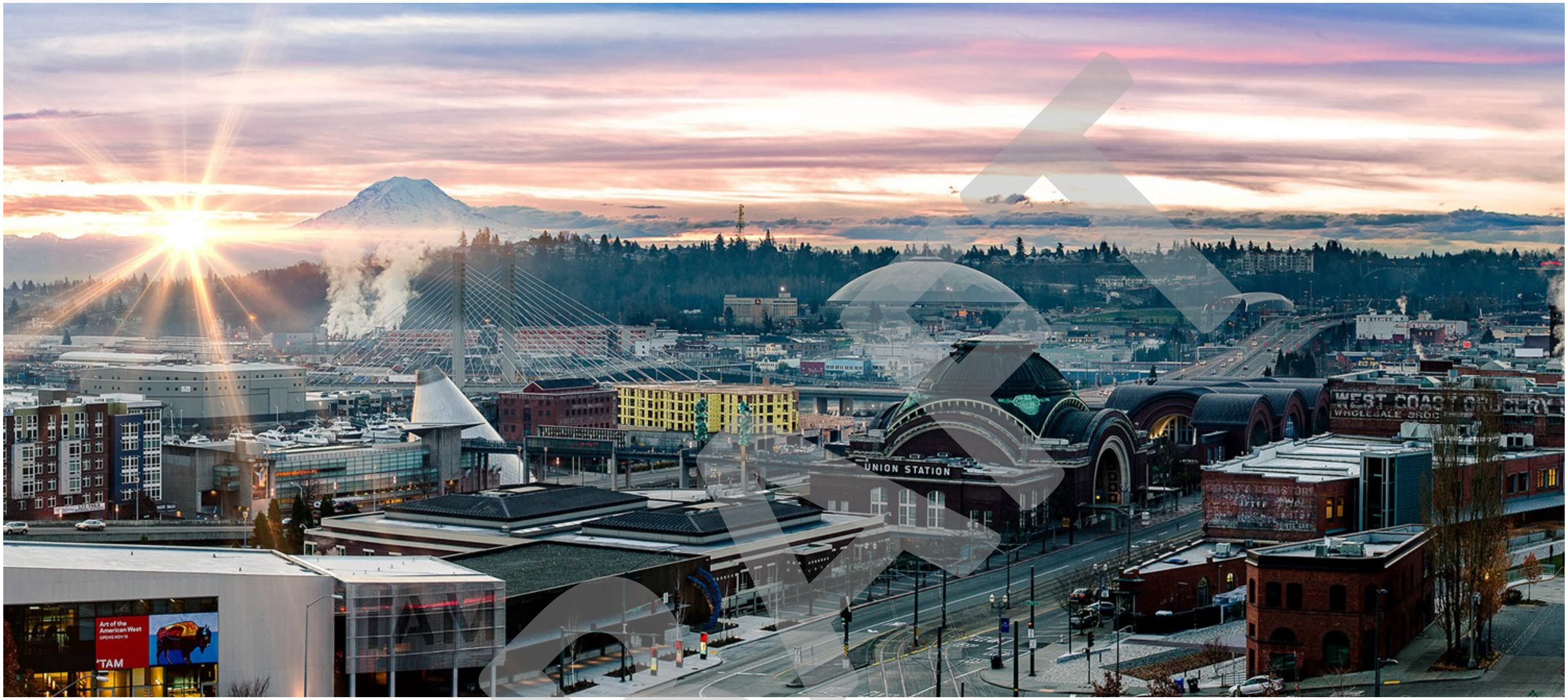
TACOMA POWER

TACOMA PUBLIC UTILITIES

LONG-RANGE FINANCIAL PLAN

Rates, Planning & Analysis

October 11, 2017



Welcome!

We wrote this document to help you understand many of the key issues affecting the future financial performance of Tacoma Power. It is intended to be available for our customers, employees, the Public Utility Board, City Council, members of the public, and any stakeholder who is interested in learning a little more about us.

Financial strategy is a complicated subject, so we've worked hard to distill this information and organize it so you can find what you need quickly and easily.

The purpose of this Long-Range Financial Plan (or LRFP) is to serve as a guide for maintaining low rates while also preserving the utility's financial strength and flexibility into the future.

In the following pages, you'll find explanations about:

Rate Projections
Financial policies
Reserves
Credit ratings
Historical actions
Opportunities
Risks

An important factor to keep in mind about this document is that our financial position and the information used throughout the document changes (improves or degrades) every day. Our current forecast for this document goes through 2026, but that does not mean that the projections for each of the years preceding will not have changed by the time you read through it.

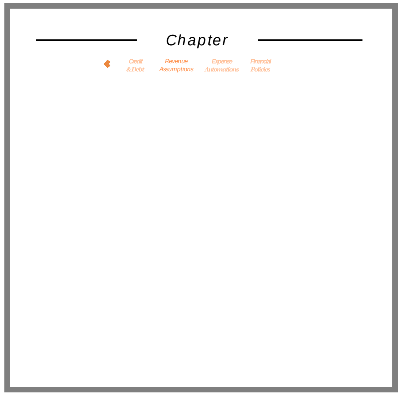
For this reason, the LRFP is dynamic and continually changing. **You will always be able to find the latest version on our website.**

For the purposes of displaying information and analyzing past performance, however, Tacoma Power has used unaudited financial performance reported through August 30, 2017.

How to Use This Document

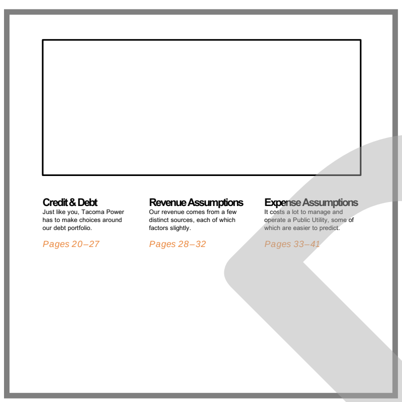
Use these navigational tools throughout the document to improve your overall experience

Bread Crumb Trail

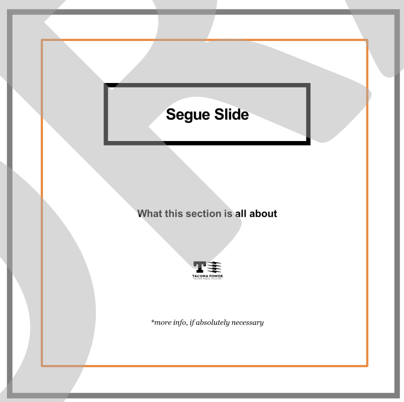


Glossary Links

Jump Markers



Segue Slides



Bread Crumb Trail

Prevents you from getting lost in the document. Click on the chapter headings to jump forward or back, or use the back arrow to return to the top

Glossary Links

Gives you quick access to the glossary to help clarify any unfamiliar terms

Jump Markers

Hyperlinks that let you jump directly to sections of interest

Segue Slides

Bold chapter dividers that make it easy to scrub through the document to find what you need

Table of Contents

If you're reading a digital version, click the links to jump instantly to that section of the document

Section 1

The Highlights

An executive summary* of the Long-Range Financial Plan

TACOMA POWER
TACOMA PUBLIC UTILITIES

**Maybe not enough to make you an expert, but if you already know your way around an LRFP, this is definitely the place to start.*

Before you start

The electric utility business is complicated

On the first page you learned that this document more simply describes a number of complicated subjects. We hope to make them easier to understand and demonstrate their unique relationship to one another. Before we get into any of the details, here is a quick overview of how our business operates.

Our mission is to provide safe, reliable, and environmentally responsible electric and telecommunications services now and into the future.

To fulfill this mission, we sell electric and telecommunications services to customers in the City of Tacoma and Pierce County. Selling these services provides us with revenue. As a cost-of-service utility, we charge our customers based on what it costs to provide the services they need. We generally match our revenues to our expenses when we set budgets. When we collect more revenue in a given year, we use that surplus to reduce the amount collected from customers in future years. We also take proactive steps to account for the risks inherent in our business and develop strategies to plan for the future. This LRFP helps us with that.

Many customers don't know that whenever they turn on a light or plug in an appliance, a generator connected to the electric grid must increase its output to provide the needed electricity. This happens in real-time. Providing these services is a 24-hour a day and 365-day a year business. We don't want our customer's lights to ever go out and if they do, we do everything we can to get the lights back on.

The amount of revenue we will receive each year is uncertain. We can't predict how often you will turn your lights on and off or how much electricity you will use. Section 3 has more detail about how we try plan for this uncertainty in revenue.

Our customer's power comes from hydroelectric dams that we operate and maintain, or power we purchase through contracts with other power providers. Almost all of our generators create electricity by passing water through a generator. The water comes from rainfall or snow that melts and drains into reservoirs or lakes behind a dam. Trying to predict how often and when it will rain adds another layer of complexity to our business. See Section 5 for more detail on how we plan for this uncertainty.

In providing power services the utility incurs a number of expenses. These are such things as the staff that work here or the trucks and tools used to maintain the electric system. The electric utility business is capital intensive. This means we have large assets that are expensive to construct, operate, and maintain. Tacoma Power has over $1 billion in assets and some have been around for a long time. To fund repairs and replacement, we use a combination of cash and bonds. This allows us to spread the payments over the life of the asset, instead of paying in full, up-front. Receiving the best interest rates when we issue bonds requires us to maintain a certain level of cash and the ability to generate sufficient revenue to cover our expenses. In this Plan you will find more about how we manage all of these details and how they impact the rates our customers pay.

Financial metrics

What are financial metrics?

The word **metrics** refers to measurement. Financial metrics are one way to measure how well we are managing our resources. Each financial metric conveys a message about one aspect of the utility from a financial perspective. Metrics can be used to compare performance across utilities, identify strengths or weaknesses, and set targets for financial strength. Tacoma Power primarily looks at the three metrics below when projecting future rate increases and has targets, listed in the chart to the right, for maintaining our financial strength. You can find more detail about them in Section 4.

Tacoma Power Metrics	2012	2013	2014	2015	2016	2017*
Days of Liquidity *(Target: >180 Days)*	312	312	335	215	236	231
Debt Service Coverage Ratio *(Target: >2.0x)*	1.82x	1.88x	1.90x	2.01x	2.31x	2.66x
Debt Ratio *(Target: <50%)*	39%	29%	37%	29%	26%	29%

* Estimated based on projections and actual results through August

Days of Liquidity

Liquidity is another way to describe the amount of operating cash we have available. We measure this by the number of days cash we have available to operate the utility. This helps determine the utilities ability to cover necessary expenses.

Debt Service Coverage Ratio

The debt service coverage ratio measures how many times we can pay the annual interest and principal payments on our debt, or bonds, with our available cash flow for a given year. We target having at least twice as much cash flow needed to pay our annual debt obligations each year.

Debt Ratio

The debt ratio is the proportion of our assets that are financed by debt, or bonds. The lower the percentage, the lower the amount of debt service payments we are required to make. This provides us with financial flexibility.

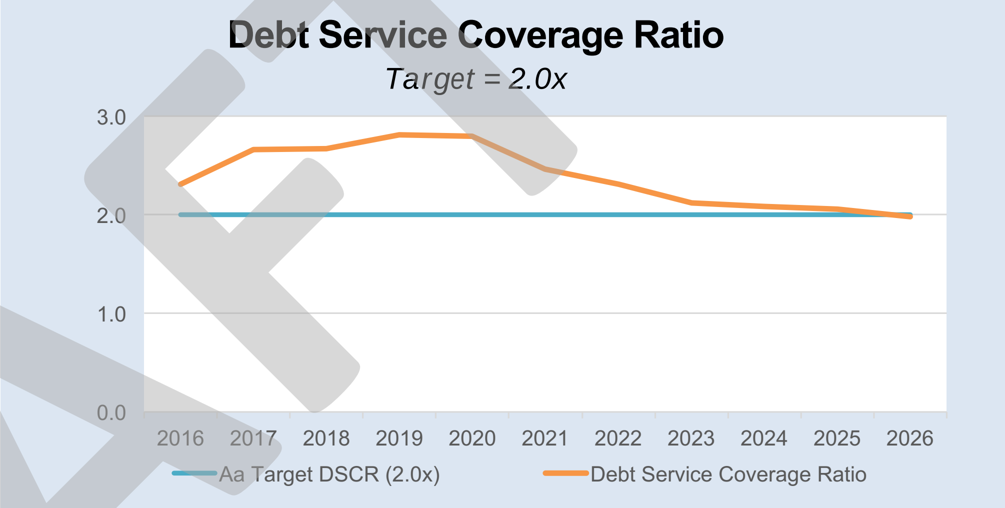
Financial metrics

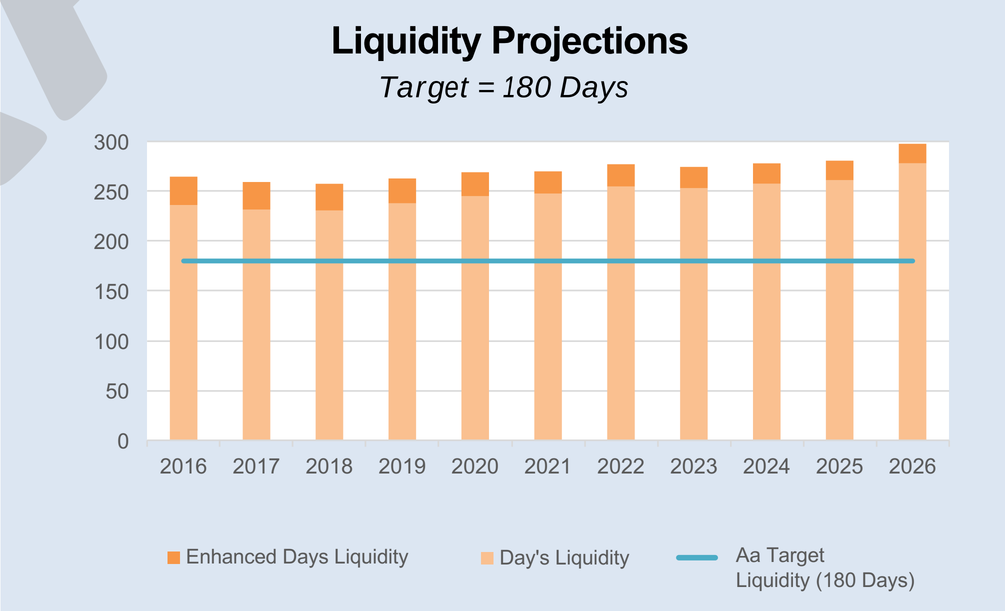
Why are financial metrics important?

Financial metrics, such as our debt service coverage ratio and days liquidity ratio are important because they indicate our ability to meet our financial obligations as a business. Financial metrics are comparable across other utilities and are used by rating agencies as part of their rating process when they rate us. Some rating agencies have more stringent requirements than others and we adjust our calculations to be better than the minimum levels. We target metrics that keep us in the AA rating category.

We use these ratings when we issue bonds to help pay for capital improvements. Investors buy Tacoma Power Bonds and we pay those bonds back over a period of up to 30 years. (See our existing debt repayment profile on page 41.) To get the best interest rates possible when we issue bonds, we must maintain healthy financial metrics. The better our credit rating is, the less we will pay when we issue debt. Being financially healthy, like we currently are, benefits customers and provides flexibility to address unexpected challenges.

The charts to the right illustrate a possible projection for our future Debt Service Coverage levels and Liquidity levels. These are subject to projections for rate increases, expenses, and revenues which you are explained further in Section 4.

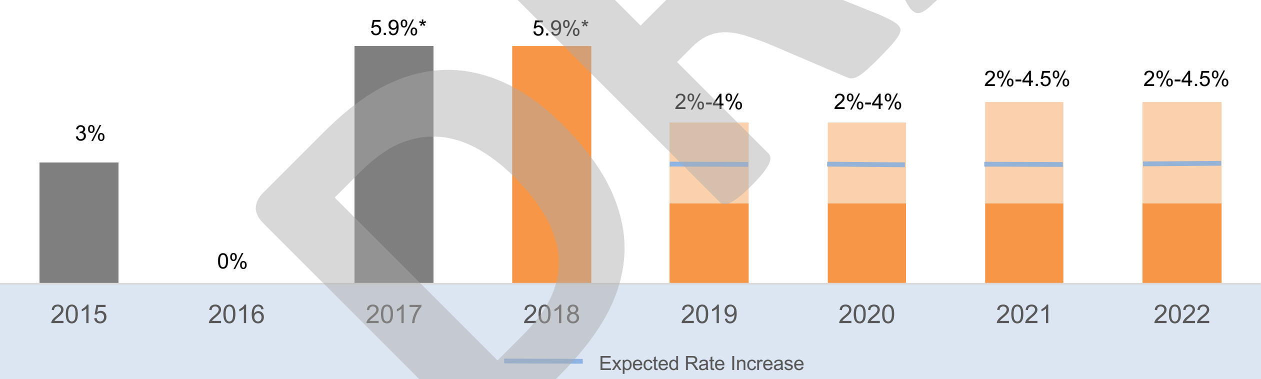




Before explaining anything else, we've put our current projections of rate increases for the next five years here, right up front. This document explains how we came up with these projections.

Historical & Projected Rate Increases

*The light shading in future years represents uncertainty associated with revenues and expenses, mostly due to potential for adverse** or critical water conditions, changes to sales projections, and future debt service.*



* 2017 and 2018 rate increases were approved by the City Council in April 2017

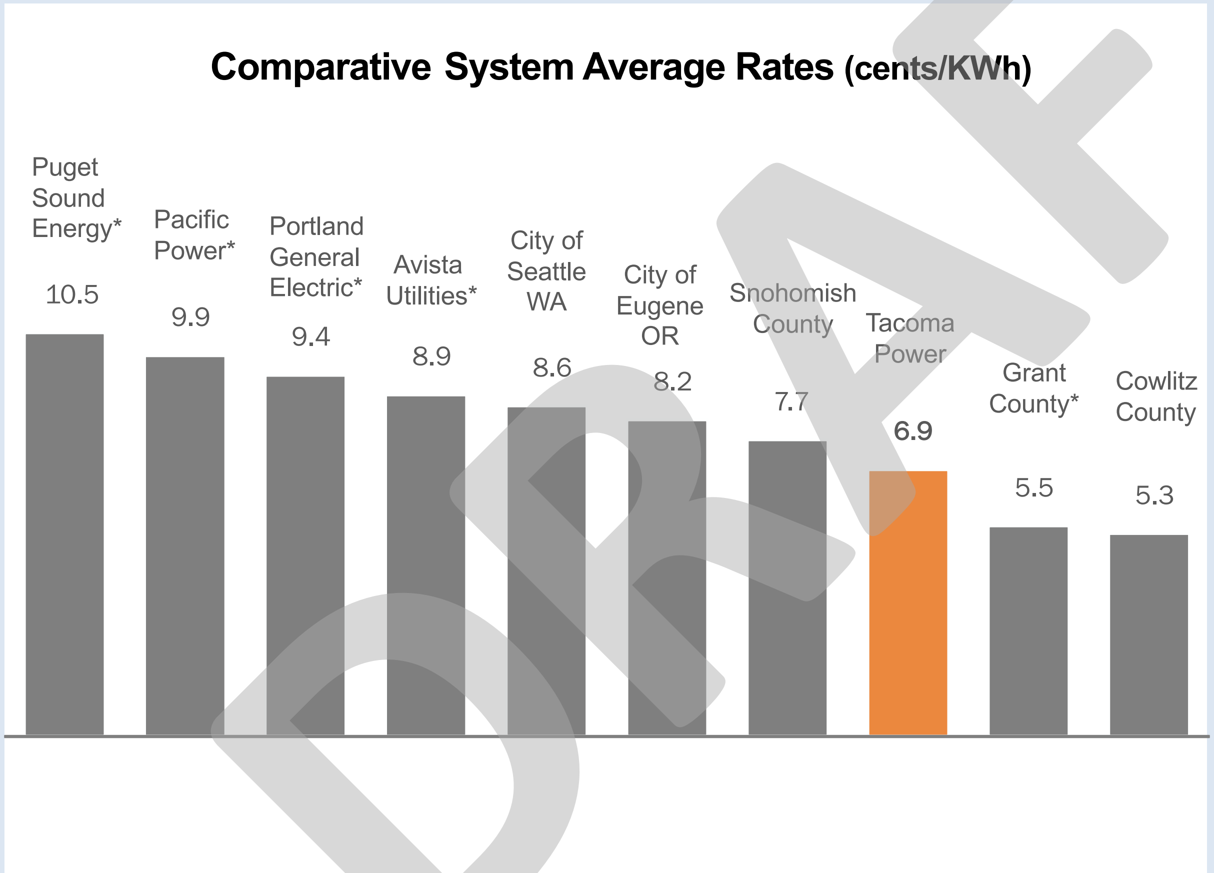
** If you are not familiar with any of these terms, there is a Glossary in the back that defines some of these key concepts

The further out in time we forecast, the more uncertainty there is. We have modeled some scenarios addressing potential future conditions that may impact us. The results of these scenarios indicate that doing a 0% rate increase in the next biennium would place upward pressure on future rate increases. The results of several scenarios can be found later in the document, in Section 6.

These projections like other parts of this plan will change. Actual rate increases may fall outside of this range and are dependent upon market conditions, financial performance, and the actions we may take in future years. You can read about some of the actions already underway starting on page 16.

Rates Remain Low and Competitive

How do our rates compare to other power providers in the Northwest?



*Includes an effective 6% tax levied by a city or town for comparison purposes only.

Even with our 2017 and 2018 rate increases, our rates remain low relative to our peers. This table compares monthly electric bills of major public and private utilities in our region to those of Tacoma Power.

We are a municipal utility that establishes rates only to recover costs, not to create a profit. We set rates with the goal of minimizing rate impacts to customers while maintaining the safety and reliability of the electric system. Tacoma Power has been able to maintain low rates in comparison to state and national averages. Most other utilities face many of the same challenges described in future sections of this document and we expect to remain price competitive in the future. Rates are established by the Public Utility Board and approved by the Tacoma City Council.

Why must rates go up?

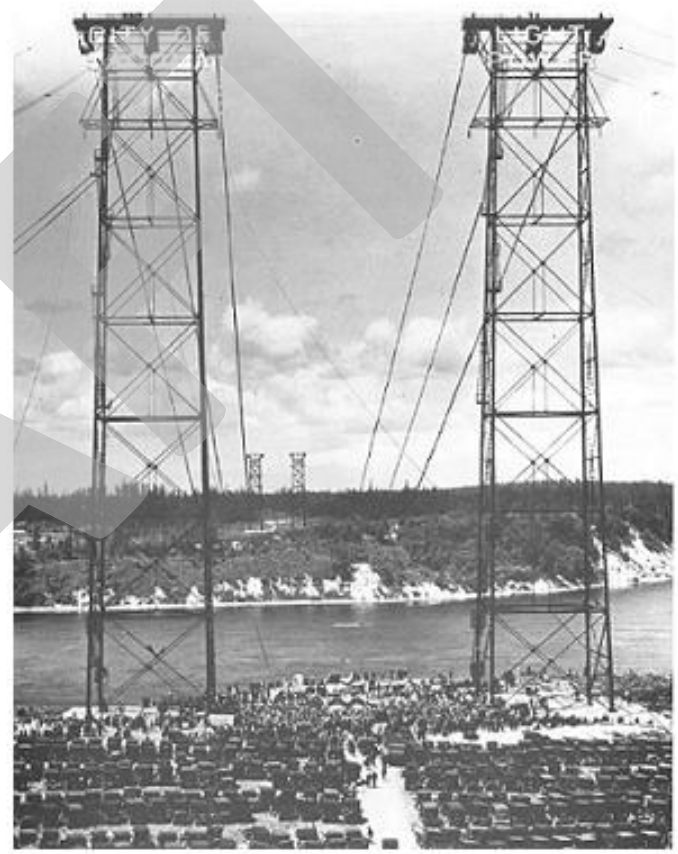
How did you get those increases?

Your next logical question might be, “how did you come up with those rate increases?” Or perhaps, “Why would the rates need to go up at all?”

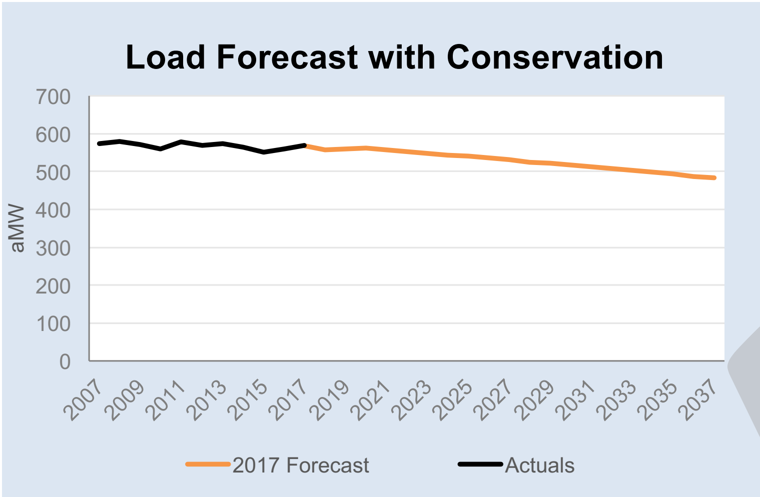
These are great questions. We can’t just point to one factor. Determining what a rate increase needs to be takes a thorough understanding of how the utility works and what it needs to operate successfully.

Here are a few of the many factors that impact future rates. These examples and others need to be considered when determining what the rate increases need to be:

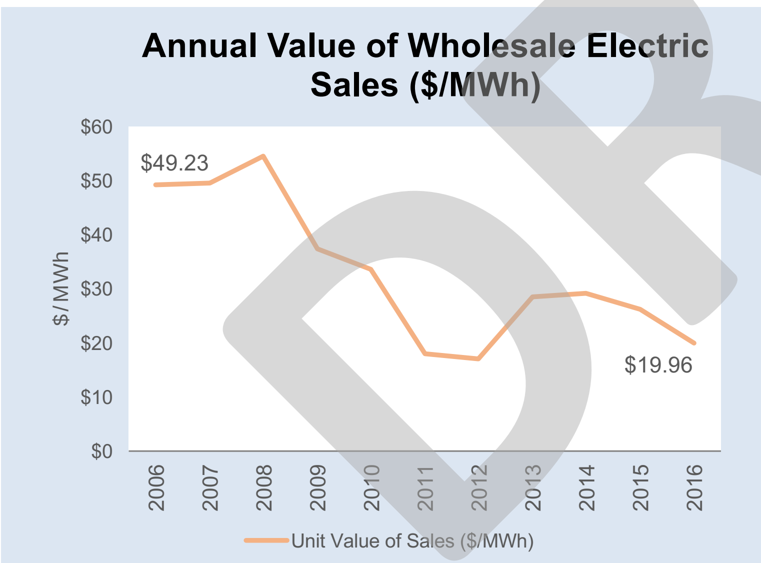
> *Increases in Operating Expenses and Purchased Power Expenses*
>
> See Section 3 on the Background to get a better understanding of these.
>
> *Decreases in Wholesale Revenue due to changing market conditions*
>
> See Section 5 on the Risks to get a better understanding of some of the things affecting our revenue.



This is a picture of the 1926 commissioning of the transmission lines connecting to our Cushman hydro project. Our utility has operated since 1893 and has a lot of infrastructure to maintain. We maintain and replace our assets with steady capital investments. You can find out more about that those capital investments in capital expenses of Section 3. For determining how to fund capital investments, see Section 7.



This chart shows a downward projection for our load. Load refers to energy consumption. Our system average load is projected to decline at a rate of approximately 0.8% per year.



This chart shows a downward trend in the value for each MWh sold, from $49.23/MWh in 2006 to $19.96/MWh in 2016.

Declining Retail and Wholesale Revenue

The charts to the left show two major impacts to our revenue: declining retail and wholesale revenue. (Read more about each of them in the explanation on revenues in Section 3.) The top chart illustrates how our most recent load forecast has changed in the last year. We see increases in conservation and declines in customer consumption, driving a decrease in our expectations for overall load.

The bottom chart illustrates the declining value for each MWh of electricity sold in the Wholesale electric markets. The more wholesale revenue we have, the more we can reduce future rate increases. There are many drivers for this decline which you can read about in the Section 5: risk factors.

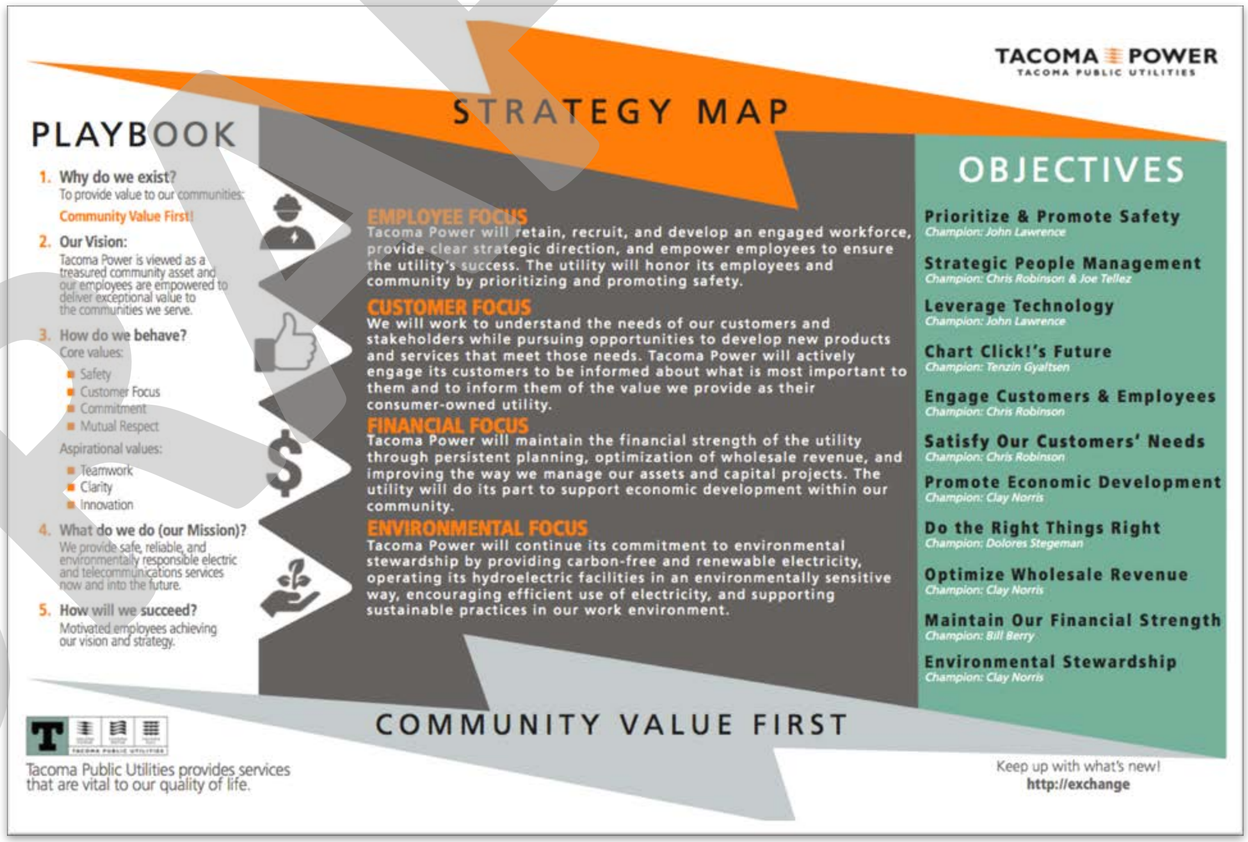
Can we change the projected rate increases?

Managing the future

The cost of electricity in Washington is just about the lowest of any state in the nation. Additionally, our customers have access to clean, renewable, and reliable electric service at a cost lower than many of our local peers (see page 11 and page 22 for a comparison).

Despite the low rates we currently have, we don't feel any better about the projected rate increases than you do. We devote a lot of time and effort into developing and executing strategies to mitigate risk, reduce expenses, and increase revenues.

The data in this Plan feeds directly into Tacoma Power's Strategic Plan. The picture on the right is our Strategy Map – a high level summary of our Strategic Plan. In that plan, we are working on executing strategies we believe will help us reduce future rate increases. A few of the objectives that directly relate to these strategies are Optimize Wholesale Revenue and Maintain Our Financial Strength.



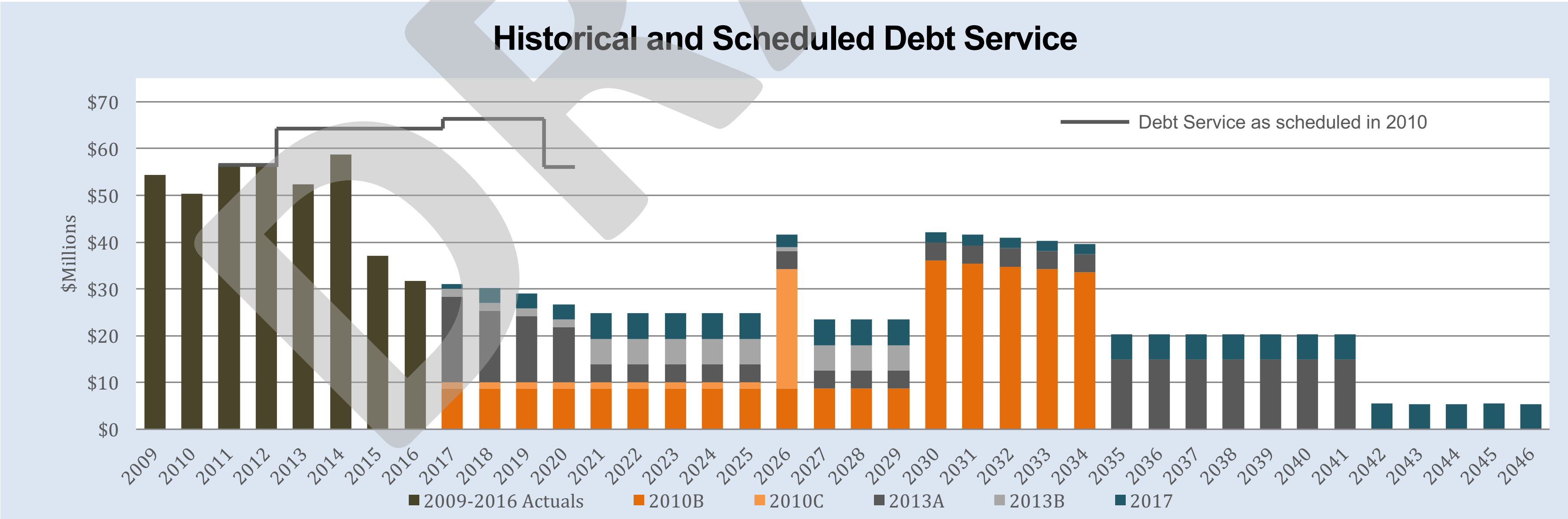
Active Debt Management

Managing Debt Service has produced significant savings

Tacoma Power sells Bonds to help fund capital improvements. Much like a home mortgage, we can structure this debt to pay it back over 30 years or other intervals. You can see from our existing profile below that Bonds we have issued in different years has been structured in different ways. We actively manage this debt profile and have made a number of changes since 2009.

Between 2009 and 2013, Tacoma Power defeased $79 million and refunded $137 million in outstanding bonds. In 2015, Tacoma Power used $122 million in cash to call the 2005B Bonds. You can read more about this on page 43. In fact, in 2010 our Debt Service payment in 2017 was projected to be over $66 million. After the many changes we have implemented in the last few years, our Debt Service payments this year will be less than $32 million.

This represents significant savings for Tacoma Power's customers. In 2016, we were able to not have a rate increase at all and this is largely because of the reduced debt service payments.



Actions

The Strategic Plan mentioned previously includes Initiatives to manage expenses, such as our Strategic Asset Management Initiative and our Capital Project Portfolio Management Office Initiative.

Other initiatives, such as our O&M Cost Savings Initiative and the development of a debt service management plan, are things we are doing now to find efficiencies and reduce expenses. A brief summary of these and other actions we can take to minimize future rate increases are provided to the right and in more detail in *Section 8: Making it Happen.*

Asset Management

(in progress)

Tacoma Power is launching a strategic asset management program to assess the maturity of our capital assets and develop a plan to evaluate and recommend the gradual replacement of infrastructure.

Page 81

Capital Portfolio Management Office

(in progress)

The development of a Capital Project Portfolio Management Office will provide utility project managers with centralized data and common tools regarding capital projects. We will use common project management techniques to facilitate more informed decision making at Tacoma Power.

Page 82

Debt Service Management Plan

(planning stage)

Development of a debt service management plan will identify existing bond issuances that could be called or defeased to manage future annual debt service requirements.

Page 83

Concurrent Consideration and Approval of Budget and Rates

(planning stage)

Tacoma Power will develop a new process for the concurrent adoption of rates and the 2019/2020 budget. Our previous process involved adoption of a budget first, and then receiving approval of the rates to support the budget at a later date. There are many steps involved in the budget and rates approval process that will need to be adjusted moving forward.

Page 84

O&M Cost Savings Initiative

(in progress)

Tacoma Power's Rates, Planning, and Analysis group has established a process to meet with every section and identify a list of cost savings initiatives the utility can implement. The list of cost saving opportunities will be prioritized and executed according to a developed timeline. An example of one such cost saving item currently underway is TPU's fleet utilization. An approach for managing TPU's fleet in a more efficient and effective manner will be incorporated into the next biennium's operations and maintenance budget.

Page 85

Section 2

LRFPs for Beginners

A simple* guide to long-range financial plans, why they're important, and how they work

TACOMA POWER
TACOMA PUBLIC UTILITIES

**This is perfect for folks who are less interested in financial charts, rate tables, and the like.*

The Basics

Why an LRFP?

A Long-Range Financial Plan (LRFP) is an important document used by businesses to guide their decision-making over a span of multiple years. It helps keep the business aligned with its broader goals and helps prepare for future impacts.

This Plan influences budget planning, investments, and other aspects of financial strategy. It's also an important tool for communicating these decisions to stakeholders, customers, and other groups.

We have used the preparation of this document as a tool to conduct research and analysis into potential scenarios that may affect our business. We use what we learn from that analysis to improve business decisions.

It is our intention to use the LRFP as a key input in our Rate and Budget review and approval process. The LRFP will be updated annually and shared with Policy Makers and the Public.

What goes in an LRFP?

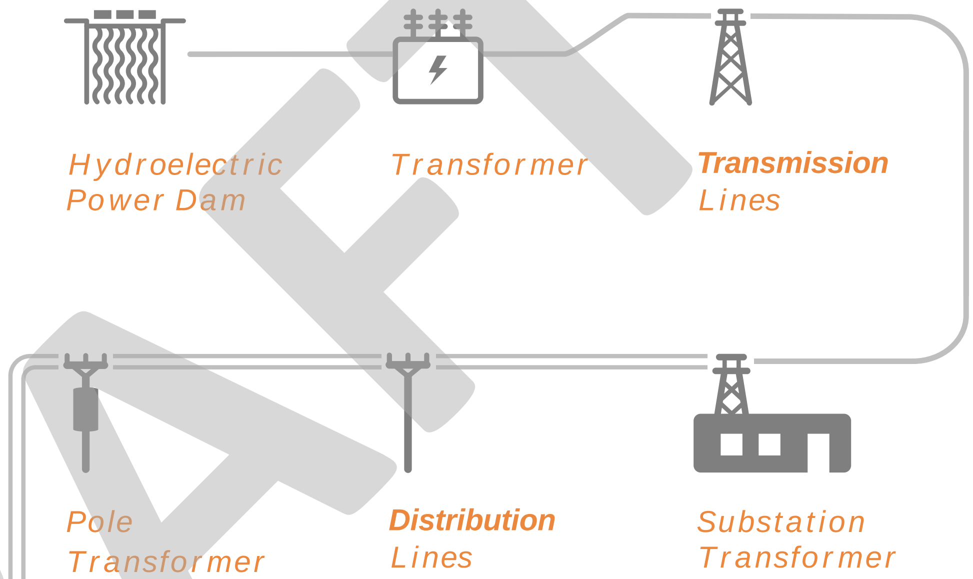
A long-range financial plan typically includes:

- *Research and trends*
- *Strategic planning*
- *Decision-making tools*
- ***Action** steps*

How does electricity work?

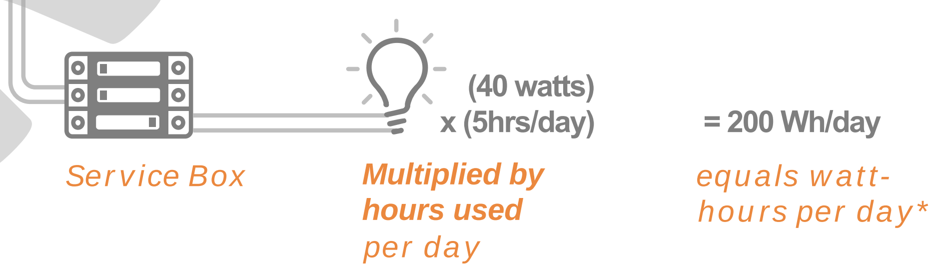
What happens when I flip on my light switch?

Electricity is delivered to the circuit, supplying power to various devices.



How do you measure electricity?

The math to determine your watt-hour usage is very simple.



**We usually measure electricity in kilowatt-hours (kWh) which is the same as one thousand watt-hours. On an annual basis this may turn into megawatt-hours (MWh) or one million watt-hours. An average residential customer uses approximately 958 kWh a month.*

Who exactly is Tacoma Power?

What kind of company is Tacoma Power?

Actually, Tacoma Power is not a company in the legal sense. Tacoma Power was established in 1893 when the citizens of Tacoma voted to buy the privately owned Tacoma Light & Water Company. Local citizens believed public ownership and local control would provide a higher quality of service. Tacoma Power is a City-owned Department that provides electricity to approximately 179,000 customers in the City and surrounding area, including the local military base.

What's the difference between a Public Utility and an Investor-owned Utility?

Publicly owned utilities are "non-profit" utilities managed by locally elected officials and public employees. Their rates are set to recover costs and not to return a specific profit margin. Investor-owned utilities are privately owned by investors, and set rates to recover costs plus a reasonable return to be earned by their investors.

Who Runs Tacoma Power?

Tacoma Power is the light division of Tacoma Public Utilities and is governed by a five-member **Public Utility Board.** The Tacoma City Council appoints the volunteer board members and they serve staggered five-year terms, unpaid. **Board meetings** and discussions are open to the public for comment and televised live on TV. The City Council has final authority over Tacoma Power's budgets, rates, financing, and other matters.

Who is responsible for the day-to-day operations?

The Board appointed the Director of Utilities, Bill Gaines, as the Chief Executive Officer to oversee the operations of Tacoma Public Utilities including Tacoma Power, Tacoma Water, and Tacoma Rail. In 2015, Chris Robinson was appointed as the Superintendent and Chief Operating Officer of Tacoma Power. He oversees the day-to-day operations of Tacoma Power with a six-member Senior Leadership Team.

Supporting our customers

How much electricity does Tacoma Power produce in a day?

Average use per household is 11 megawatt-hours per year. For all customers, Tacoma power produces approximately 4.7 million megawatt-hours per year. Our power supply is 90 percent hydroelectric power. 40 percent of our power supply is provided by our own hydroelectric power facilities. The remaining power supply is purchased through long-term contracts with other power supply companies, such as the Bonneville Power Administration

What programs are available for people ready to conserve or reduce electricity use?

Tacoma Power offers programs for conservation and customer-owned electricity generated by renewable resources, such as solar and wind. Customers with eligible generation systems may receive up to $5,000 annually. In addition to this financial incentive, annual electricity production from the renewable energy system would offset electricity the customer would otherwise purchase from the utility, lowering their electricity bill. You can find out more about our conservation programs at: **knowyourpower.com**

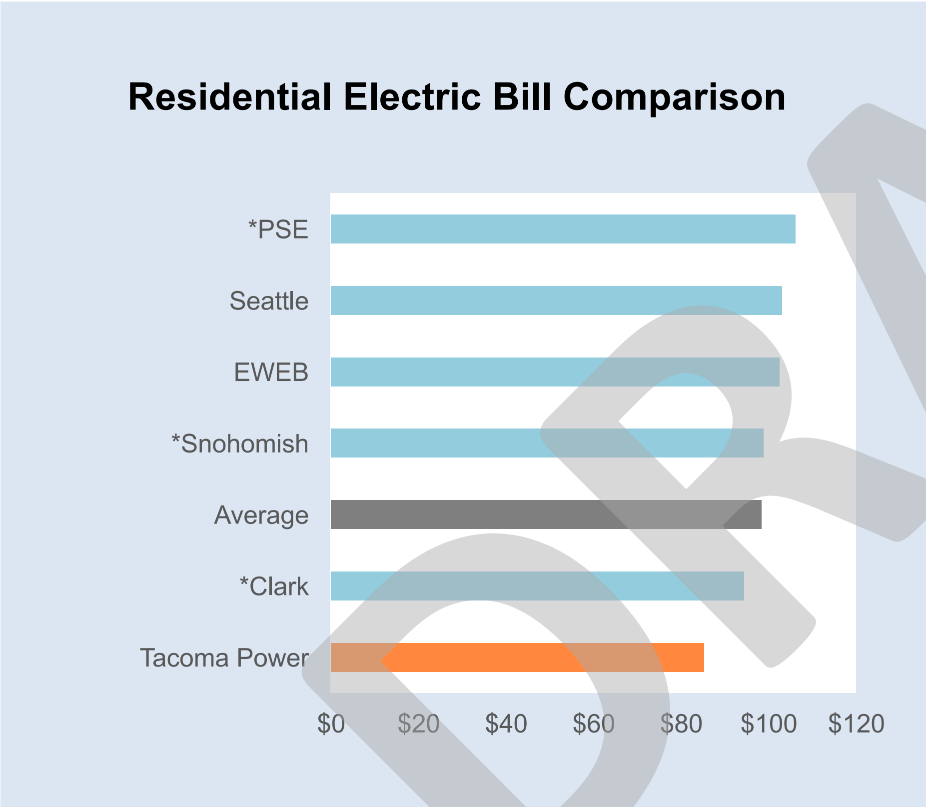
How does Tacoma Power support low-income customers?

Tacoma Power offers financial assistance programs to low-income customers that live in a home with permanent electric heat. Qualifying low-income customers can receive up to a 30 percent discount on their power bill.

How does Tacoma Power support the surrounding community?

The utility supports more than 40 annual giving and volunteering opportunities for employees. We help with the most pressing community needs by building houses, repacking food, and helping seniors stay safe, warm and dry in the homes they own. The volunteer program promotes a highly engaged workforce by developing employees' leadership skills and awareness of the community. See more on our community involvement page: **https://www.mytpu.org/about-tpu/community-involvement**

How is my electric bill determined?



- 2016 peer rates include an effective 6% tax levied by a city or town for comparison purposes only

How are rates set?

Rates are set to cover all operating and maintenance expenses, debt service, taxes, and a portion of capital additions and improvements made to the Electric System. Tacoma Power recommends rate adjustments with a goal of minimizing impacts to customers while maintaining the safety and reliability of the power system.

How often are rates updated?

Rate forecasts are updated every other year when the City of Tacoma prepares the biennial budget. Budget-setting is a year-long process. It includes things like reviewing and projecting revenues, prioritizing expenses and identifying ways to operate as efficiently as possible.

Who approves the rate increase?

The Tacoma Public Utility Board sets the electric rates for Tacoma Power, subject to final approval by the Tacoma City Council.

What about the actual bill?

Clearly labeled bill information

Address(es) served on this account

Summary of charges from Tacoma Public Utilities

Summary of charges from Environmental Services (Tacoma residents)

The Warm Home Fund is an easy way to donate to people in need

TACOMA PUBLIC UTILITIES

MyTPU.org/MyAccount
(253) 502-8600
3628 S. 35th St. | Tacoma, WA 98409

Account # 123456789
Amount Due
$443.93
Due Date
9/12/16

EDGAR ALLAN DOE
For service address 123 Amity Ave. | Tacoma, WA 98409

Previous Amount Due	$484.96
Payments	-$484.96
Balance	$0.00
Current Charges Due 9/12/16	$443.93
Amount Due	**$443.93**

Billing period – Jun. 24 to Aug. 23
(60 days)

Electricity Average cost per day $2.68	$161.13
Drinking water Average cost per day $1.32	$79.24

What do you think of the new design?
Whether you love it or hate it, we want to know what you think about your redesigned utility bill. Please visit **MyTPU.org/BillSurvey** to share your thoughts.

Take action
Log on to: MyTPU.org/MyAccount to update your phone number.
Current information will help us provide better service during power outages and other events.

Tacoma

Environmental Services

Wastewater Average cost per day $1.56	$93.48
Solid waste & recycling Average cost per day $1.02	$61.14
Surface water Average cost per day $0.82	$48.94
Total Current Charges	$443.93

TACOMA PUBLIC UTILITIES

Pay online at **MyTPU.org/MyAccount**
or make checks payable to City of Tacoma and mail to
P. O. Box 11010 • Tacoma, WA 98411-1010

Account # 123456789
Amount Due
$443.93
Due Date
9/12/16

☐ Check if your payment includes a donation to the low-income assistance program. Thank you!

Amount $__________

EDGAR ALLAN DOE
123 AMITY AVE
TACOMA WA 98409

Amount Paid
$__________

Sample bill

Easy-to-read billing summary

Account updates and important notifications

Detachable stub for you to easily mail your payment

Do all customers pay the same amount?

There are different customer types and ways in which the customers use the Tacoma Power system. The majority of our customers are considered residential customers, but there are also small commercial, large commercial, high voltage, and industrial customers too. Each type of customer pays a different amount based on how much it costs the City to make and deliver electricity to where those customers receive it.

What's really driving our costs?

Electricity prices generally reflect the costs to build, generate, purchase, finance, maintain, and safely operate the electricity grid. Tacoma Power has been able to maintain low rates in comparison to state and national averages, while at the same time covering all operating and maintenance expenses, and providing reliable services that customers want and need.

Credit: How does it work for Tacoma Power?

Maintaining an electrical system is expensive and comes with high capital costs. Utilities fund these systems, in part, by selling **bonds** to individual and institutional investors. In order to evaluate the value of these bonds, investors look to credit rating agencies like Moody's Investors Service, Standard and Poor's (S&P), and Fitch Ratings for analysis.

Similar to how the **credit rating** agencies that provide individuals with a credit rating used by lenders when you buy a car or house, each of these rating agencies has its own methodology, process, and scale for rating a utility like Tacoma Power. The rating agencies consider historical and projected financial performance, but their analysis goes beyond financial information and into items like economic indicators, reserve funds, power supply contracts, and management decisions. You can find out more about all of these things in the later details of this document.

Much of this process is not public, so in most cases, we can only speculate as to which factors are more important to the final rating. Moody's however has made attempts to provide more transparency in recent years and you can read more about methodologies on page 40.

Rating agencies are interested in different things

	Moody's*	S&P	Fitch
Investment Grade	Aaa	AAA	AAA
	Aa1	AA+	AA+
	Aa2	AA	AA
	Aa3	AA-	AA-
	A1	A+	A+
	A2	A	A
	A3	A-	A-
	Baa1	BBB+	BBB+
	Baa2	BBB	BBB
	Baa3	BBB-	BBB-
Non-Investment Grade Speculative	Ba1	BB+	BB+
	Ba2	BB	BB
	Ba3	BB-	BB-
	B1	B+	B+
	B2	B	B
	B3	B-	B-
	Caa1	CCC+	
	Caa2	CCC	
	Caa3	CCC-	CCC
	Ca	CCC	
	C		DDD
		D	DD
			D

Target **Current Tacoma Power Rating**

This table compares the different rating scales for the three credit rating agencies, with Tacoma Power's current rating highlighted.

** Moody's current rating for Tacoma Power only applies to Bonds issued before 2017.*

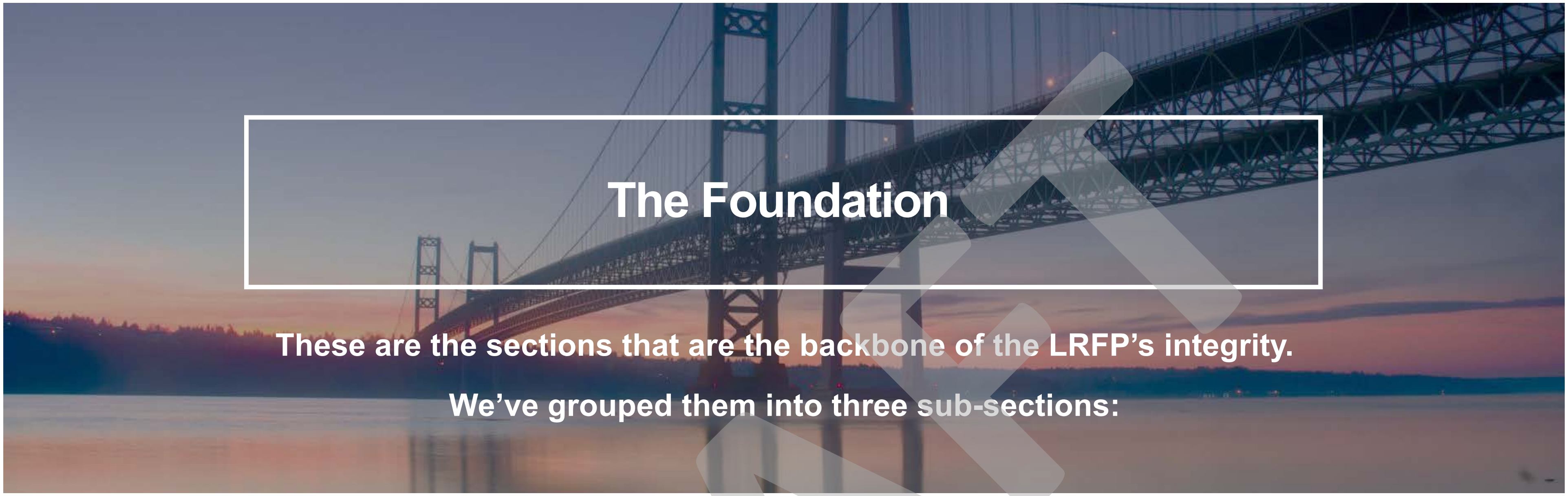
Section 3

Background

A look at the history, trends, research, policies, and other factors* that went into this Financial Plan

TACOMA POWER
TACOMA PUBLIC UTILITIES

**not including the late-night coffee, random Google searches, and the soundtrack to Hamilton*



The Foundation

These are the sections that are the backbone of the LRFP's integrity.

We've grouped them into three sub-sections:

Expense Assumptions

It costs a lot to manage and operate a utility. Some of those expenses are easier to predict and manage than others.

Pages 26–33

Revenue Assumptions

Our revenue comes from a few distinct sources. Each of these factor into our financial planning in slightly different ways.

Pages 34–39

Credit, Debt, & Reserves

Just like you, Tacoma Power has to make choices about how to manage its debt in order to maintain a strong credit rating.

Pages 40–49

Tacoma Power Expense Overview

Purchased Power and Renewable Energy Credits

Approximately 60% of Tacoma Power's electricity comes from power that we purchase from others. Most of this is through a long-term contract with the Bonneville Power Administration. We also purchase Renewable Energy Credits (RECs) to help comply with the Energy Independence Act.

Personnel

Personnel costs include more than just the wages for our employees. These costs also include medical, benefits, and increases in wages.

Capital

Capital projects are funded by a combination of Bonds and available revenue. Each biennium, the utility determines the appropriate amount to fund from each source.

Taxes

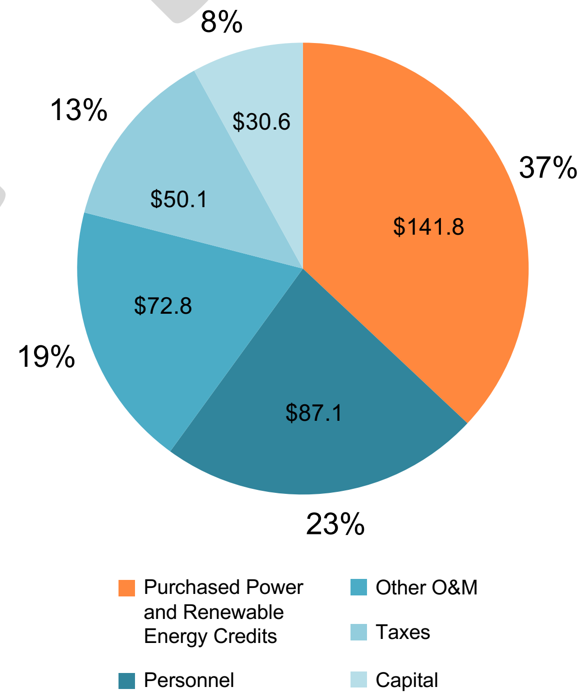
Tacoma Power is subject to a 7.5% City Gross Earnings Tax and a 3.873% State Public Utility Tax.

Other O&M

The majority of remaining expenditures are captured in Other Operations and Maintenance costs. This includes things like office supplies, safety equipment, legal and professional service c contracts, allocations to general government, non-capital project expenses, and administrative costs not directly attributed to personnel.

% Expenses by Type

(2016, $M)



Purchased Power and Renewable Energy Credits

Tacoma Power purchases a portion of the power needed to serve our customers through **Power Purchase Agreements.** Each agreement has different terms and conditions that determine things such as the length of the agreement and the cost associated with it. The largest of these agreements is with Bonneville Power Administration (BPA) and does not expire until 2028. BPA has a formal rate case process every two years to determine the costs its customers will pay.

Another large portion of expenses in this category are Transmission purchases. Tacoma Power has contracts that allow for the transfer of power through high-voltage transmission lines to Tacoma Power customers. These purchases also support our ability to buy and sell wholesale power.

Similar to the Power Purchase agreements, the transmission contracts have different terms and conditions that determine things such as the length of the agreement and the costs associated with them.

Finally, Tacoma Power purchases Renewable Energy Credits (RECs) as a means of helping to comply with Washington State's Renewable Portfolio Standard and supporting the development of new renewables, such as wind or solar power, in the region. Tacoma Power needs to supply 9% of its load from qualified renewable sources in 2016. Our current compliance with this requirement is detailed on **page 60**.

Power Purchase and REC Expense Components	% of Expenses in 2016
BPA Contract Purchases	80%
Priest Rapids Contract	0%
Columbia Basin Hydro	4%
Portfolio Purchases	3%
Evergreen Options	0%
Transmission	12%
Renewable Energy Credits	1%
2016 Purchased Power and REC Expenses	**$148,075,437**

Overview of Tacoma Power's power purchase agreements

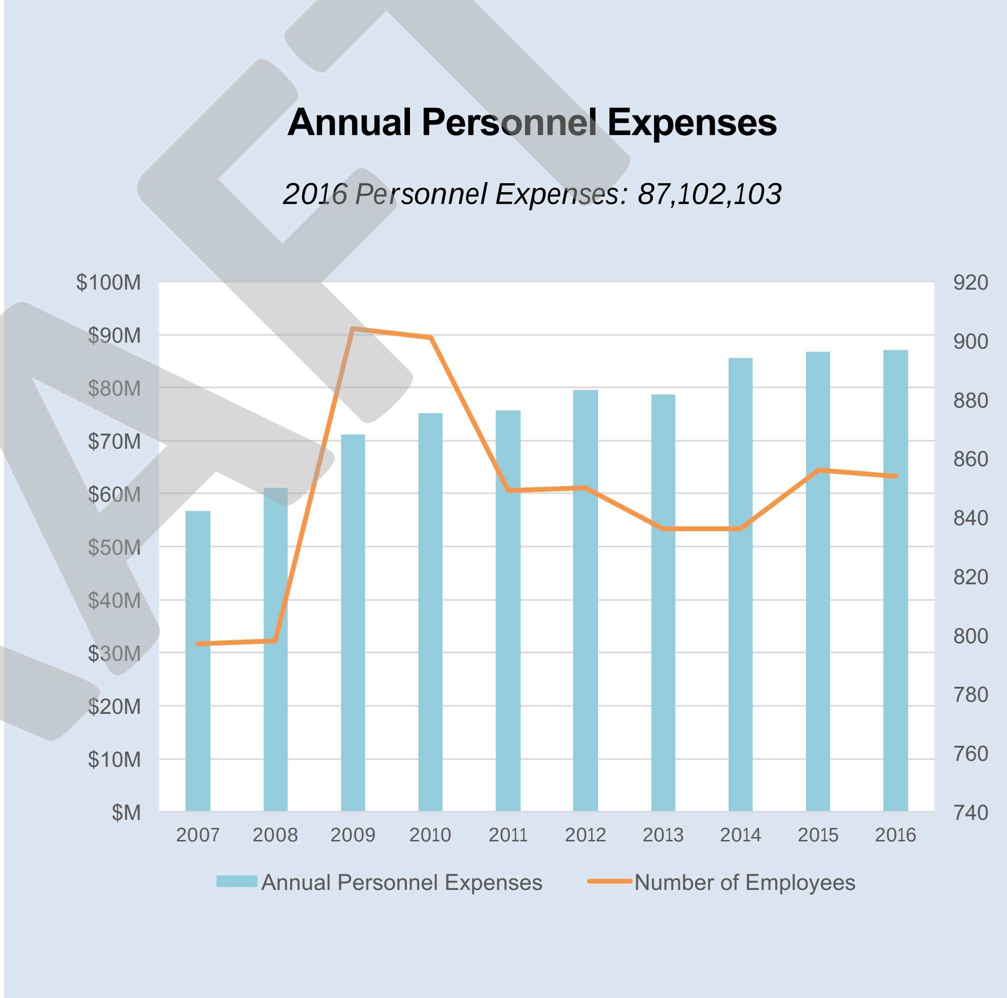
Personnel Expenses

With more than 179,000 customers across more than 180 square miles of service area, Tacoma Power requires a significant investment in staff and resources to make sure our customers will have low-cost, reliable electric services for years to come.

Currently we have approximately 830 employees. The number of full-time staff positions changes depending on the needs of the utility. In a given year, our plans to complete specific projects (or even the priority of those projects) can change from previous years. Our needs may even change depending on the season of the year. For example, we hire several temporary workers in the summer months to help operate our park facilities.

In this LRFP, we have forecast personnel expenses using the last five years as a proxy for future trends. This includes more than just salary. We also consider such things as increasing medical and benefit expenses, changing labor contract requirements, as well as anticipated wage increases for employees.

Over the last five years, personnel expenses have increased an average of 4% per year.



Capital Expenses are a large part of our annual budget.

Construction projects are capitalized (recorded as an asset on our balance sheet) when we place that asset in service. These assets have a defined benefit in future years and depreciate over time. For example, when a new power pole is placed in service, it is expected to be there for 40 years or more. When the asset is capitalized, the benefits are spread out over the 40-year life of that asset. Tacoma Power has over $1 billion in assets and having been around since 1893, we have quite a few aging assets that must be repaired or replaced.

Capital Expenses include such things as:

Buildings

Technology

Infrastructure

Capital Expenses, cont…

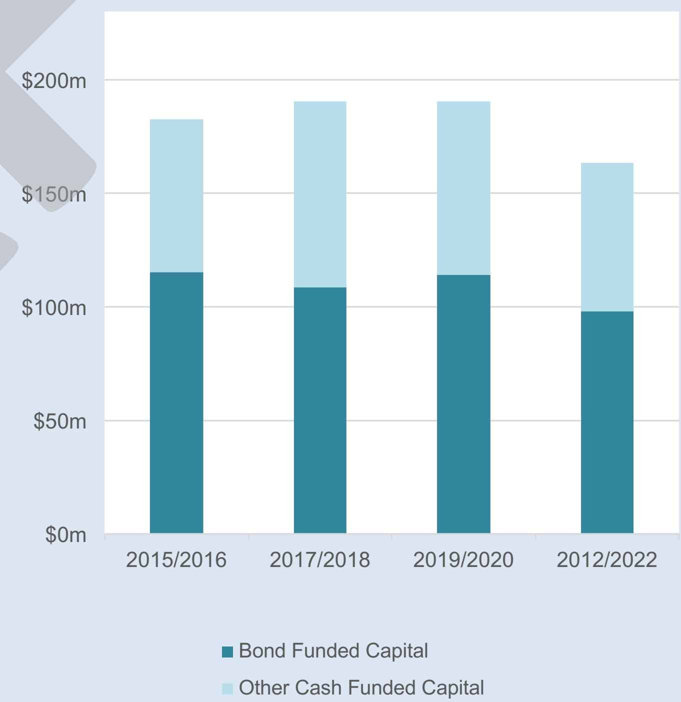
Tacoma Power's fish facilities are a good example of capital projects in the last biennium. To help meet the licensing requirements for owning and operating our hydroelectric dams, we built two new fish hatcheries near the Cushman hydroelectric facility. In fact, we have several restoration or habitat improvement projects that have either just been completed or are in process at each of our facilities.

A portion of our capital assets are in a special class referred to as **Additions and Replacements** (A&R). These are items necessary for the ongoing upkeep and maintenance of existing assets. An example of an A&R would be to replace a power pole that has reached the end of its life.

Most major projects are funded with long-term bonds, while assets with a shorter life or recurring additions and replacements are typically funded with revenue from Tacoma Power's Current Fund. The graph to the right shows our current projections for capital expenses in the future. See Section 7 for more detail on how we make this determination.

Each year, we forecast our ten-year capital plan by analyzing current and future projects that we're likely to pursue. The actual capital budget in each biennium is reviewed and projects are ranked by priority through the work of a **Capital Steering Committee** (CSC). The CSC meets regularly to review progress on capital projects, discuss new capital projects and determine the best way to fund these projects.

Current planned capital improvements



Preliminary Capital Expenses for 2017–2018

There are over 100 projects in our portfolio of capital improvements for this biennium. This is typically referred to as our **Capital Improvement Program (CIP)**.

Current projects in the program include:

Fish Facility Improvements
Dam Seismic Upgrades
Aging Transmission Tower Replacements
Energy Management System Upgrade
Technology Upgrades

The following table is an overview of all of the projects approved for the 2017/2018 biennium.

Project Type	Estimated Cost	Project Focus Description
Regulatory Projects	$39,533,000	Federal & State mandates including FERC, NERC/WECC and I-937. Projects include Dam safety related to seismic upgrades, Energy Conservation program, and compliance with environmental regulations for disposal of spoils
Natural Resources	$20,174,000	Construction of fish collection and passage systems to establish and support fish runs upstream of the Hydroelectric dams as required by FERC
Prevent Asset Failure	$18,372,000	Hydro facility and equipment maintenance and T&D structures and equipment replacement
Prevent Asset Failure and Asset Upgrades	$17,895,000	Modernization and improvement of equipment to prevent failure and meet current needs
System Reliability and Upgrades	$26,223,000	Upgrade and redesign of the Distribution system, Transmission system, and Substation facilities
Technology Projects	$31,952,000	Upgrade of existing technology tools and platforms, and development and installation of new technology systems
Additions and Replacements	$29,099,000	Ongoing replacement of infrastructure necessary for the operation of power system
Other	$7,226,000	Facility improvements, service division projects and unanticipated capital
Total	**$190,474,000**	

Other Operations & Maintenance Expenses

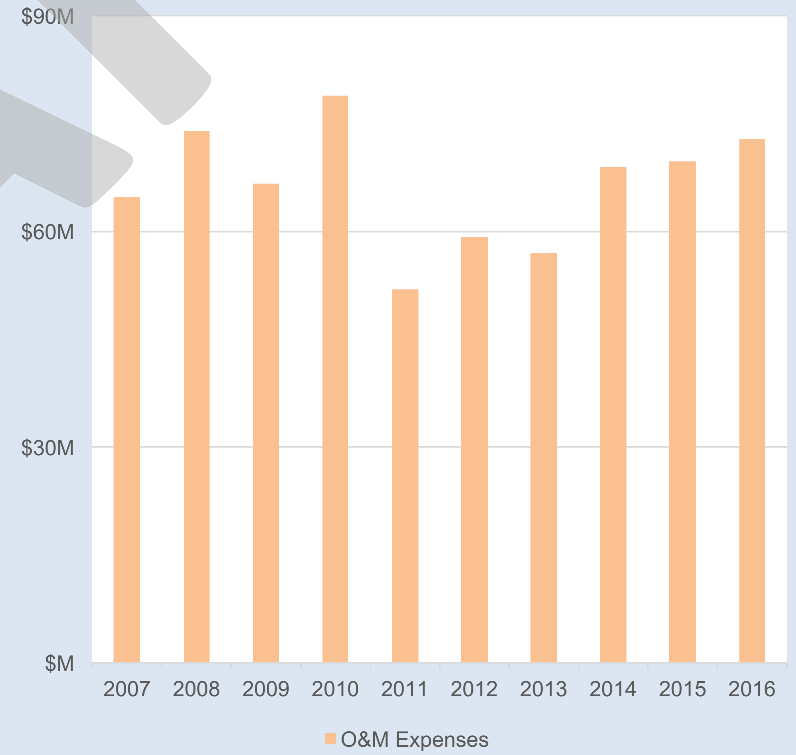
Another expense category is Other Operations and Maintenance Expenses (O&M) and covers expenses like professional service contracts, legal fees, office supplies, equipment, and non-capital project expenses.

Other O&M varies from year to year and is influenced by the type of projects we pursue. Some projects rely heavily on the assistance of outside organizations while others can be accomplished with current staff. Some projects are considered capital projects, funded by other sources, while others rely solely on O&M expenses to be completed.

Administrative and General (A&G) costs are included here, as well. A&G costs are charged to the areas that incur those costs. For capital projects, A&G expenses are added to the cost of assets through an allocation process. These costs will be recognized as depreciation expenses in the future. A&G acts as a credit to O&M expenses and new rates for A&G are determined prior to the start of each budget biennium. The rates are based on a formula that accounts for actual A&G expense charged in the previous biennium.

Annual Other O&M
Includes A&G expenses

Other O&M Expenses 2016: $72,838,982



Taxes

Yes, we have to pay taxes too. There are two primary taxes Tacoma Power pays. The first is called Gross Earnings Tax, and the current rate is 7.5% of the utility's gross earnings. We pay this tax to the City of Tacoma and it is approximately $30 million per year. The amount changes up or down depending on how much revenue Tacoma Power earns each year.

The Gross Earnings Tax is a source of revenue for the City of Tacoma to help the City maintain infrastructure and provide services critical to the quality of life, health, and safety of residents. An increase of 1.5% was approved by voters in 2015. That additional 1.5% will help the City of Tacoma to make needed street repairs around the City.

Secondly, Tacoma Power is subject to a State Public Utility Tax of 3.873%. This is approximately $15 million per year.

Since our customers pay 100% of our costs, taxes are also a part of the rates we charge.

Tacoma Power Revenue Sources

Retail Rates

The vast majority of Tacoma Power's revenue comes from the retail rates we charge our customers, which are based on different rate classes. Revisions and updates to rates and rate classes are approved by the Public Utility Board and Tacoma City Council.

Click! Network

Click! Network's cable and broadband services produce revenue that help offset telecommunication expenses each year.

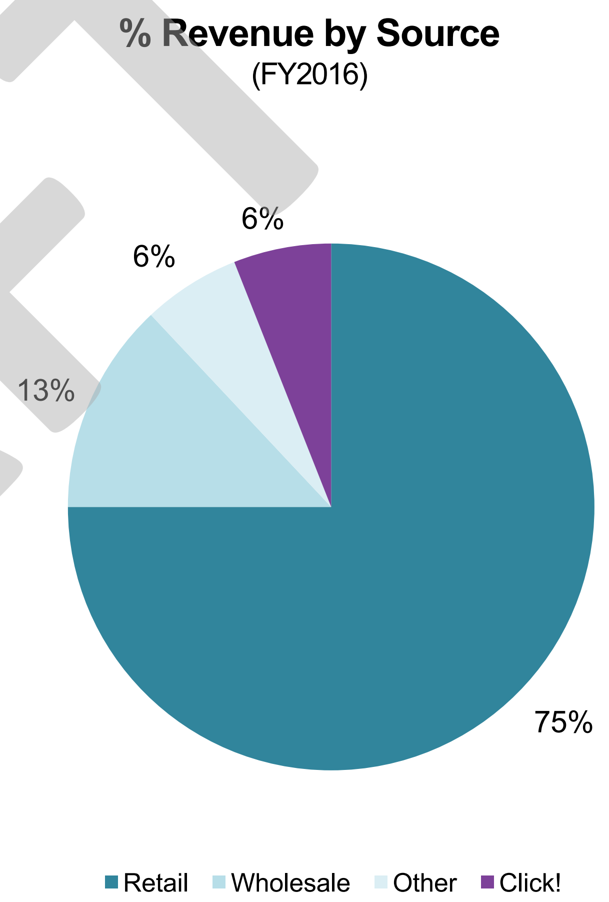
Other Revenues

Revenue received from all other Tacoma Power operations includes such things as parks and camping fees, service fees, electric property rental fees, and wholesale transmission sales.

Wholesale Revenue

We also generate revenue by selling surplus energy into the wholesale electric market. The amount we receive for these sales depends upon the time and quantity of energy sold as well as the market price of electricity. Similar to how the price of other commodities like natural gas, oil, or gold move up and down, the price for electricity changes constantly.

These variations can result in significant differences in the amount of wholesale revenue received each year. We explain some of the things that affect the market price for electricity in the risks section.



Customer Classes:

Different Customers Need Different Types of Services

Tacoma Power is a **“cost of service” utility,** which means that we charge our customers for what is needed to maintain, operate, and deliver electric services to where our customers need them. Staff performs a Cost of Service Analysis to determine the appropriate portion of revenue to recover from each customer class based on the types of services and infrastructure needed to deliver power to them.

Approximately seventy-five percent of our revenue comes from retail sales, and these consist of several different **customer classes.** These classes allow for a general allocation of the appropriate costs based on the different service needs of each customer type. The electric services needed to operate a traffic light are very different than the needs of Joint Base Lewis-McChord or a residential customer. Or another example is how our industrial customers do not use the distribution portion of our electric system so their rates do not include the costs to operate and maintain this portion of our system.

Each customer rate class has different rate structures and methods to calculate the monthly bill.

Customer Classes	% of 2016 Retail Revenue
Residential	47.67%
Small General	8.64%
General	30.58%
High Voltage General	5.58%
Contact Industrial	6.69%
Street and Traffic Lighting	0.43%
Private Off-Street Lighting	0.39%
2016 Total Retail Sales	**$320,583,231**

This table illustrates the percentage of total retail revenue contributed by each customer class for retail revenues in 2016.

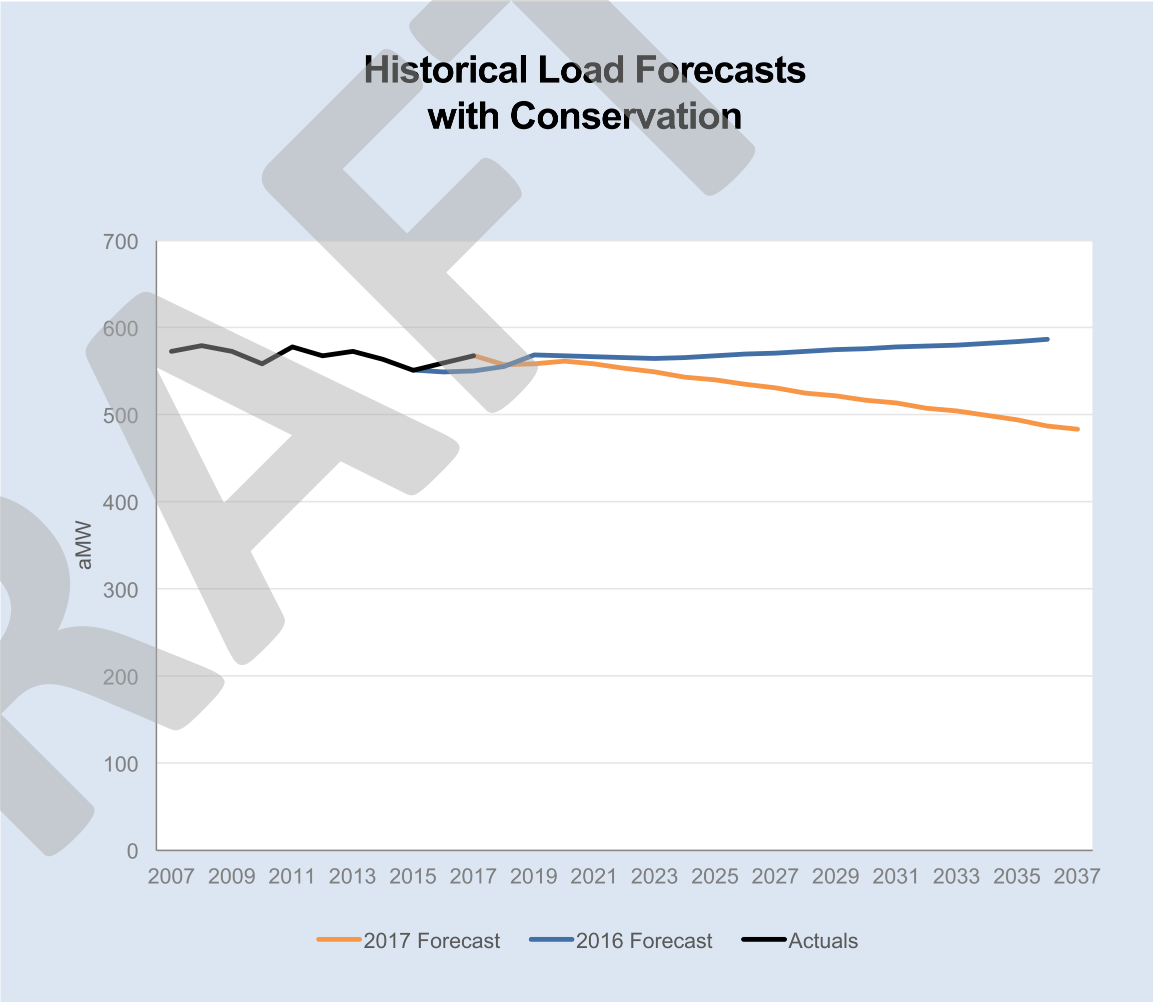
Forecasting Retail Growth

In order to forecast future revenue, we produce an annual load forecast. Load is the amount of power consumed by our customers, sometimes also referred to as demand. You can see from the chart that the latest forecast is lower than previous forecast. We're currently forecasting the slowest growth rate in the last decade.

The blue line in the chart below represents our current forecast, including conservation, for retail loads. The black line represents the actual load each year, while the orange line is our current forecast. We use this forecast for the base case analysis described in the next section.

In total, Tacoma Power's system average load is projected to decline at a rate of approximately 0.8% per year. This includes the utility's most recent information on the probability of new loads entering the service area.

Several factors could change the current trajectory, such as the overall economic conditions of the area, availability of incentives for developing industries, or new large loads.



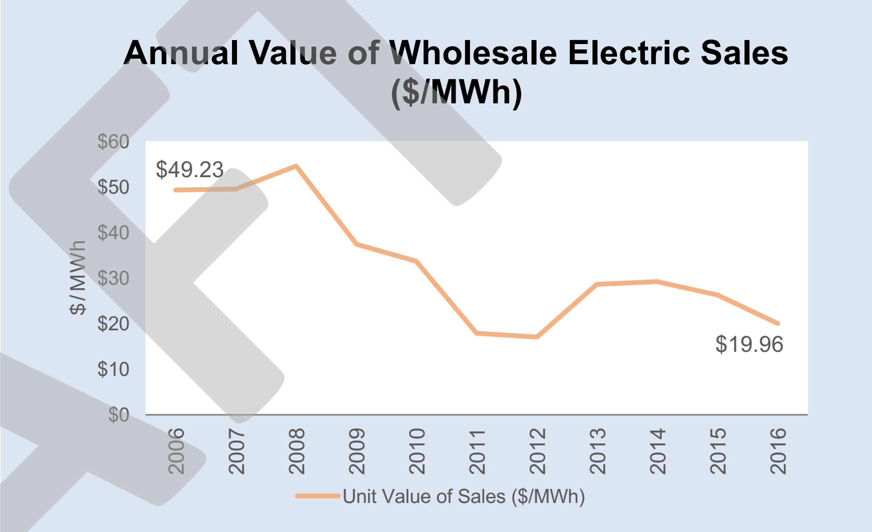
Reducing Rate Increases with Wholesale Revenue

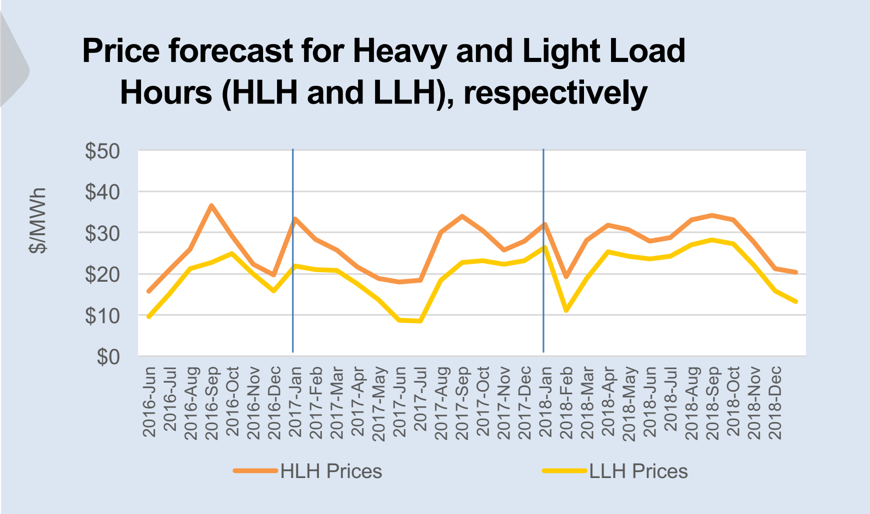
Sometimes we have an opportunity to sell surplus electricity in the wholesale electric market. We can have surplus for many reasons. One such situation would be after a significant rainfall event and we need to reduce the elevation of the reservoir behind the dam to meet safety requirements. We are generating more than our customers need, i.e. we have "surplus". We sell this surplus power to other electric companies or market participants that purchase it from us at the current market price.

This is one of the ways we keep retail rates lower than they otherwise would be. We use the revenue from surplus sales to offset future rate increases. Unfortunately, as you can see, our revenue from this source has been decreasing.

The potential value here is dependent on two factors that are out of our control: how much surplus electricity we have, and the price the market is willing to pay for that electricity. That makes forecasting our wholesale revenue kind of tricky.

Thirteen percent of our total revenue came from wholesale sales in 2016. Ten years ago, in 2006 24% of our revenue came from wholesale sales, but this is primarily because the average value for each MWh sold has been declining for several years. A portion of the reason for this decline is further explained in Section 5. The lower illustration shows a recent price forecast for Heavy and Light Load Hours, HLH and LLH respectively.





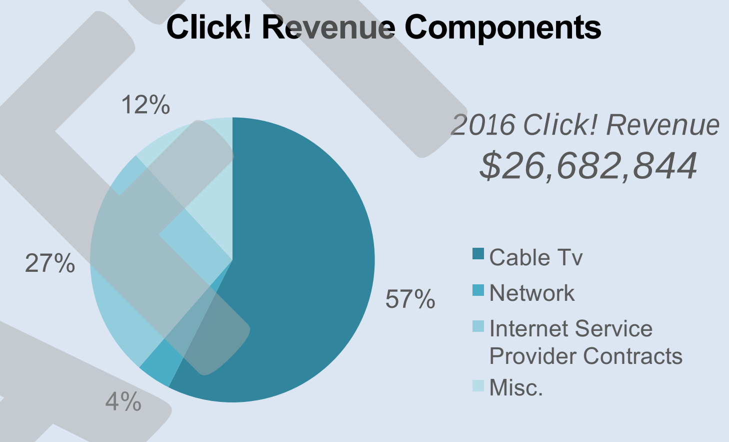
Click! Network Revenue

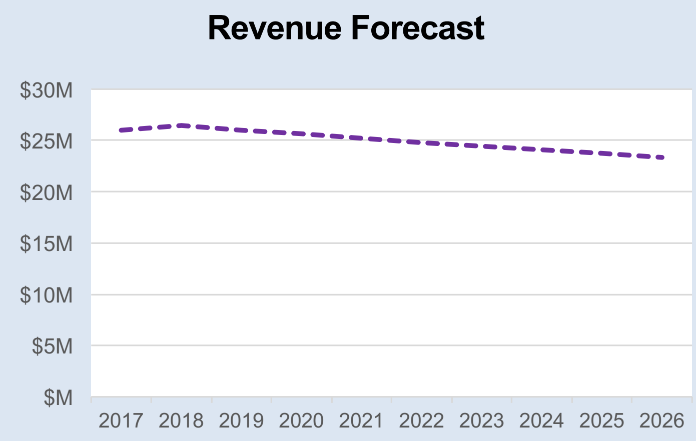
Click! Network is a multi-service broadband telecommunications provider and an operating section of Tacoma Power.

Click! is one of the largest municipally-owned and operated telecommunications systems in the country. Click! generates revenue from retail cable TV and wholesale high-speed internet services.

The chart to the upper right shows the breakdown between different cable and internet revenue components.

Click! is developing a new business plan for future operations. The revenue forecast in the lower right chart is based on the current operational model of Click!. It shows a gradual decline in total revenue and may change as the business plan develops. Click! represents approximately 6% of Tacoma Power's total revenue per year and this revenue offsets a large portion of Click!'s operational expenses.





Tacoma Power Credit Ratings

Recall from page 24, Tacoma Power is rated by three different rating agencies. Moody's Investors Service is one of the rating agencies that have published their methodology for analyzing utilities like Tacoma Power. Understanding their methodology helps interpret the rating agency process and align financial metrics with the agency's rating scale.

The items in the table to the right comprise the financial strength portion of Moody's rating. The financial strength components constitute a 30% weight toward the final rating and the scale is for a rated public power utility with generation.

In 2015, Tacoma Power used cash reserves to call the $122.135 million of the 2005B series of Bonds. This reduced our outstanding debt and helped improve our financial strength. The next few pages further illustrate how this transaction impacts the utility.

For more detail on how we set targets in these areas and manage to them, see the discussion of days liquidity and debt service coverage ratio in the next section.

The 2015 financing plan helped improve Tacoma Power's financial strength.

	Aaa	Aa	A
Adjusted Days Liquidity	≥ 250 Days	249 to 150 Days	149 to 90 Days
Adjusted Debt Service Coverage Ratio	≥ 2.5 x	2.49 x to ≥ 2.0 x	1.99 x to ≥ 1.5 x
Debt Ratio	< 25%	25% to < 50%	50% to < 75%

Adjusted Days Liquidity: Ratio of Current Days Cash on Hand, the ability to cover expenses with cash.

Debt Service Coverage Ratio: Ratio of cash flow available to pay debt service, relative to the annual debt service owed.

Debt Ratio: Ratio of total debt outstanding as a percentage of total Assets.

Tacoma Power	2012	2013	2014	2015	2016	2017*
Days Liquidity	**312**	**312**	**335**	**215**	**236**	**231**
Debt Service Coverage Ratio	**1.82**x	**1.88**x	**1.90**x	**2.01**x	**2.31**x	**2.66**x
Debt Ratio	**39**%	**39**%	**37**%	**29**%	**26**%	**29**%

* Estimated based on projections and actual results through August

Debt Repayment Schedule

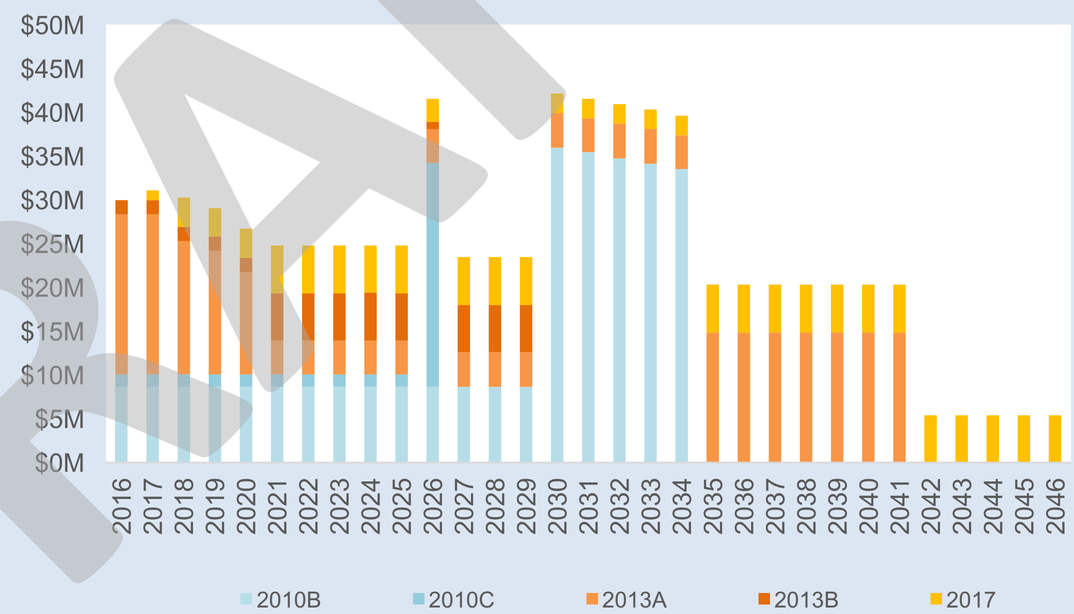
You'll probably notice that this chart isn't quite as flat as a 30-year mortgage. We'll discuss those spikes in the next few pages and again in Section 7: Funding the Plan.

We sell bonds to investors to help fund capital expenditures. You'll notice in the chart that there are A's, B's, and C's after the year the bond was issued. This means that when we issued the bonds we sold them in different tranches, or as separate portions with different terms, conditions and purposes.

When we make payments on our bonds, we pay a principal payment and an interest payment. These payments are due on January 1 and July 1 each year. The chart shows the combined annual principal and interest payments by bond. Closely managing the timing and payments of this portfolio maintains our financial strength.

Debt Service Overview

This chart shows the combined principal and interest payments due by Bond and arranged by year.



* Debt Portfolio shown on an accrual basis and incorporates a planed defeasance expected to be complete in October 2017.

A **financing plan** outlines steps to fund the most recently approved budget, maintaining and improving our financial strength.

Implementing a Financing Plan can lead to many important results, such as:

Increases or reductions to our total outstanding debt.

Changes to debt service payments, both timing and amounts.

Identification of future challenges, such as spikes in the debt repayment schedule that need to be addressed.

Ability to finance capital projects. Both on an interim basis or through long-term Bonds.

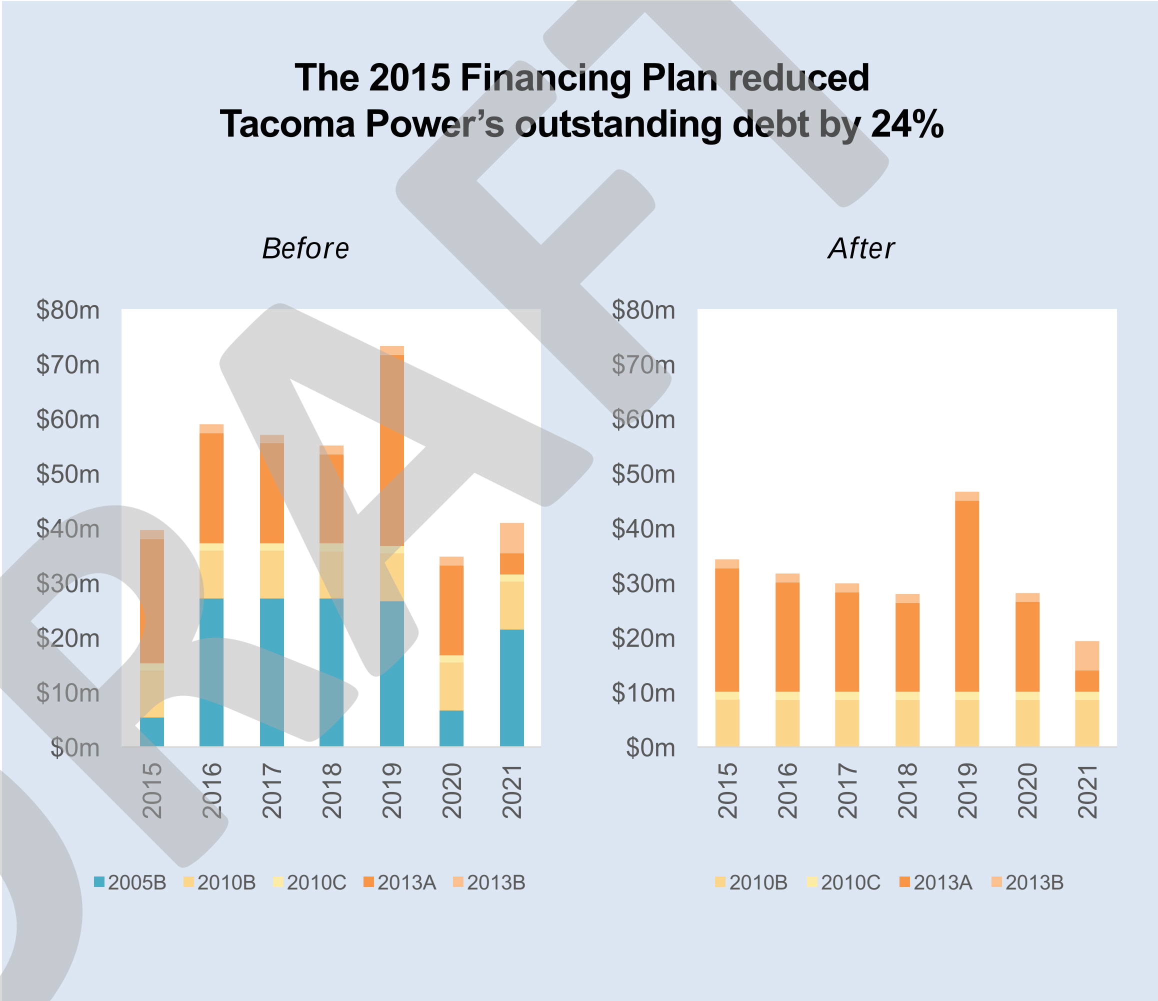
The next few pages show how some of the last two financing plans have impacted the utility.

Reducing Outstanding Debt

We called the remaining 2005B Bonds on July 1, 2015 using cash reserves totaling $122,135,000.

This is an example of how Tacoma Power has used surplus revenue from wholesale power sales to benefit our customers.

The debt reduction in 2015 lowered the amount needed to maintain our Debt Service Coverage Ratio and reduced the size of future rate increases. In 2016 we were able to keep our rates constant with a 0% rate increase, despite the pressures of declining revenues and increasing expenses.



Spikes in the Debt Repayment Schedule

The spikes are from the specific terms and conditions associated with the year a bond fund must be repaid.

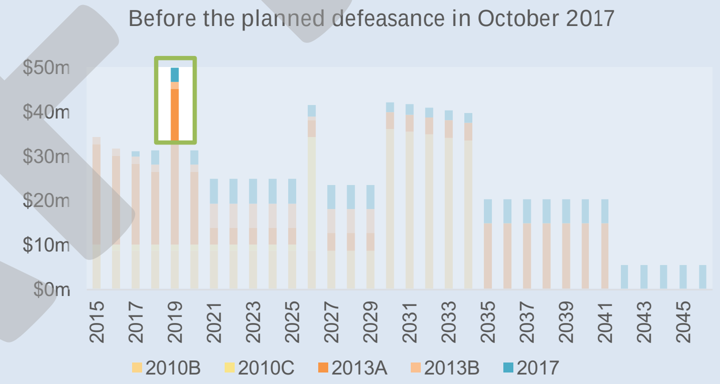
The first spike is related to a large principal payment due on January 1, 2020, for the 2013A Bonds. Tacoma Power issued the 2013 Bonds in two tranches (2013A and 2013B). The bonds were used to fund capital improvements during the 2013/2014 biennium and refund previous long-term bond issues.

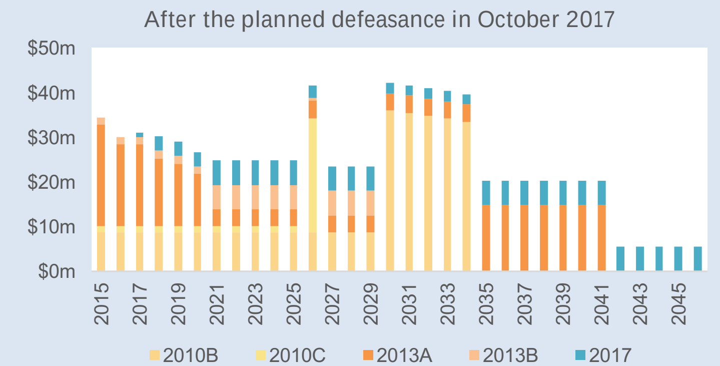
This single-year large principal payment, due in 2020, represents a notable challenge in our debt repayment schedule. We would need to significantly increase our revenue in that single year to maintain a reasonable debt service coverage ratio. In order to deal with this spike, Tacoma Power received approval from the Public Utility Board and City Council to **defease** up to $28 million in debt service payments.

The next repayment spikes begin in 2026, all related to the 2010 Bonds which were issued through a government program called Build America Bonds (2010B) and Clean Renewable Energy Bonds (2010C).

Those spikes are outside the scope of our current planning horizon, but we have already started thinking about how best to address them and will be developing a strategy in future Long-Range Financial Plans.

Opportunities and Challenges in Existing Debt Service





Short-term Debt

The chart on the previous slide doesn't show all of our debt. Eleven percent of our debt portfolio was short-term debt as of December 31, 2016.

When did we start taking on short-term debt? It was part of a plan to diversify and reduce our overall debt, implemented in 2015.

That plan included paying the remaining outstanding principal and interest payment on the 2005A Bonds and exercising an option to call the remaining 2005B Bonds. We used funds available in our reserve funds to complete this process.

In addition, we implemented two short-term variable rate Note Purchase Agreements:

$100 million Note Purchase Agreement with Wells Fargo

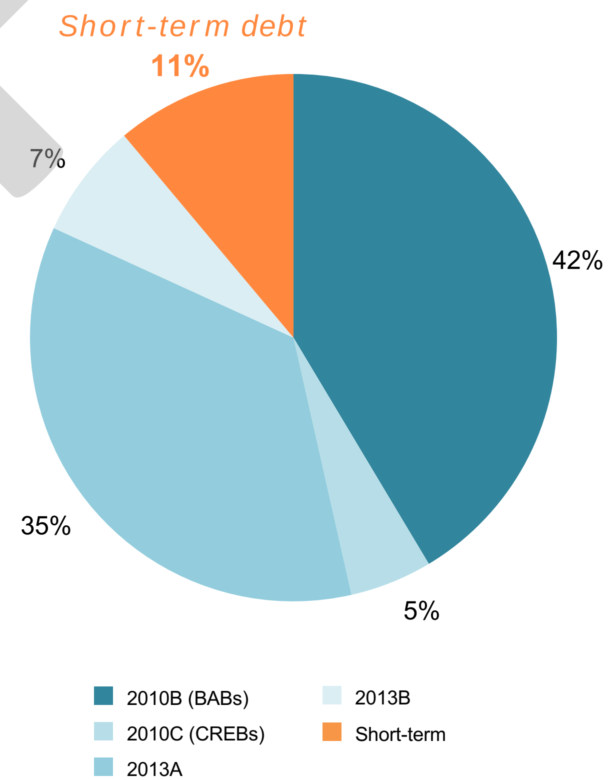
As of December 31, 2016, Tacoma Power had drawn $80,250,000 from the agreement. When we issued bonds in September 2017, we used the proceeds to pay $80 million back to Wells Fargo and now only have $250,000 outstanding. We will be increasing this amount before the end of 2017.

$25 million Note Purchase Agreement with Key Bank

Each of these Agreements helps us in different ways, which we will review on the next two pages.

How the short-term debt compares with the long-term Bonds

Debt Service Percentage of Total
as of December 31, 2016



Short-term Debt: Wells Fargo

Historically, we've used the proceeds of long-term bonds to fund capital improvements, but that strategy can result in long periods of time before the funds are fully spent. (Sometimes projects get delayed or priorities change after bonds have been issued.)

That's not ideal, because Tacoma Power is paying interest to bondholders on the borrowed money. And though unspent funds earn a small amount of interest while they are waiting to be spent, it's often less than the interest expense we are paying on the bonds themselves.

This funding Agreement with Wells Fargo was put in place in 2015. It gives us the opportunity to pay a lower fixed-rate interest fee on the unspent funds and a variable-rate fee on the funds that are spent. The combined rate of these fees is lower than the difference between the interest we previously earned on unspent bond funds and the interest we paid to bond holders.

Here's why that's a good strategy: Tacoma Power expects to spend approximately $100 million on bond-funded Capital Improvement Projects (CIP) in each future biennia. When we've drawn the full amount we need for these projects using the Wells Fargo agreement, like a line of credit, we'll issue long-term bonds to reimburse the Agreement with Wells Fargo. This fixes the interest rate for the remaining life of those capital projects. Then we can use the line of credit (again) to fund the CIP approved for future biennia.

In other words, this Agreement helps keep us from paying unnecessary interest on funds we're not ready to use yet. Between 2015 and 2017, we estimate approximately $8.9 million was saved as a result of this Agreement.

Wells Fargo Drawdown Direct Purchase Agreement

Commitment Amount:
$100,000,000

***Drawn Amount:**
$250,000

Start Date:
May 1, 2015

Term:
3 years

Purpose:
Interim Financing of Capital Projects

Our variable rate Note Purchase Agreement with Wells Fargo allows us to fund capital projects on an interim basis.

**Tacoma Power used the proceeds from the 2017 Bond issuance to return the drawn amount of $80,250,000 back to $250,000 on September 1, 2017*

Short-term Debt: Key Bank

This is another type of short-term debt, but different than the Wells Fargo Agreement. This facility is more of a "revolving credit" agreement, and Tacoma Power does not intend to draw funds from it, except when absolutely necessary.

So, why have it? Tacoma Power's financial liquidity increases and decreases throughout the normal course of business. See page 35 for more information.

Seasonal and operational variability can affect the utility's liquidity, the ability to access cash. Liquidity challenges can end up costing us more money so this agreement is a little bit of extra insurance to make sure we do not get too low in the low periods. The agreement allows us to keep our overall liquidity balance lower than we otherwise would and we can use more of our cash to benefit our customers.

The Key Bank Agreement gives us this additional flexibility in exchange for a low fixed-rate interest fee on the unused portion of the facility. If we did use the agreement we would pay a variable rate on the portion we borrowed, similar to the Wells Fargo agreement. We also have the ability to increase the amount we have access to with a short advanced notice, if needed.

In other words, this agreement gives us quick access to $25M, similar to a personal line of credit, if we need it in an emergency.

Key Bank Revolving Credit Facility

Commitment Amount:
$25,000,000 (with ability to increase to $50,000,000)

Drawn Amount:
$0

Start Date:
May 1, 2015

Term:
3 years

Purpose:
Interim Financing of Capital Projects

Our Note Purchase Agreement with Key Bank allows us to better manage liquidity targets on an interim basis.

Reserve Accounts

Bond Reserve Fund

When issuing bonds in previous years, Tacoma Power established a Bond Reserve Fund. The fund was created to pay for outstanding interest and principal payments in the event that the utility is unable to pay from revenues. The Bond Reserve Fund does not contribute to any of Tacoma Power's financial metrics, like days liquidity discussed in the next section.

The fund contains a combination of cash, investments, and surety policies and the size of the fund must remain sufficient to meet the Reserve Account requirements until the bonds are paid for. The determination for the size is based on the lesser of the following two requirements:

1. the maximum annual debt service payment in the debt portfolio, or
2. 125% of average annual debt service payments in our debt portfolio.

Tacoma Power's Bond Reserve Fund is sufficiently funded through 2020 when an existing surety policy will expire. Further analysis on this issue will be included in future versions of the LRFP.

Rate Stabilization Fund

The Rate Stabilization Fund (RSF) provides Tacoma Power with additional flexibility to meet financial needs. The fund was created using surplus wholesale revenue in 2010 and helps prevent the need for large rate changes outside of our normal rate setting processes.

Unlike the Bond Reserve Fund, the RSF does contribute to our financial metrics. The fund only contains cash from surplus revenue and that revenue has been deferred until the year it is transferred from the RSF into our Current Fund, the general account used to manage our operating expenses. The balance of the fund is considered part of our total Day's Liquidity balance, as listed in the next section.

Every year Tacoma Power evaluates the size of the fund to determine whether it should be increased or decreased. To-date, Tacoma Power has not drawn on the RSF. However, in 2001 the utility needed more than twice the current balance to address challenges in the wholesale electric market due to the energy crisis. We do not know when the next energy crisis will impact us, but this Fund helps us be more prepared for the unknown.

Historical Rate Stabilization Fund Balance

2009	2010	2011	2012-2016
$0	$10,000,000	$36,000,000	$48,000,000

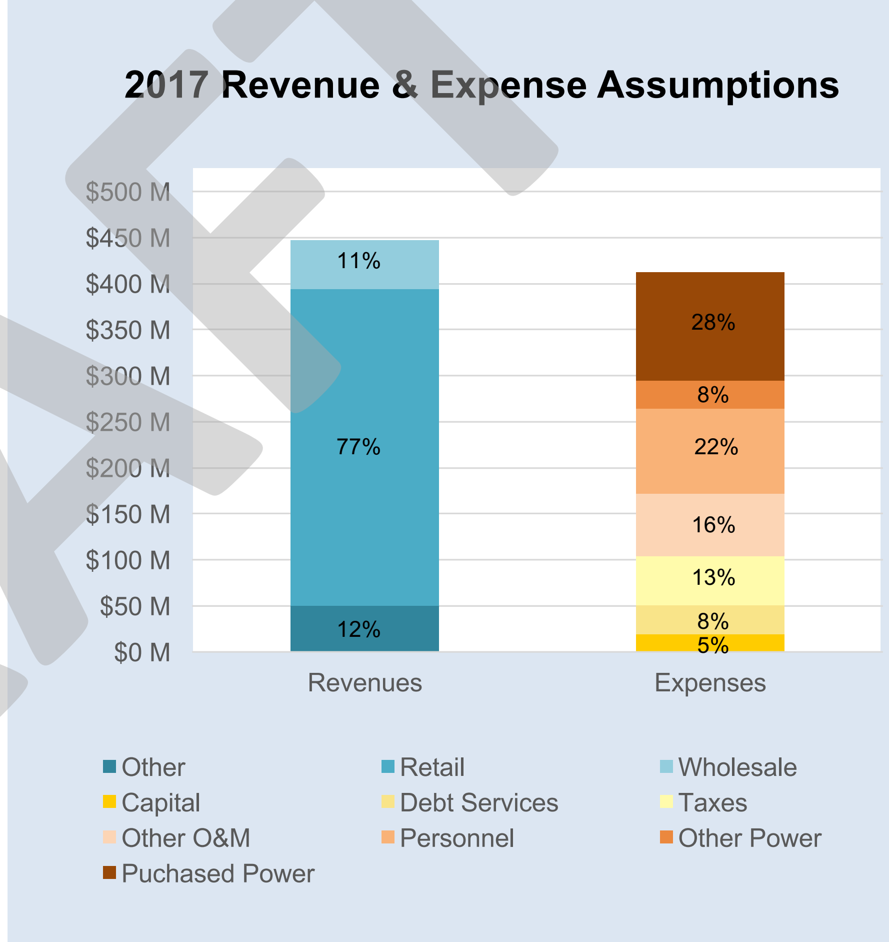
Bringing it all together

This slide brings all of the components explained in the background section into a side-by-side comparison. Revenues in 2017 are projected to be $446.5 million and Expenses are projected to be $411.8 million.

Typically you would expect to see a cost-of-service utility with equal revenue and expenses. However, Tacoma Power is currently forecasting to receive more revenue than our expenses in 2017. We will develop a plan to intentionally use some of this revenue to fund a portion of next biennium's expenses. We will also use some of this revenue for the defeasance described on page 44. These actions allow the utility to make the rate increase lower for customers than it otherwise would be.

It is a balancing act to keep the right amount of cash available to manage the operations of the utility and hold sufficient reserves to mitigate the many risks associated with our business. This is something we are always actively managing.

We use a financial model to analyze each component, compare assumptions, and determine a range of possible different financial outcomes. The model projects cash flows and other critical financial metrics over a 10-year time horizon. We can update the model to examine changes, test assumptions, or run scenarios that may impact the utility.



Section 4
Base Case

The model* against which we analyzed and compared every scenario in the LRFP.

TACOMA POWER
TACOMA PUBLIC UTILITIES

**Though we put great pains into developing a thorough model that accounts for most eventualities, we could not possibly have predicted New England's Super Bowl win or ~~La La Land's~~ Moonlight's Academy Award for Best Picture.*

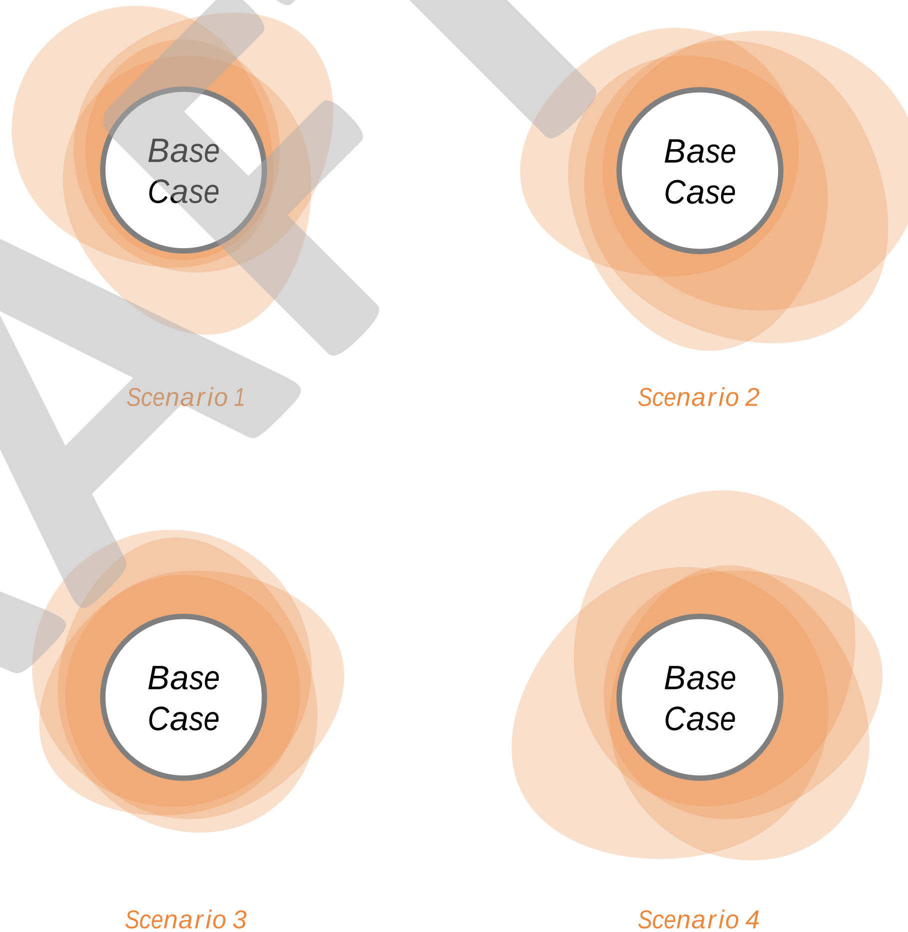
The Base Case

One of the purposes of the LRFP is to look at possible impacts of changes that may occur in the future. In order to do that successfully, we need a foundational example to compare our changes to. We call that example a **Base Case.**

Think of it as the control in a scientific experiment. In a document where we will change and adjust different components of the plan (**Scenarios**) to understand the resulting outcomes, the Base Case is the thing that doesn't change; **it's the foundation of the Long-Range Financial Plan.** The pictures to the right are a simple illustration of how the base case is always at the core and numerous other factors change around it to produce different scenarios.

In this plan the Base Case is the combination of Tacoma Power's financial performance through August 2017 and the background information you read about in the previous section.

The analysis of scenarios and risks described in the following sections get compared with the Base Case to provide a relative rate increase. This results from using projections for liquidity and debt service coverage to indicate what rate increases are needed to maintain financial targets.



Liquidity

In order to understand how managing financial metrics influences rate increases, it is important to explain the two metrics we use as guides. We have minimums that we must maintain but also have targets that are well above the minimums.

The first metric is days liquidity. This is an organization's ability to cover operating expenses over a period of time. Tacoma Power's target is to continually maintain enough liquidity to operate the utility for 180 days. This target helps us maintain AA-level financial metrics. Any forecasts that tell us we'll miss this target is something we will want to fully understand and explore, potentially leading to a rate increase.

Here's how we calculate liquidity:

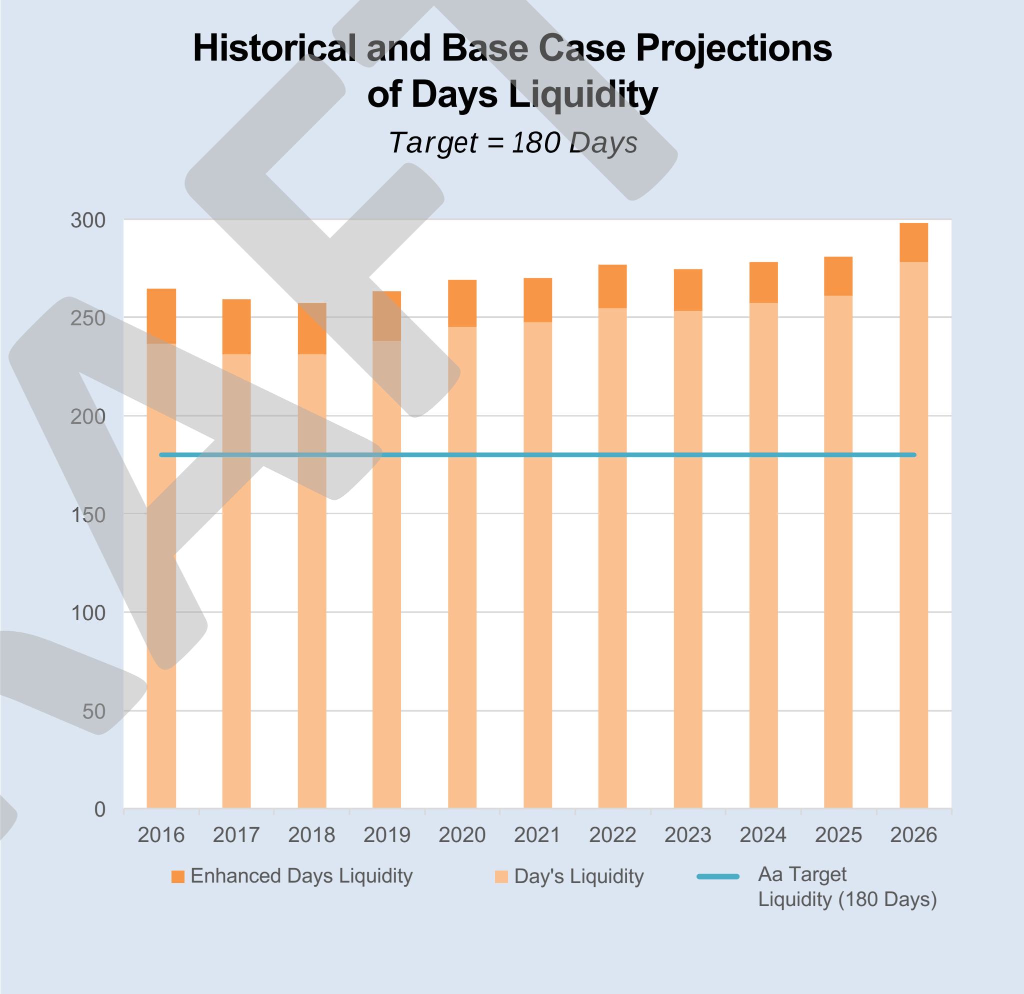
We add together all unrestricted cash and investments, including the Rate Stabilization Fund and acceptable Bank Lines

We multiply that number by 365 days

We then divide that total number by our annual operating expenses

That gives us the number of days of liquidity

As you can see from the chart, we are well above our target in the base case. These values change as we look at different scenarios on the following pages.



In the chart, the darker portion of the bars represent the additional liquidity we gained from the Key Bank Agreement you read about on Page 47.

Adjusted Debt Service Coverage

Another primary driver for rate increases is Tacoma Power's Debt Service Coverage Ratio, a measurement of our ability to repay annual debt obligations using Net Revenue.

Net Revenue is simply the revenue we have left over after we pay operating expenses.

Debt service coverage is our ability to pay our debts after we've paid our other operating expenses. We have a legal obligation to maintain net revenue at a level that equals 1.25 times (1.25x) our debt service payments but we target maintaining 2.0x to support our existing Bond ratings. If a projection shows that we wouldn't be able to maintain a 2.0x coverage ratio effectively, we would likely recommend a rate increase.

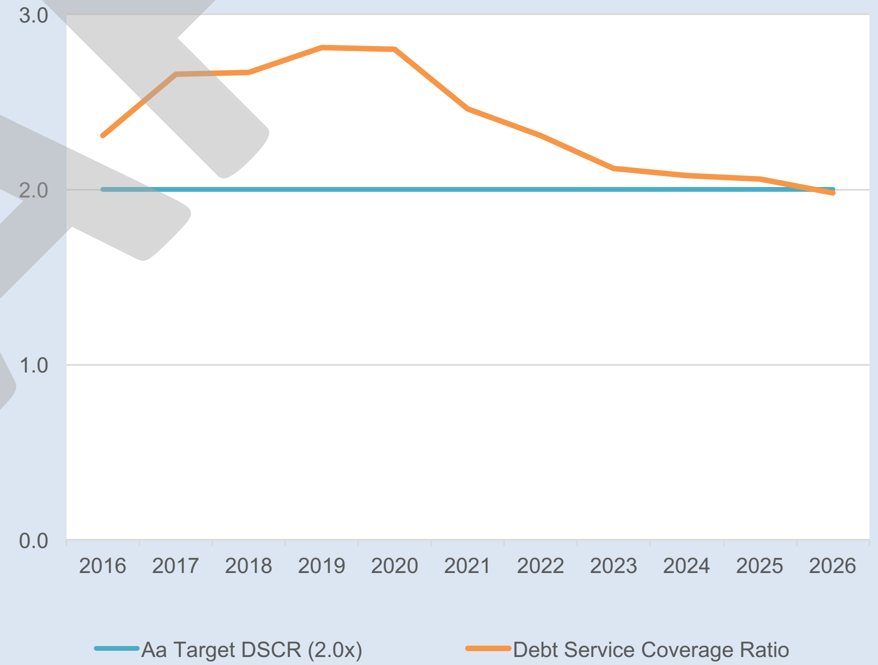
Here's how we calculate coverage:

> *We subtract our total expenses from our total revenue to determine Net Revenue*
>
> *We subtract transfers for Gross Earnings Taxes from Net Revenue*
>
> *We divide that number by our debt service payments due in that year, on an accrual basis, to determine the ratio of Net Revenue to Debt Service*

As you can see from the chart, we are above our target with this metric in the base case as well. Just like the days liquidity metric, these values change as we look at different scenarios on the following pages.

Historical and Base Case Projections of Adjusted Debt Service Coverage Ratio

Target = 2.0x

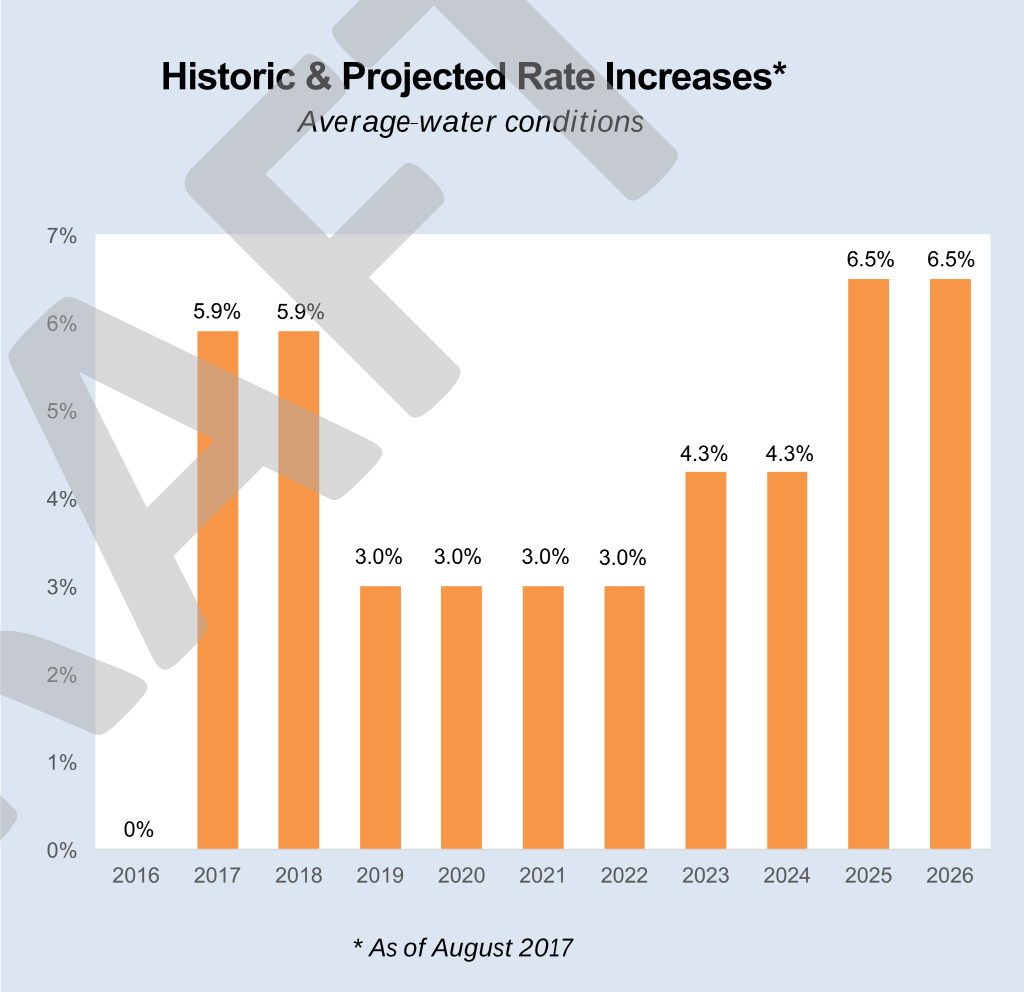


Projecting Rate Increases

If we plug all the projections from the background section into the model and assume average water conditions, we derive the picture to the right in order to maintain Tacoma Power's target liquidity and debt service coverage in future years.

In the next section, we are going to test the sensitivity of these projections by changing some of the inputs into the model. The projected rate increases will increase or decrease depending on the element changed, but the changes will always be compared with the rate increases listed here as the base case.

It is important to remember that these are only projections and have not been recommended or approved by anyone. Something can happen today that significantly impacts these projections, but at the time that this plan was published, this was our best forecast for the future.



Section 5
Risk Factors

There are things we can control and things we can't control. In a Long-Range Financial Plan, we try to quantify and predict* as many of those things as we can.

TACOMA POWER
TACOMA PUBLIC UTILITIES

**For instance, we can't control you, but we did predict (while we were writing this) that you would turn the page to read about risk factors.*

Internal and External Risk Factors

Risk can have an adverse impact on our finances, so it's essential to understand both the internal and external factors. Even though some factors may be out of our control, we can still develop effective strategies to address and mitigate the impacts.

In many cases, it is these risks that we use to change the inputs of our financial model so that we can analyze the potential range of outcomes related.

We cannot list all the risks in this plan, but this summary should provide a good overview of the most significant ones.

Risk factors can include:

External

- *Weather*
- *Wholesale Price Volatility*
- *Economic Downturn*
- *Regulatory Changes*
- *Environmental Regulations*
- *Customer Expectations*

Internal

- *Compliance with Regulatory Mandates*
- *Technology Changes*
- *Aging Infrastructure*
- *Aging Workforce*

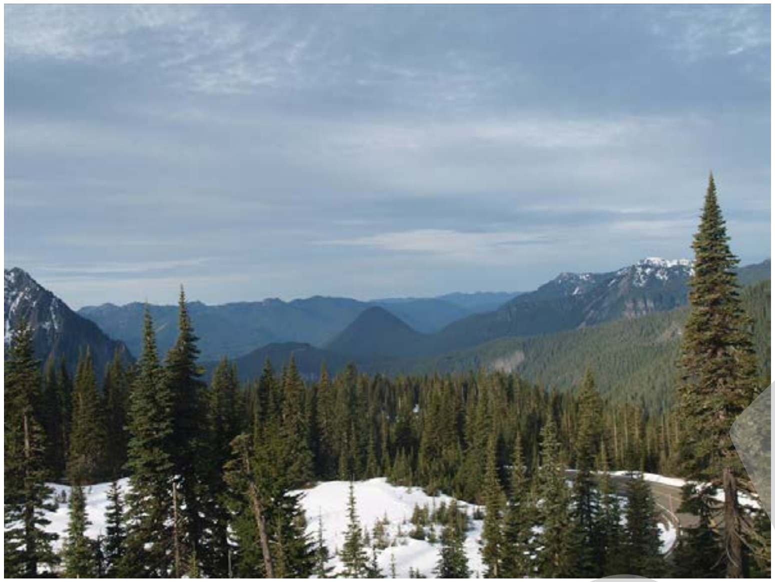
In this chapter, we'll investigate:

Internal & External Risk

Weather

Policy or Regulatory Impacts

Market Changes



Mt. Rainier
Mar 2015

Mt. Rainier
Mar 2017

Weather Risk

Weather is a big external risk factor, and one that is very challenging to predict.

Weather conditions significantly impact both how much electricity our customers demand and the price of electricity in the wholesale market. In extremely cold or hot weather, people naturally increase the use of heating and cooling systems, creating more demand for energy. This changes the amount we sell or purchase in the wholesale market.

Weather also influences natural gas prices. As with electricity, the price of natural gas also fluctuates with supply and demand. Because natural gas turbines are widely used to generate electricity, these generators are often the least-cost resource in setting the electricity price in the wholesale electric market.

Tacoma Power must be prepared to meet our customers' needs during prolonged periods of extreme hot or cold. In addition to those extreme events, we also need to predict overall changes in weather patterns from one year to the next. And that's no small task.

The pictures illustrate how different the snowpack can be from year to year.

* Photos used with permission from the US National Park Service

Hydrology, by Overall Inflow

Hydrology relates to the study of the movement of water. We need to know a lot about hydrology because most of the electricity we provide to our customers relies on water.

> *Tacoma Power receives the majority of its power supply from hydroelectric dams.*
>
> *These dams, in turn, rely on streamflow into the reservoirs behind the dam to generate electricity.*
>
> *Stream flows are dependent on rainfall and snowpack, and this can vary significantly from year to year (as we saw on page 52).*
>
> *Yearly variations in snowpack each year leads to different amounts of runoff in the spring and early summer.*

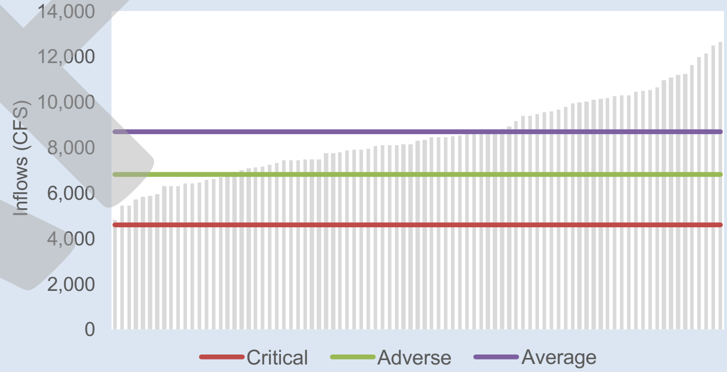
To help us predict the amount of power we'll get from hydroelectric dams, we use a historical record to forecast the probability of future events. Some of these records date back to 1929 or earlier.

The lowest point on our chart, called a **Critical Water** year, is determined by the amount of water that came into the reservoir during the lowest year on record. There's a very low probability that this will happen again, so we often use this as a planning standard. In other words, if we can meet customer needs during a year with a lowest-in-history level of water inflows, then there's a good chance we can meet customer needs all year long. Recall, customer needs at any one moment have to match with what our generators are producing in that same moment.

Similarly, we use **Adverse Water** year and a **Average Water** year for planning and forecasting our financial performance.

Total Tacoma System Inflows

Annual Average 1929–2016
(sorted from least to most)



Water Planning Standards

Critical: Inflows similar to lowest recorded historical year.

Adverse: Inflows similar to lowest 25% of recorded historical years. We expect this outcome to occur one out of every four years.

Average: Inflows similar to the average of all previously recorded historical water flow years. We expect this outcome to occur one out of every two years.

Hydrology, by Basin

On the previous page, we looked at hydrology risk on a system-wide basis, especially how Tacoma Power manages the variability with different planning standards.

We operate several different hydroelectric projects:

Cowlitz
Cushman
Hood Street
Nisqually
Wynoochee

We also receive power through Long-Term Power Sales Agreements with:

Bonneville Power Administration

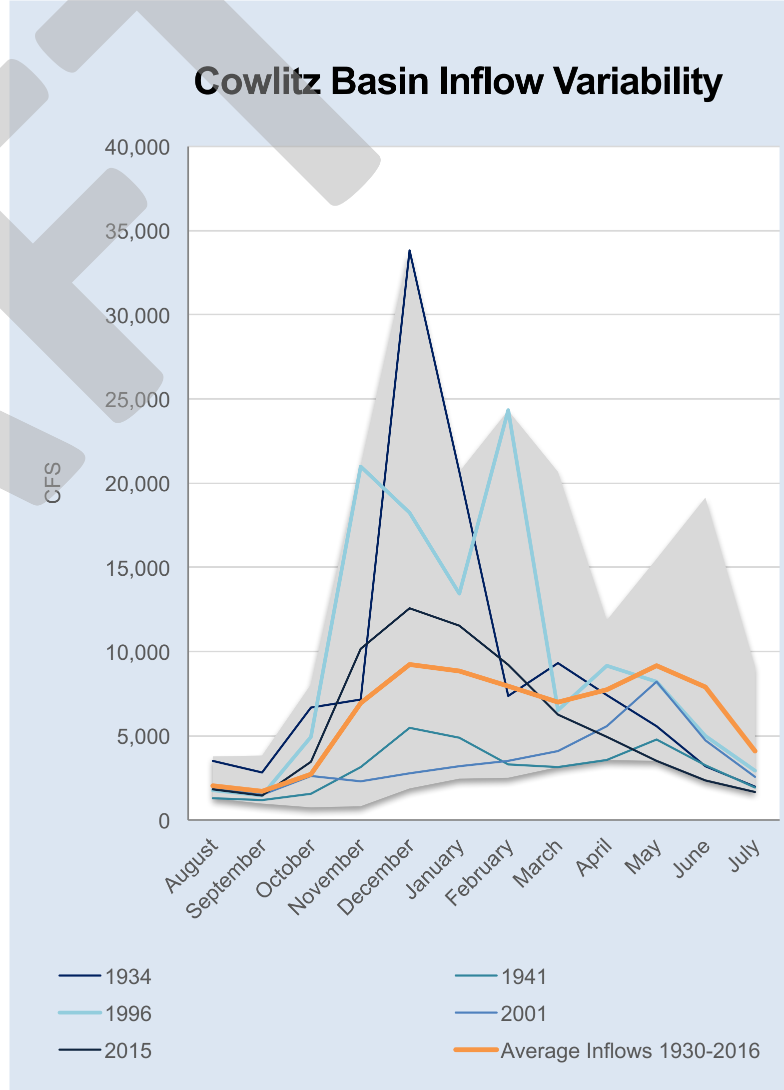
Grant County PUD

Columbia Basin Hydropower

All of these projects can have significant variability in inflows from one project to another or from one season to the next, depending upon temperature, rainfall, and snowfall throughout the year.

The chart to the right illustrates the monthly variability of inflows into just one project: the utility's Cowlitz Basin (Mossyrock Dam). The orange line illustrates the average and the shaded orange area depicts the range of historical occurrences. Sometimes years like 2015 occur, whereby there were several drier than expected months, and the overall range is expanded.

This variability by project, along with other licensing requirements, should give you an idea of the complexity involved with forecasting hydrology.

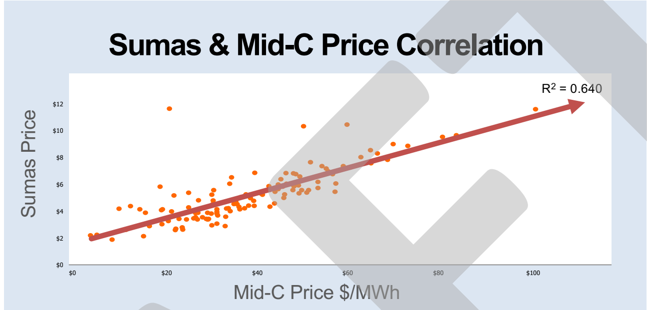


Natural Gas

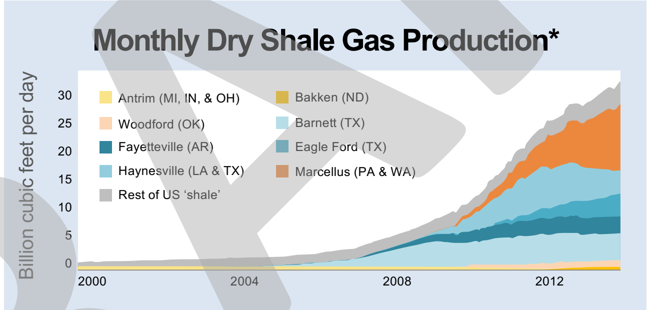
Few things influence the price of electricity on the Wholesale Power Market more than the price of natural gas.

The chart at the upper right illustrates the close correlation between the price of natural gas at Sumas and the price of electricity at the Mid-Columbia trading hub. It's not a perfect correlation. There are periods of time, or seasons, when reservoir inflows are higher than normal and the oversupply of generation can also have a heavy influence on power prices—but the connection is strong enough to help us make predictions.

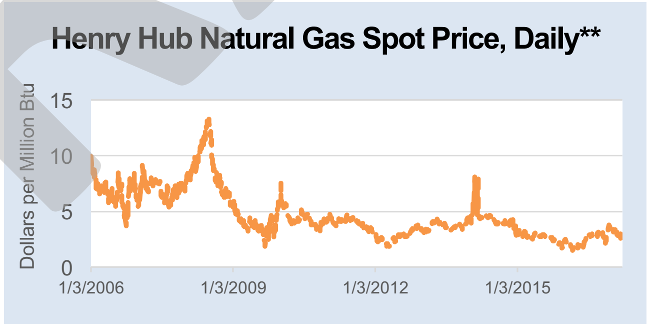
We incorporate the Natural Gas price forecast into our model for determining anticipated revenues from wholesale electric sales.



These charts help in providing a reasonable explanation for the current depression of wholesale power prices compared to previous years.



Shale gas production has ramped up significantly in recent years and has added to the total amount of natural gas in the marketplace.



That increase in natural gas production, starting in 2006, corresponds with a downward trend in natural gas prices during the same period.

* *Source: EIA derived from state administrative data collected by DrillingInfo Inc. Data are through November 2013 and represent EIA's official shale gas estimates, but are not survey data. State abbreviations indicate primary state(s).*

** *Source: U.S. Energy Information Administration*

Evolution of the Wholesale Market

As the energy market turns its attention toward renewable resources, we must consider its resulting transformation (and its additional complexities) in our LRFP.

Washington's voters approved a policy initiative to generate at least 15 percent of its major utility energy needs with qualifying renewable resources by 2020. Many other states have similar initiatives. California has a goal of meeting 50 percent of its energy needs with renewable power by 2030.

As utilities acquire renewable resources, their power supply portfolio evolves. New renewables often replace coal, nuclear, or thermal resources. Many of these resources operate without the relative consistency throughout the day as traditional "baseload resources." Baseload resources are ones that operate at the same level in all hours of the day. They don't fluctuate very much and are relatively easy to manage on an hourly basis. Solar or wind resources only operate according to how much sun there is or how hard the wind is blowing, so we call them "intermittent resources." They require more resources to effectively manage.

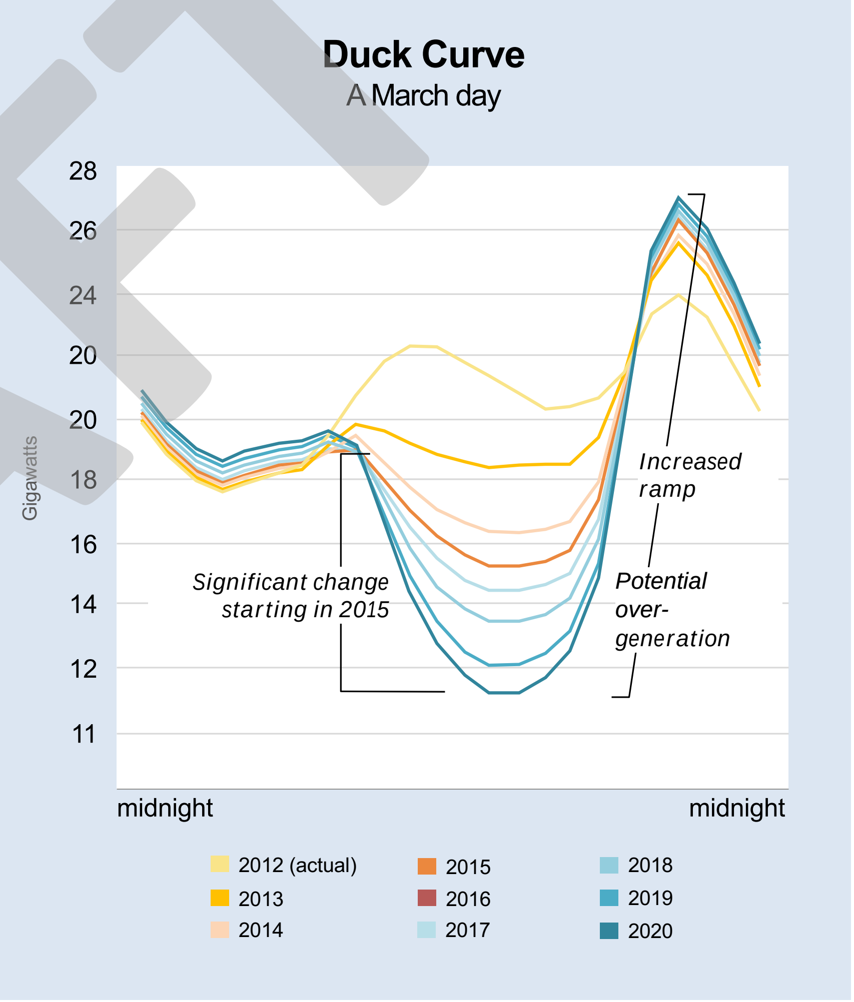
Evolution of the Wholesale Market (Cont.)

A few years ago the California Independent System Operator (CAISO), an entity that oversees the operation for portions of the California power system, published a paper forecasting the effects of increasing solar generation. This curve became know as the “Duck Curve” because the shape of the load resembles a duck. The curve illustrates how newly constructed solar resources will reduce the amount of load served during the daytime hours when solar energy is produced. As the sun sets and people return home from work, the demand for power steeply increases. The demand for electricity is increasing while the resources supplying the need are turning off. As more solar resources are constructed, the supply and demand difference gets steeper In order to meet the needs of the electricity grid, a different type of resource will need to work in coordination with the solar generation.

In addition, the value of power during the daytime hours will be much less than it is today. A resource that can start up quickly and meet peak demands will likely be more valuable than it is today.

This is only one example of how the market is transforming, but it provides a good illustration of its many complexities.

As new resources are constructed and added to the power supply of the region, new challenges emerge. Those challenges have an effect on the supply and demand for wholesale power. In some cases, will fundamentally change the market forever.



Regulatory Changes

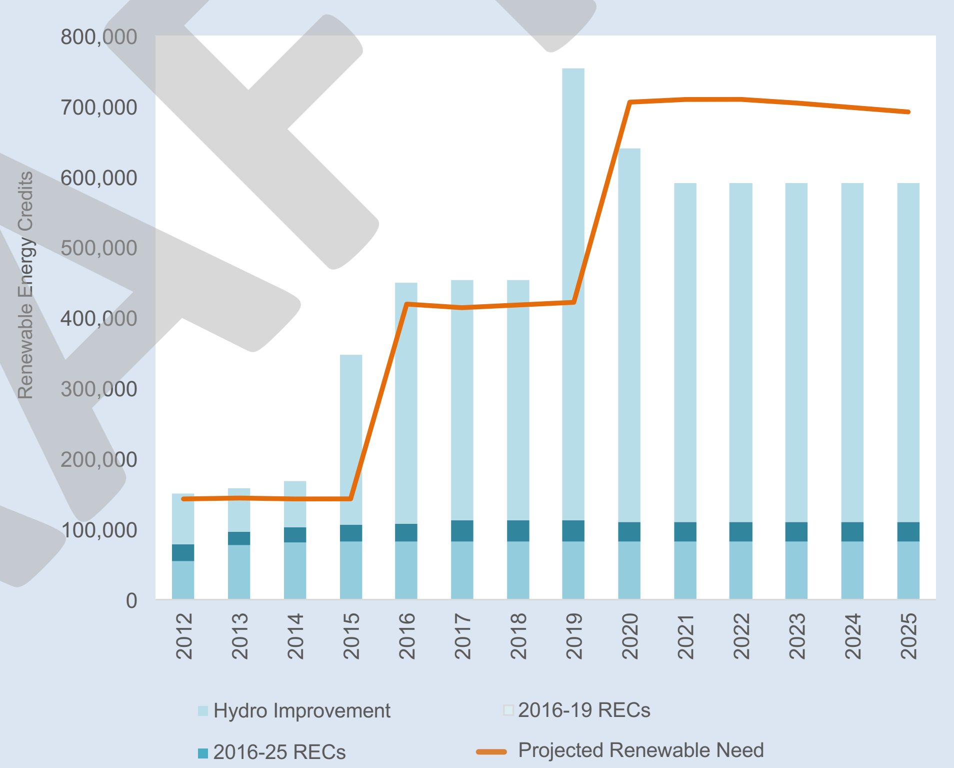
Regulatory changes represent another risk factor. They can occur at the national, regional, state, or local level, and Tacoma Power actively participates in each of these forums. The utility proactively advocates for the interests of customers and endeavors to shape changes that may impact finances or operations.

The adoption of the Energy Independence Act or Washington Ballot Initiative-937, is an example of a recent regulatory change that has impacted the utility. Among other things, the Act requires that by 2020 Tacoma Power obtain 15 percent of its customer's electricity needs from qualifying renewable sources. The requirement escalates in incremental steps, requiring 3 percent, 9 percent, and 15 percent by 2012, 2016, and 2020, respectively.

When qualifying renewable resources generate electricity they not only produce power but they also get credit for producing renewable energy. This credit is a Renewable Energy Certificate or REC. The State of Washington has an approved list of resources that meet the criteria to receive RECs. New hydro projects or improvements to hydro projects qualify to receive RECs but existing hydro prior to 1999 does not qualify.

The chart illustrates Tacoma Power's compliance with this requirement. Note that if we have extra RECs at the end of the year, we are able to transfer surplus RECs from one year to the following year. This strategy has allowed to us to be fully in compliance with the Energy Imbalance Act since its inception.

Current Renewable Compliance Status



Reliability Standards

The Reliability Standards developed by the North American Electric Reliability Corporation (NERC) are another major area of regulatory compliance.

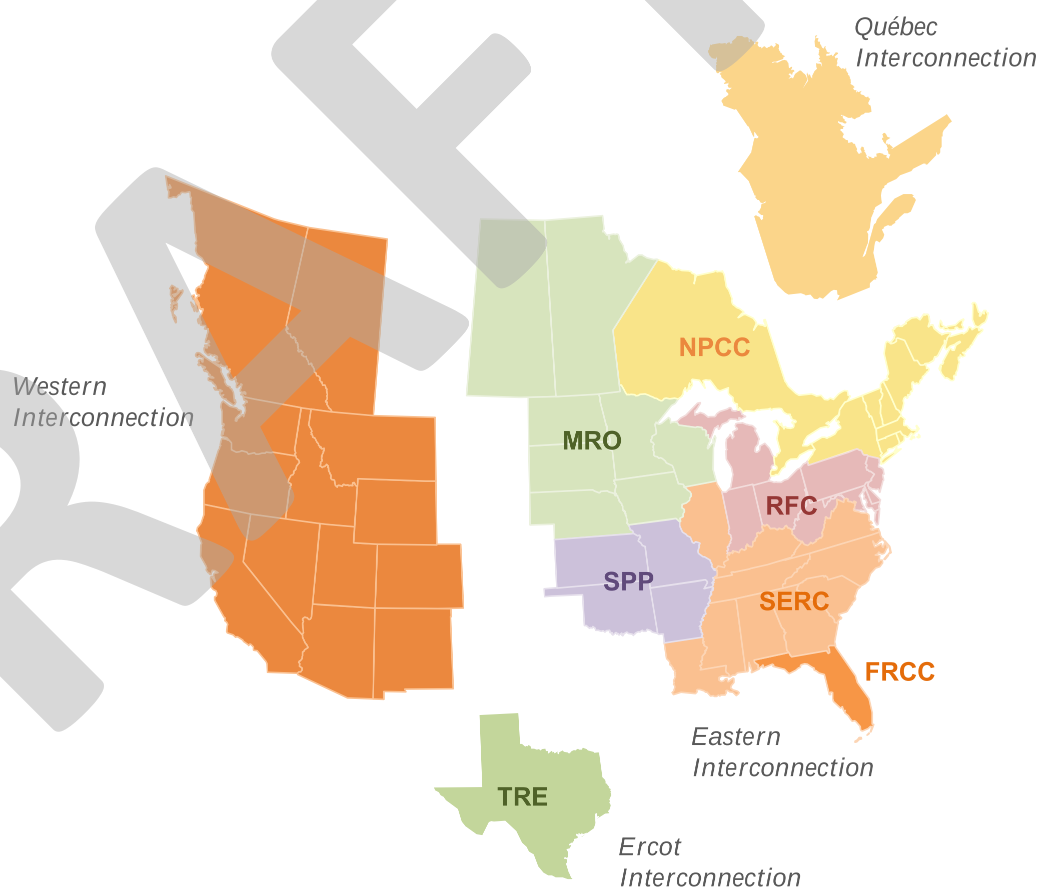
NERC oversees and regulates the reliability of the electric system in North America.

NERC is divided into regions, and Tacoma Power is a member of the Western Electricity Coordinating Council (WECC). WECC is the regional entity responsible for monitoring and enforcing standards in the western interconnection.

Reliability Standards are continually evolving as new threats emerge or better information about existing standards arise. It is important to remain in compliance with the standards because entities found to be in violation of specific standards can face fines of as much as $1 million dollars a day.

The purpose of the standards is to ensure grid reliability so that major blackouts like the one that occurred in 2003 do not happen again.

NERC Interconnections

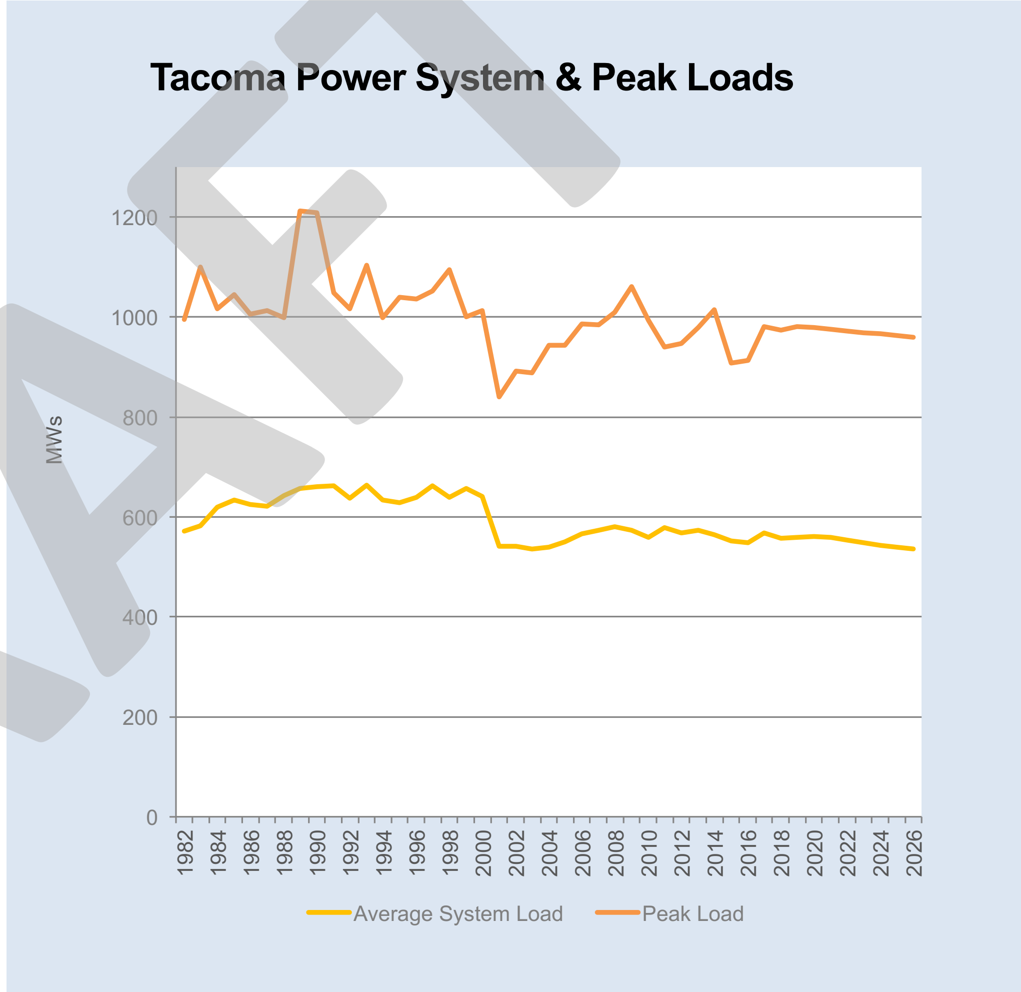


Economic Downturn

Over 75% of Tacoma Power's revenue comes from retail loads. In an economic downturn, or recession, the economy slows down and Tacoma Power's retail load can be at risk. A slower economy often results in little to no new business growth. That means it's less likely for new businesses to start or for existing businesses to grow. In extended recessionary periods, existing businesses can actually shrink or be forced to shut their doors. Depending on the size of the customer, loss of retail loads can have a significant impact on Tacoma Power.

At one point in the utility's history, several large industrial customers had to close their businesses. Since Tacoma Power is a **cost-of-service utility**, those costs had to then be recovered from fewer customers. Whenever this happens, rates must be increased or costs must be reduced through such things as layoffs or reduction in services provided.

The chart to the right illustrates the actual and projected growth and decline of average and peak customer loads since 1982.



Decreasing Retail Loads

Nationally, electric companies are experiencing a decline in consumption. There are many different reasons for this but one that resonates with many people has to do with changing technology. As the picture below illustrates, the common everyday light bulb has changed significantly over time. It is difficult to buy a traditional incandescent bulb anymore and often LED bulbs are cheaper for consumers when given the option.

What happens when you replace an incandescent bulb with an LED is that you end up using less electricity. This is a good thing and we actually help people do this! Check out the existing list of programs that our customers can take advantage of.

However, for an organization that sells electricity this means that Tacoma Power receives less revenue every time a customer installs a more efficient light bulb. Its not just light bulbs though. There are insulation upgrades, heating upgrades and many other ways customers are reducing their consumption. In fact, building standards and codes are being updated all the time and more efficient buildings and infrastructure are replacing less efficient buildings.

Additionally, customers are becoming more aware and interested in ways to modify their energy consumption and save money. All of this adds up to a steadily declining retail load forecast. This was one of the reasons for our last rate increase in April 2017 and a challenge we will be continuing to address moving forward.

Section 6
Impact Analysis

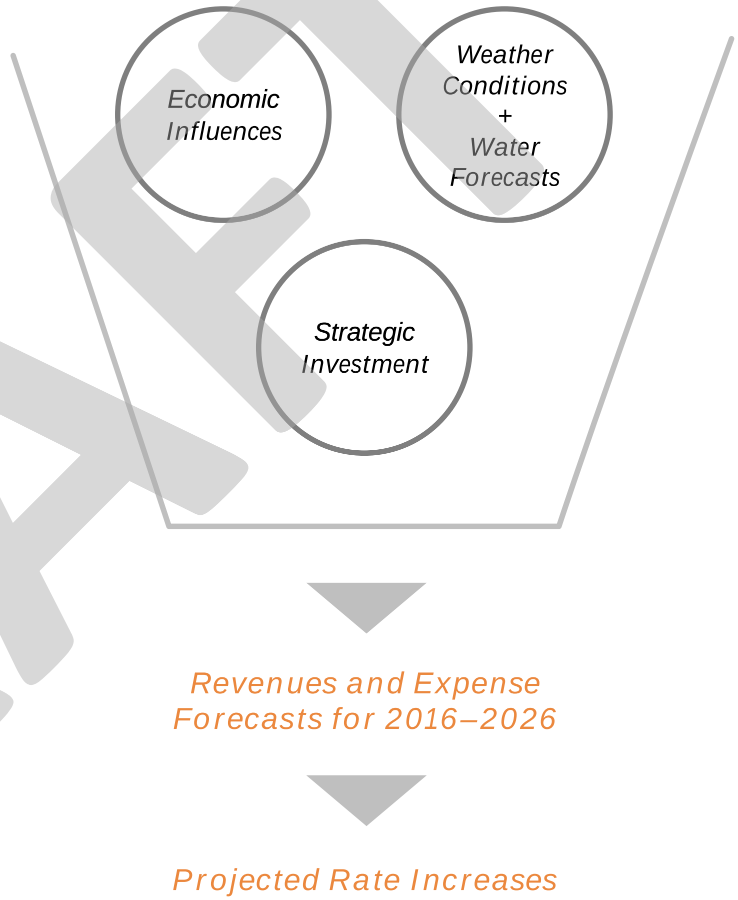
How different scenarios will likely impact* the bottom line.

**This is the main course; the stuff you really came here to read.*

Financial Risk Analysis

Given the risk factors you read about in the previous section, Tacoma Power faces financial variability and uncertainty during the period covered by this LRFP. Analyzing the sensitivity from the risk factors can help improve Tacoma Power's ability to manage the financial impact of these risks. Let's think of those risks in three categories:

> *One of the foremost risk categories is weather conditions, which creates the potential for diminished revenue.*
>
> *Economic influences in the region can either increase revenues through new business developments or reduce usage through the loss of customers.*
>
> *Finally, Tacoma Power is reviewing strategic investment decisions and alternatives. These may result in changes to the magnitude and timing of cash flow needed to sustain the financial strength of the utility.*



Financial Risk Analysis (Cont.)

The table to the right summarizes how the impacts of some of these various risks can affect our rate increases.

The first scenario is what we call the base case, as previously described in the **Base Case** section. The next scenario includes a small change to the base case it shows the impact if the water conditions were at critical inflow levels. Notice how the biggest impact occurs in future years, but there are more things happening in this scenario than what can be seen through looking at the rate changes here. In each of the scenario pages that follow specific details and an explanation are provided to help you understand some of the different components that are unique to that individual scenario.

The scenarios displayed here and in this section are not intended to represent all of the scenarios that we developed and analyzed. However, they provide you with the ability to see some of the various moving components and the effect of possible events. These scenarios also provide a range of possible outcomes that we feel relatively confident about given our current forecasts and other analyses.

Scenario	Projected Rate Increases									
	2017*	2018*	2019	2020	2021	2022	2023	2024	2025	2026
Base Case: Average Water Conditions	5.9%	5.9%	3.0%	3.0%	3.0%	3.0%	4.3%	4.3%	6.5%	6.5%
Critical Water in 2018	5.9%	5.9%	3.0%	3.0%	3.0%	3.0%	4.3%	4.3%	6.7%	6.7%
Loss of Largest Customer	5.9%	5.9%	3.0%	3.0%	3.0%	3.0%	5.3%	4.3%	7.5%	7.5%
Adverse Prices	5.9%	5.9%	3.0%	3.0%	4.5%	4.5%	6.0%	4.0%	7.0%	7.5%
Adverse Water in 2019 & 2020	5.9%	5.9%	3.0%	3.0%	3.0%	3.0%	4.3%	4.3%	6.7%	6.7%
Lower near-term rate increase	5.9%	5.9%	0%	0%	5.5%	3.9%	6.8%	3.7%	7.2%	7.5%

* The rate increases for 2017 and 2018 were approved by the City Council in April 2017.

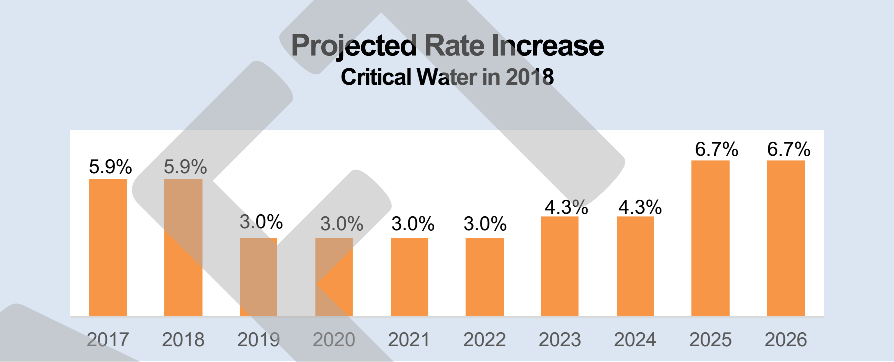
Critical Water Conditions

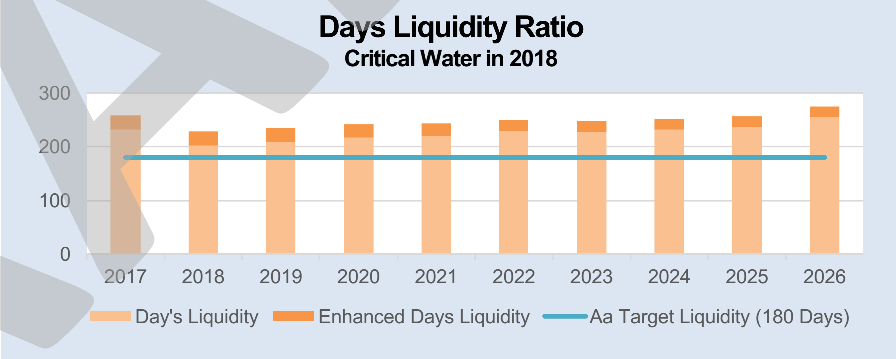
As you know, the foremost category of risk for Tacoma Power is the variability of water and weather—or more specifically, snowpack and precipitation. Multiple years of dry weather and water shortages can have a significant impact on the financial strength of the utility through reduced revenues.

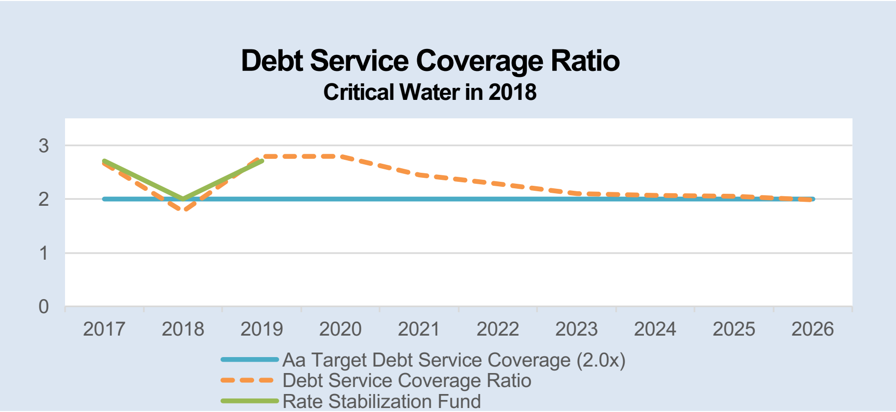
This scenario demonstrates how one year of Critical water inflows in 2018 may impact Tacoma Power financially.

When Tacoma Power has a critical water year, there are much lower inflows into the reservoirs that we rely on to generate electricity. Under this scenario, most of the electricity that is generated needs to be used to serve our customer's needs. Tacoma Power does not have very much electricity to sell into the Wholesale market, thereby reducing the amount of wholesale revenue the utility receives.

Illustrated in the Debt Service Coverage Ratio chart, the ratio falls well below the target in that year. We would likely use the Rate Stabilization Fund in such a year. In this case, we would use approximately $10 million to get our Debt Service Coverage Ratio to 2.0 times debt service (shown as the green line in the chart to the right). The Rate Stabilization Fund would then be replenished over the next two biennia. You won't see the impact in the liquidity chart because the Rate Stabilization Fund is included in our Days Liquidity calculation.







Large Load Loss

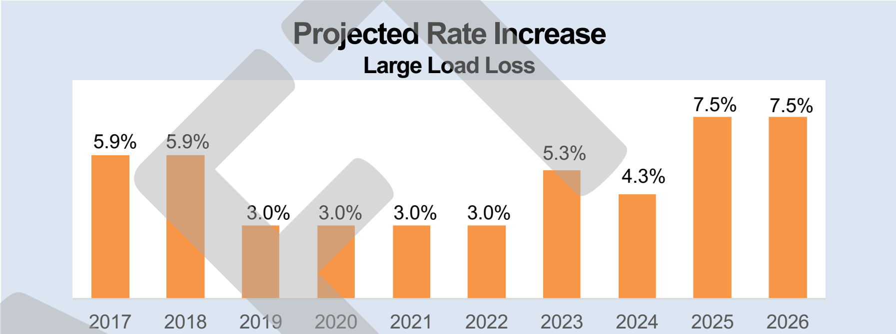
Losing a large retail customer due to local economic influences is one of the potential external risk factors facing Tacoma Power.

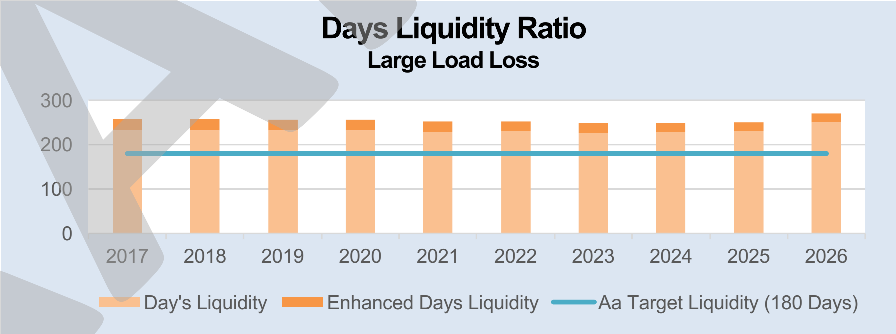
Under typical economic scenarios, retail sales represent 75 percent of total revenue.

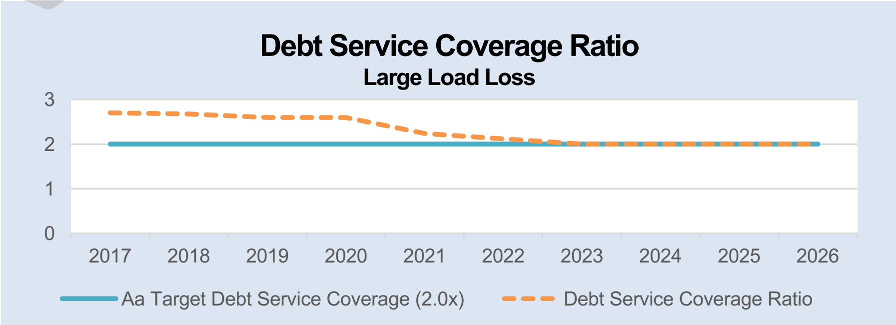
If Tacoma Power were to lose a large retail customer it makes sense that the amount of retail revenue earned would decrease. Conversely, this would also lead to an increase in the amount of wholesale revenue because Tacoma Power would have more surplus power available to sell.

Given current wholesale market price forecasts, this would result in a decline in net revenues for Tacoma Power. The decline would lead to larger rate increases in future years.

The opposite of this scenario could also have just the opposite effect. If Tacoma Power were to acquire a new large customer, such as a new large industrial customer, new apartment spaces, or retail businesses moving to the Tacoma service area, net revenues for the utility would increase. This would lead to lower rate increases in the near-term and future years.





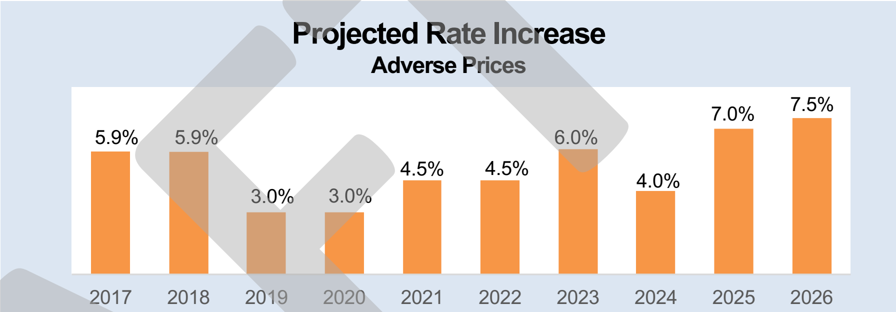


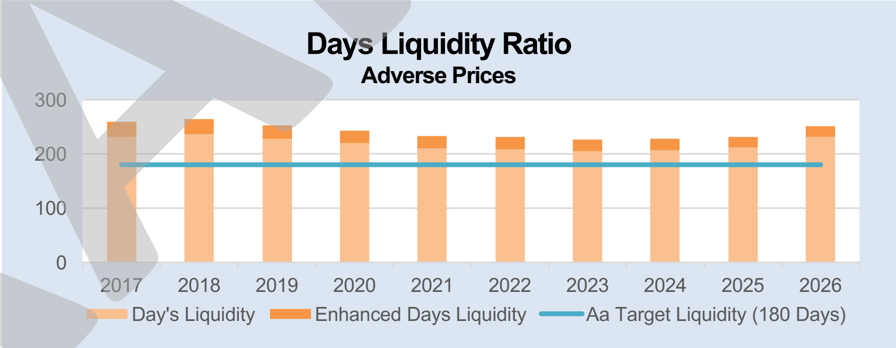
Adverse Prices

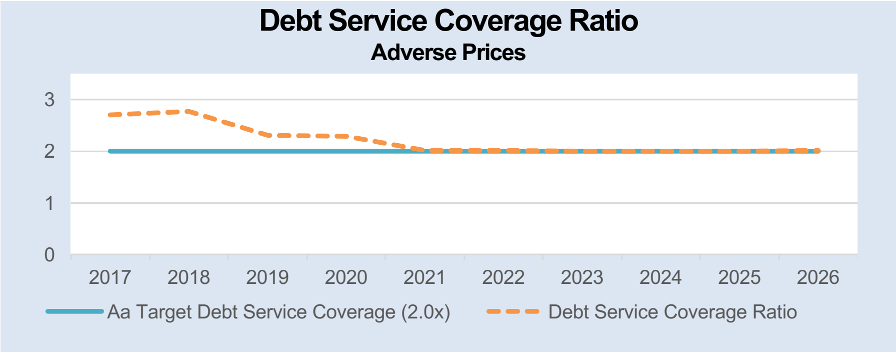
Most of the time we talk about adverse in terms of the water inflows into our system. However, we less often discuss the effect of wholesale market prices being something less than the current forecast. Our wholesale revenue is a product of the amount available to be sold and the wholesale market price that power is sold for. For this reason it also makes sense to look at the effect of lower than expected market prices.

In this scenario we assumed the market prices were at the 25th percentile of the forecast used in the base case. This results in a fairly significant impact to Tacoma Power beginning in 2019. The rate increases are higher in the 2019/2020 biennium than the base case and are higher in subsequent biennia as well.

It is unlikely for prices to fall this much but some of the risks explained about the transformation of the market on page 55 are likely to push prices in this direction.





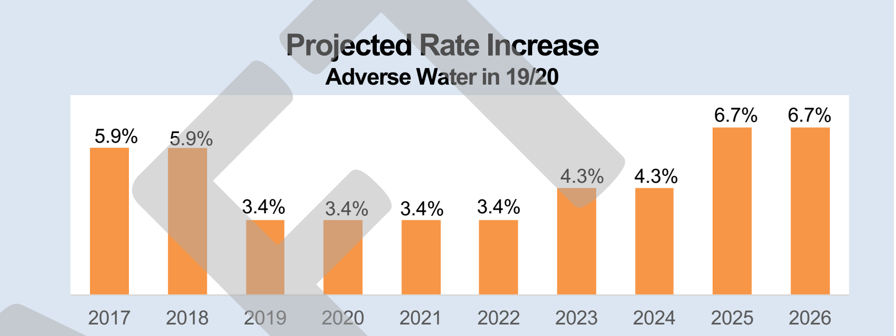


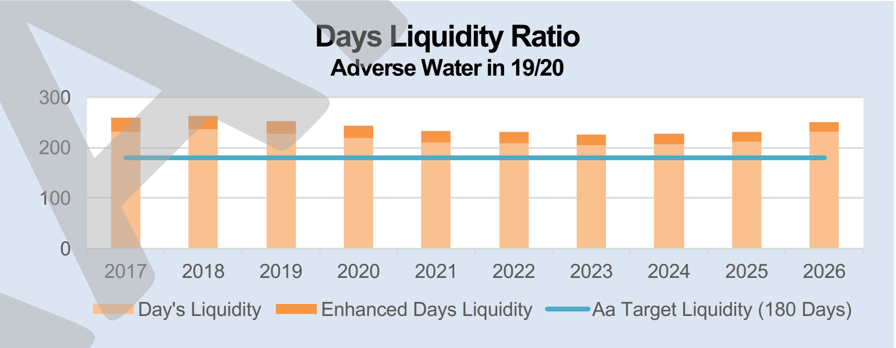
Adverse Water Conditions in 2019/2020

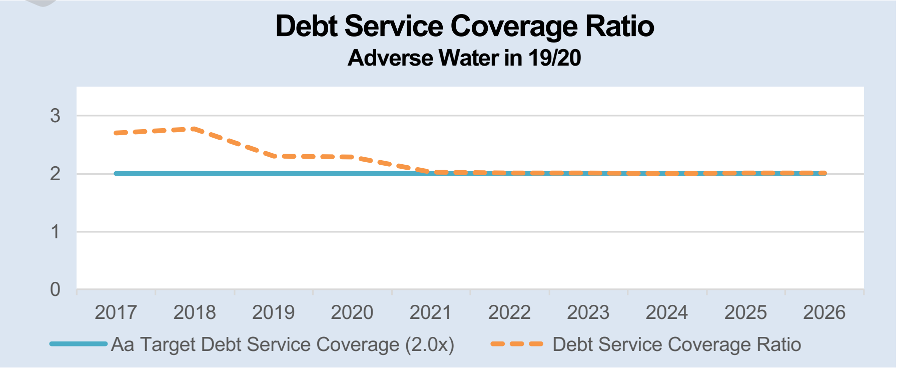
This scenario represents how we traditionally plan for water conditions when we set biennium budgets. We kept the water conditions over the remainder of the 2017 and 2018 biennium at average water and then forecast the rate increases necessary to maintain our financial metrics, given adverse water conditions in 2019 and 2020.

Due to many of the changes Tacoma Power has made to manage its financial performance in the last few years, like calling the outstanding 2005B Bonds, there is more flexibility in the near-term to absorb the impacts of two adverse water years in a row.

While this is also a relatively low probability type of event, the combination of prices and water conditions in the 2015/2016 biennium resulted in wholesale revenue levels equivalent to this very condition. The decline in wholesale revenue during the previous biennium is one of the items that contributed to a need for two 5.9 percent rate increases.





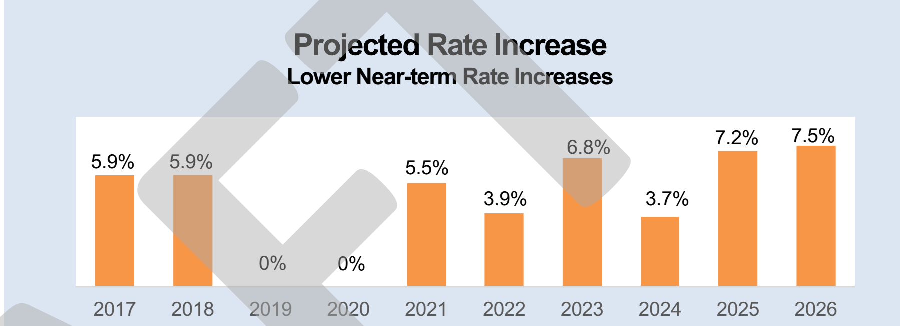


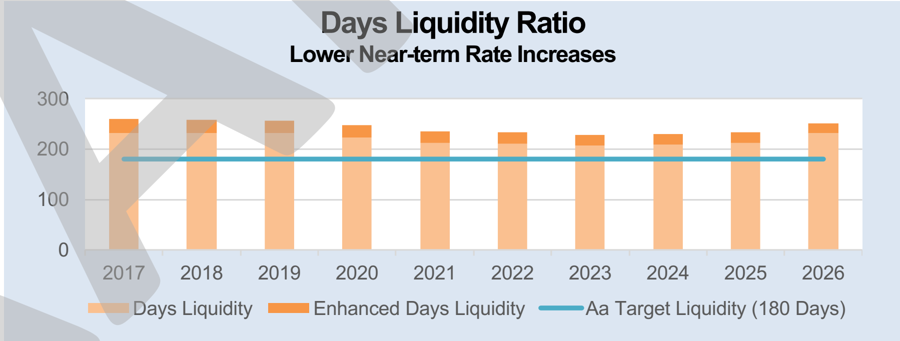
Lower Near-term Rate Increases

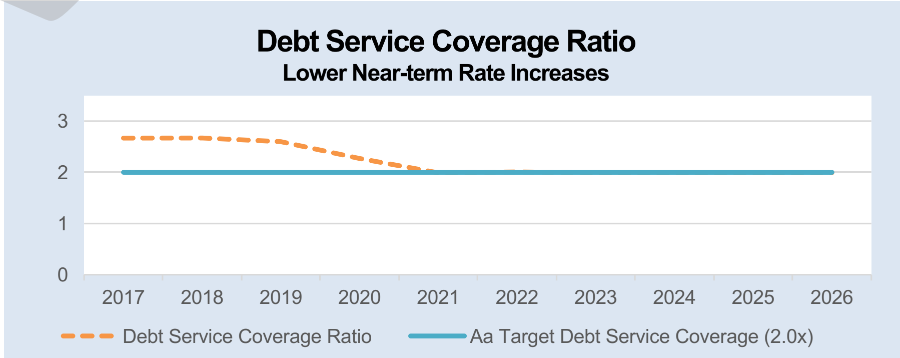
This final scenario, illustrates the effect of a low rate increase in the 2019/2020 biennium. While Tacoma Power has sufficient room to accommodate this under the current forecasts, the tradeoff is that there will need to be higher rate increases in future years.

Tacoma Power prefers to have low and stable rate increases so that the impact to customers can be more easily managed and planned for. The rate increases in this scenario fluctuate in each year and are consistently following an upward trend.

This is one of the primary reasons we developed this plan. To help you understand many of different components that must be taken into consideration when determining what the rate increase should be. Our goal is to make financial decisions that allow us to provide safe, reliable, and environmentally responsible electric and telecommunications services now and into the future. Making short-sighted decisions, without considering the long-term implications, can put this goal at risk.







Section 7

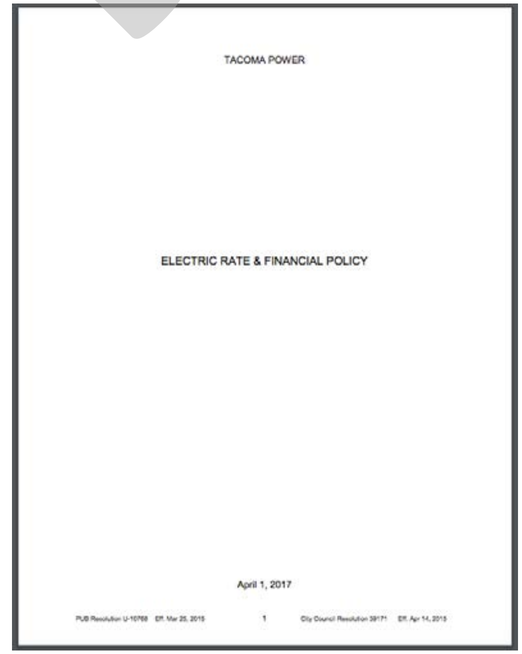
Funding the Plan

Carefully considering everything in the LRFP, what is most likely to happen, and how do we plan to pay for it?*

TACOMA POWER
TACOMA PUBLIC UTILITIES

**It's always better to answer that question long before you receive the bill in the mail. That's why we have a long-range plan.*

Electric Rate & Financial Policy


TACOMA POWER

ELECTRIC RATE & FINANCIAL POLICY

April 1, 2017

Did you know that we have an Electric Rate & Financial Policy? We have had one in place since 1984. It has been updated many times since that first version but you can find the latest version on our website at the following link: https://www.mytpu.org/about-tpu/tacoma-power-investor/financial-policy-annual.htm.

What's in the Policy?

This policy provides guidance for managing the financial performance of the utility. Related to many of the elements discussed in the LRFP you will find the following sections in the document:

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

Section IV provides guidance on what it means for Tacoma Power to maintain sound financial metrics that support our current and future financing needs, support maintenance or improvement of credit ratings and minimize the cost of funds and risks associated with borrowing. This section also specifies our assumption to use Adverse water conditions for wholesale revenue during the budget planning period.

Section V includes information about the Rate Stabilization Fund. We used this fund as a means to manage potential volatility associated with our operating environment and can draw on the fund to mitigate the need for large rate changes from one year to the next. If you would like to know more about the Rate Stabilization Fund, check out page 45.

Cash Fund or Bond Fund?

We typically fund capital projects using either the money we receive from issuing bonds or from revenue collected. We make a determination at the start of each biennium about approximately how much of our capital budget should be funded with bonds or cash.

Many of the assets Tacoma Power owns have long useful lives and we typically try to fund those assets with bond funds. If an asset is anticipated to be used for 30 years, we would expect that customers 30 years from now share in paying for the benefits that asset provides. Funding with Bonds allows us to align the life of the assets with paying for them.

Assets with a shorter life are often funded with revenue. However, it is a balancing act because as more debt is used to pay for assets, debt service expenses increase and put stress on future power rates.

Tacoma Power uses the funding guidelines shown at right to establish an appropriate ratio of bond and revenue funded capital. These ratios are then placed into the proposed budget for Tacoma Power and approved by the Public Utility Board and City Council. As illustrated in the chart to the right, our average ratio is approximately 35 percent revenue funded capital and 65 percent bond funded capital. This may adjust each year depending upon how large our capital program is, the types of projects we are constructing, or if we have additional cash from a previous operating year we can apply to projects instead of bond funds.

Funding Guidelines

Major projects:
100% bond funded

Remaining projects:
50% bond funded & 50% revenue funded

Historical Cash and Bond Funding Ratios

	Revenue Funded Capital	Bond / Debt Funded Capital	Total Budgeted Capital
2011/2012	27.10%	72.90%	$189,650,000
2013/2014	34.89%	65.11%	$167,043,000
2015/2016	36.86%	63.14%	$182,660,440
2017/2018	42.96%	57.04%	$190,474,000
Average Funding	**35%**	**65%**	

Leveling Out Existing Debt Service

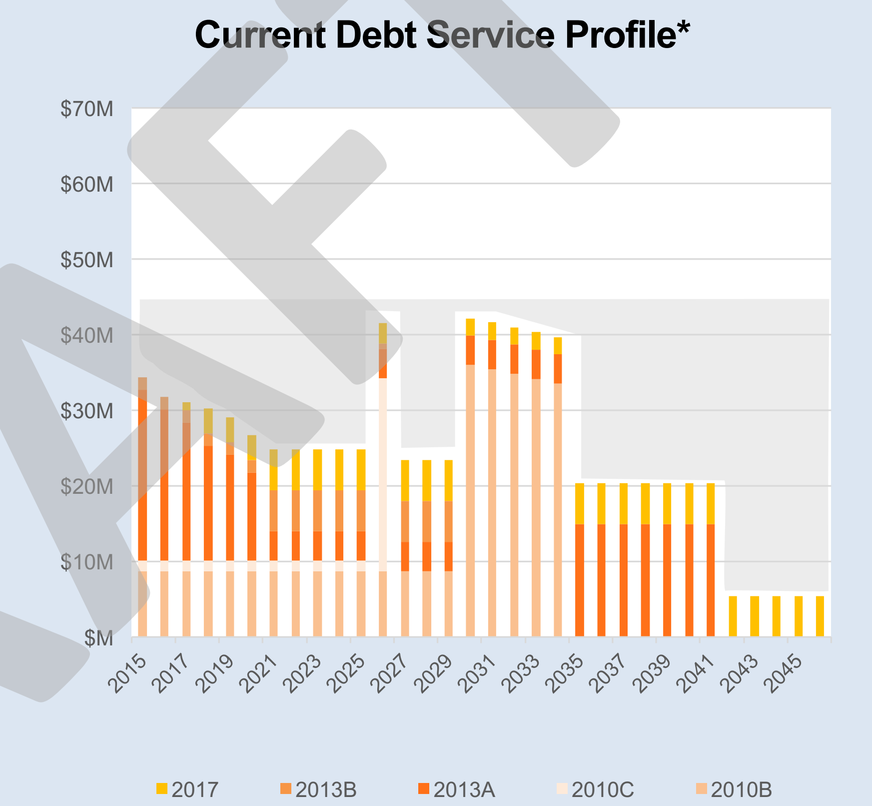
Remember those spikes in our debt service chart? One of the first things we want to do is level those out.

The gray area on the chart represents the gaps we can fill with debt in future years, not that it has to be filled up in all of those years. We will also be extending this chart beyond 2045 as we add capital projects that have a life beyond the next 25 years. The placement of debt is a primary consideration when issuing future bonds and a key part of our strategic investment decisions.

Here are some of the ways we might do that:

- If interest rates are higher than current rates, then we may want to pay principal and interest rates sooner.
- If interest rates are lower when we issue bonds, it would be financially beneficial to push debt service payments out further.

Another assumption included in the LRFP that allows for leveling of the existing debt service is the defeasance , or pre-paying, of $19,980,000 and $4,500,000 due in 2020 and 2021 respectively for the 2013A Bonds. This defeasance will help stabilize Tacoma Power's financial metrics in future years.



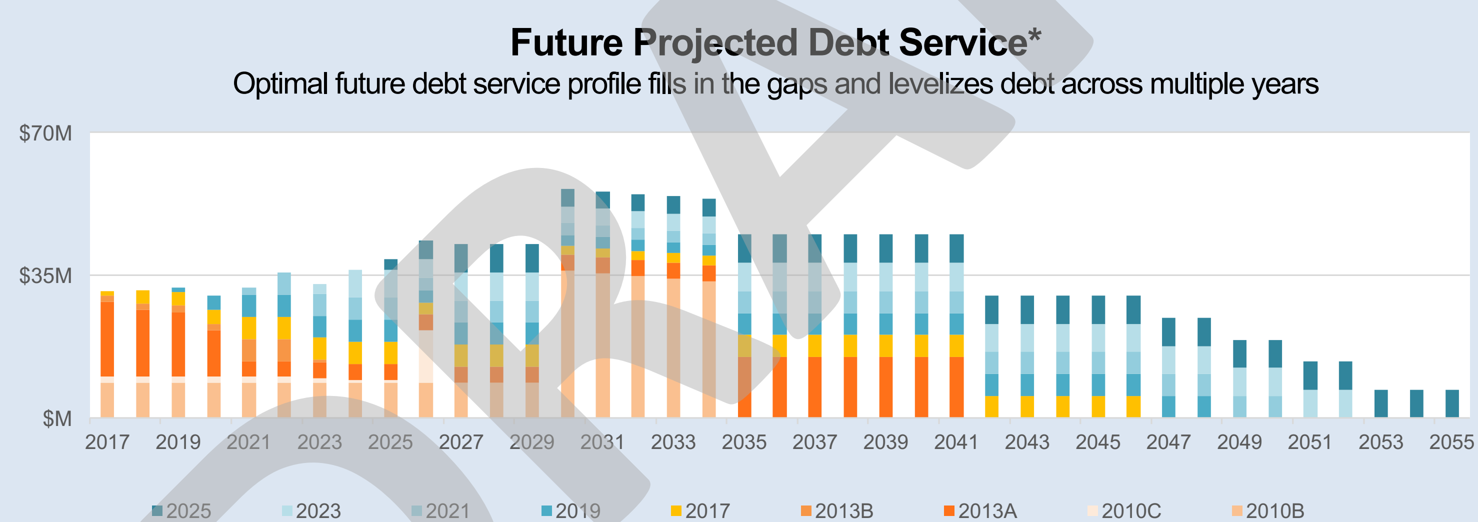
*Includes the total defeasance of $24,300,000 in 2019 & 2020 of the 2013A Bond principal payment.

Projected Debt Service

In our expected scenario, the LRFP assumes the issuance of approximately $100 million in long-term fixed-rate bonds every other year. These funds will repay spending on capital projects during the prior biennium.

The graph below illustrates the base case future bond issuances that will refund spending on capital projects targeted in future biennia.

The combination of the existing bond issues and projected future bond issues will be structured to level out the future debt service as described on the previous slide.



Includes a 19,980,000 defeasance in 2019 and 4,500,000 in 2020 of the 2013 A bond debt service, as well as a 12,000,000 defeasance in 2026 of the 2010C bond debt service

** Not included in the graph is the debt service from the short-term Note Purchase Agreements or short-term debt that is currently used to manage the initial spending on bond-funded capital projects.*

Section 8
Making it Happen

The key objectives* Tacoma Power will pursue over the next year

TACOMA POWER
TACOMA PUBLIC UTILITIES

**We learned some things along the journey of getting to this point, how about you?*

Action #1

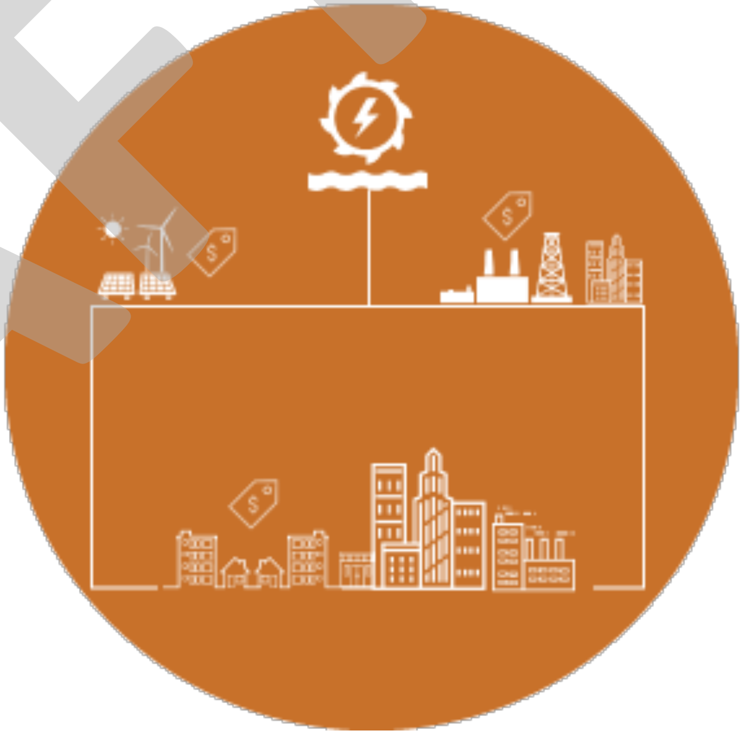
Strategic Asset Management

Tacoma Power is launching a Strategic Asset Management program. We have been doing asset management for as long as we have owned assets but we believe we can do it in a better and more efficient manner that will provide significant benefits to the utility. That is why we are calling it strategic asset management.

We perform asset management to assess the maturity of our assets and develop optimal plans for regular maintenance or replacement of those assets. An asset is anything that we own. It could be a power pole, a utility truck, a software program, a building, or many other things.

For utilities, there is an industry standard for how you approach and implement your asset management program. Tacoma Power has recently completed a gap analysis and identified a number of improvement actions that will move us closer to the desired level of maturity in our asset management program as an organization.

Our Rates, Planning, and Analysis group is leading the effort to coordinate and implement this new program. We expect it to help us develop efficiencies across the organization, standardize approaches to managing assets, and transfer knowledge when employees transition to new positions. It is expected to take us several years to mature to where we want to be but we anticipate a number of long-term cost savings to the utility.



Action #2

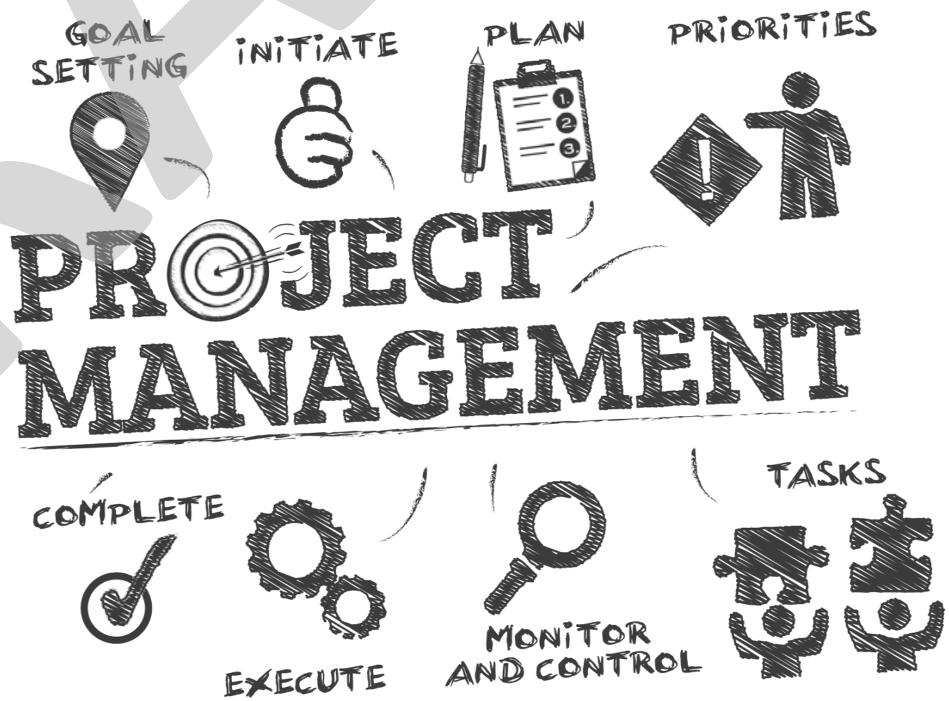
Capital Portfolio Management Office

Tacoma Power's capital improvement budget for this biennium is more than $190 million. That represents many different types of capital projects. Some only take a few months to complete while others will take the entire biennium. Some of the projects are only a few thousand dollars and others are millions of dollars. It takes excellent project management skills and tools to coordinate the staff and materials to complete all of these projects.

A recent gap analysis on existing project management practices across the utility identified a number of areas that we believe we can improve. Similar to our approach in developing a strategic asset management program, we are in the process of developing a Capital Portfolio Management Office (PMO). In fact, these two programs will be closely linked together.

Our asset management program will identify assets for replacement and the PMO will make sure they get replaced in timely and efficient manner.

This program is just getting started but it will provide project managers across the utility with guidance for how to implement and use best practices in project management tools and techniques. The PMO will report information regarding capital projects and provide metrics that facilitate more informed decision making for project managers and the leadership of Tacoma Power. This too is a long-term strategy for reducing expenses as the program will allow for better budget planning, increased efficiency, and cost savings.



Action #3

Debt Service Management

Tacoma Power has been actively managing its debt service for the last several years. As you read on page 40, in 2015 we reduced our debt payments by more than $122 million. This represents a large savings every year for the customers of Tacoma Power. However, there is more work to be completed in this area.

We will continue to need to issue Bonds to help pay for capital improvements and we need to develop strategies to acquire that new debt in a manner that minimizes the impacts to customers.

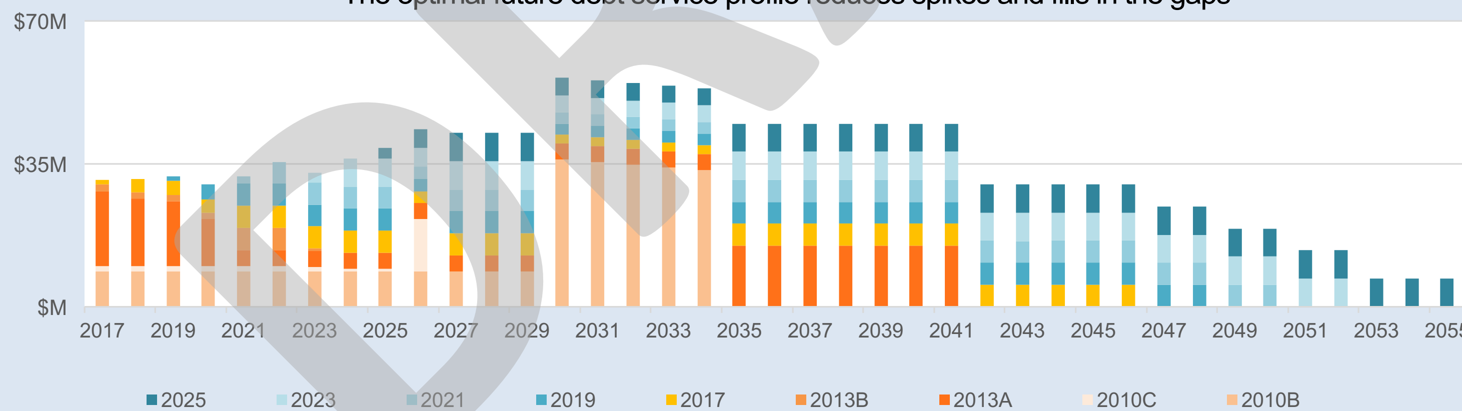
We also have spikes in future debt service payments that will need to be managed through defeasance or other financial strategies.

We will continue to budget conservatively by setting our rates under adverse water conditions. We expect this to generate additional revenue when we experience average water conditions and we will develop strategies to utilize that cash.

The chart below shows a potential future debt service structure after we issue debt in 2021, 2023, and 2025.

Future Projected Debt Service*

The optimal future debt service profile reduces spikes and fills in the gaps



**Includes a 19,980,000 defeasance in 2019 and 4,500,000 in 2020 of the 2013 A bond debt service, as well as a 12,000,000 defeasance in 2026 of the 2010C bond debt service*

Action #4

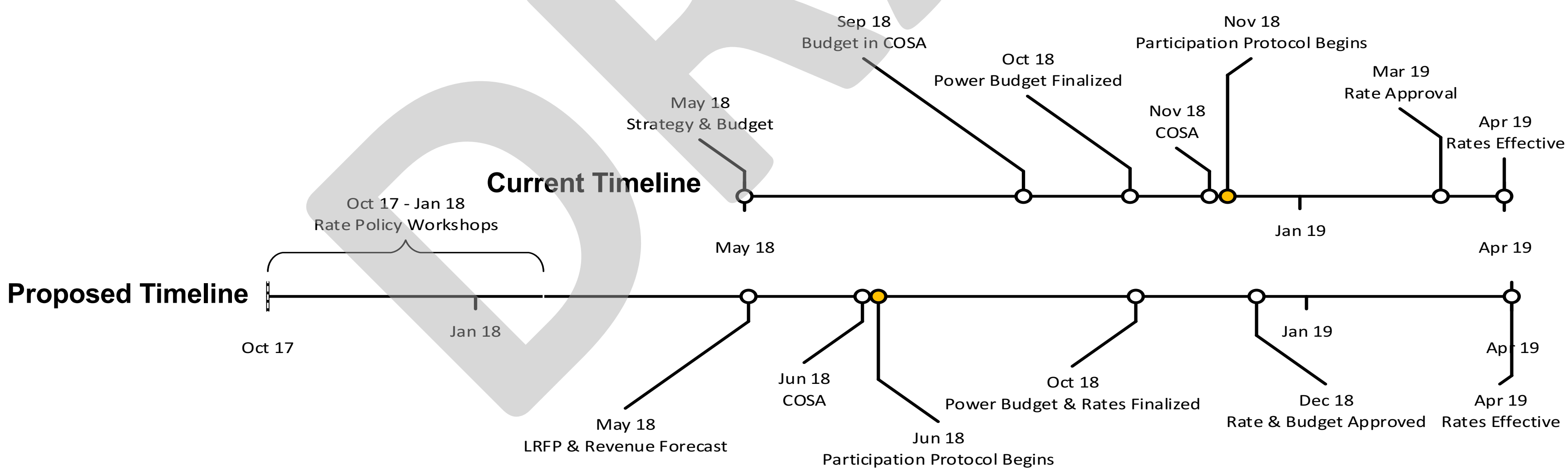
Concurrent Consideration and Approval of Budget and Rates

During the 2017/2018 budget and rate process it was requested that rate increases be approved concurrent with the biennial budget. Historically the budget has been approved and then rate increases are recommended to the Public Utility Board and City Council for approval. The new process will recommend the Public Utility Board and City Council approve both at the same time.

To accomplish this, assumptions about future revenues and expenses will be used to guide decision making. The revenue requirement will be “decoupled” from the approved budget.

There are both risks and benefits in setting rates based on estimates of future revenues and spending. Budgets will need to be managed more closely and rate adjustments may need to be made more often but this will also allow us to minimize rate increases as well.

An initiative is underway to develop the process necessary to meet the proposed change in the budget and rate setting timeline. A high-level overview of this change is provided below.



Action #5

O&M Cost Savings Initiative

Some of the actions mentioned before now have been longer-term strategies to increase efficiency and reduce costs across the utility. However, there are also things we believe can help in the near-term as well.

Recently, we launched a strategic initiative to identify cost savings in each Section of Tacoma Power. Our Rates, Planning, and Analysis Section is in the process of pulling together that list. Once each of the cost saving measures have been identified, staff will work with the leadership team to prioritize which actions can be implemented first. Some of the items may only require small changes to the way we approach our work but other items will require time and planning to implement and move forward with the changes.

To provide an example of the types of changes that are expected to come out of this initiative, late last year we started working on an evaluation of our Fleet program. We are now nearing the end of a process to comprehensively study the utilization and replacement process for all of Tacoma Power's vehicles. The process will lead to a number of recommendations, including the elimination of several vehicles. Reducing our fleet will save Tacoma Power time and money as we have fewer vehicles to manage. We must be careful to do this in a way that does not negatively affect the services we provide. This is just one example of the type of evaluation, process, and results that are anticipated to come out of this initiative.

Action #6

TBD

...

Section 9

Glossary

Defining a few key terms

Glossary

Additions and Replacements (A&R)
Costs to better existing assets. Capital additions can take the form of replacing or adding new parts that may increase useful life or potential.

Administrative & General (A&G)
Expenses necessary to operate a business, which are not related to materials, labor, or sale of goods or services, such as office supplies, rent, and janitorial services.

Adverse Water
The amount of water that came into the Tacoma Power reservoirs during the lowest 25% of recorded historical years on record. This amount of water flow occurs one out of every four years.

Asset life analysis
The process of identifying and documenting all the costs expected over the life of an asset. This includes equipment and facilities. This information is needed to make decisions on the acquisition and ongoing use of assets.

Base case
A set of financial expectations that represent a “best guess” of the current financial outcomes if unexpected happens. The base case assumes that there will not be major policy changes, unforeseen disasters, or other game changing events.

Base case analysis
Comparing the Base Case forecast with alternative scenarios. It shows the relative effects of scenario changes to the “Base Case” version of the future.

Biennium
A specified period of two years and the cycle of Tacoma Power’s budgeting efforts.

Bonds
A debt security where an investor loans money to a corporation or government for a defined period of time at a variable or fixed interest rate. Bonds are used by corporations, municipalities, and governments to raise money and finance a variety of projects and activities.

Capital
Assets or property having value owned by a person or organization.

Capital Improvement Program (CIP)
A four to ten year plan that identifies capital projects and equipment purchases. It provides a planning schedule and options for financing the plan.

Capital Steering Committee (CSC)
A committee of individuals that leverages their experiences, expertise, and insight to make informed decisions and drive the capital program. The CSC prioritizes potential capital projects, and monitors the project status to ensure that the business objectives are adequately addressed.

Cost of service analysis (COSA)
The process of allocating utility expenses among the different classes of customers. Not all customers use the same resources. The COSA ensures users pay for their share of the costs they impose on the utility in the form of rates.

Cost of service utility
A utility where customers are charged rates based on what it costs to provide service.

Credit rating
An estimated ability of an organization to fulfill their financial commitments.

Glossary cont.

Critical Water
The amount of water that came into the Tacoma Power reservoirs during the lowest year on record.

Customer classes
Customer classes are the broad rate groups used to allocate costs to customers. Examples are: residential, commercial and industrial.

Days Liquidity Ratio (Days Cash on Hand)
The number of days that an organization can continue to pay its operating expenses, given the amount of cash available.
(Unrestricted Cash x 365 Days) / (Total Operating Expenses)

Debt service
The cash that is required to cover the repayment of interest and principal on a debt for a particular period.

Debt service coverage ratio (DSCR)
A measure of the cash flow available to pay current debt interest, principal and lease payments.
DSCR = (Operating Revenues – Operating Expenses) / Debt Service

Debt Ratio
The ratio shows the percentage of debt used to finance a company's assets. Debt Ratio = Total Debt Service Owed / Value of Total Assets

Defease
Setting aside funds to pay for the interest and principal owed on debt. This removes the liabilities from the balance sheet of the borrower.

Energy Conservation
A reduction in energy consumption through using less or more efficiently using resources.

Hydroelectric
The generation of electricity using flowing water to power a generator.

Hydrology
The scientific study of the movement, distribution, and quality of water, including the water cycle and water resources.

Load
Generic term for something in the electric system that draws power, such as lights and appliances.

Megawatt-hours
A unit for measuring power that is equivalent to one million watts. One megawatt is equivalent to the energy produced by 10 automobile engines. A megawatt hour (MWh) is equal to 1,000 Kilowatt hours (KWh) used continuously for one hour.

Power purchase agreements
A contract between two parties, one which generates electricity (the seller) and one which is looking to purchase electricity (the buyer).

Public Utility Board
The five-member board that oversees the management and operations of Tacoma's electric, water, and rail utilities.

Rating Agency
A credit rating agency rates a borrower's ability to pay back debt by making timely interest payments and the likelihood of default.

Scenarios
A potential future situation that creates risk or provides an opportunity.

Shale gas
Natural gas trapped within shale formations. Shales are fine-grained sedimentary rocks that can be rich sources of petroleum and natural gas.

Wholesale
"Wholesale" is the sale of electricity to other power providers, and not regular customers.

More Information & Contact Info

This document is a product of Tacoma Power's Rates, Planning & Analysis Section.

After making it this far, you may have additional questions. That is AWESOME! We aimed to produce a document that informs, increases transparency, and starts essential conversations around some of the things we're thinking about. If you direct your questions to the email below, we will do our best to get back to you as soon as we can.

Rates, Planning & Analysis Manager
PowerFinance@cityoftacoma.org

Tacoma Power Homepage
https://www.mytpu.org/tacomapower

Tacoma Power Website
Investor Relations Page
https://www.mytpu.org/about-tpu/tacoma-power-investor

Photo Credits: All photos were purchased or used with permission for this project. The photos on pages 3 and 25 were used with permission by Dave Largent.

Section 10

Appendix

Maybe you want to see a few more of the numbers?

TACOMA POWER
TACOMA PUBLIC UTILITIES

We know for some of you this just made you more curious and you want more detail. So we have tried to include a few more of the numbers behind the scenarios in the plan.

Base Case

Page 48

Projections ($ in Millions)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
System Average Rate Increase	**5.9%**	**5.9%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**4.3%**	**4.3%**	**6.5%**	**6.5%**
Retail Sales of Electricity	$343.92	$359.55	$374.90	$389.39	$397.25	$406.31	$419.19	$434.29	$456.55	$482.74
Revenues from Wholesale Sales	50.29	52.45	58.30	60.75	65.76	70.22	72.18	75.01	78.53	80.99
Other Operating Revenues	45.04	43.97	44.44	44.58	44.74	44.94	45.15	45.40	46.76	48.17
Total Operating Revenues	**439.25**	**455.97**	**477.64**	**494.72**	**507.75**	**521.47**	**536.52**	**554.70**	**581.84**	**611.90**
Operations and Maintenance	308.02	323.81	341.05	356.65	375.01	384.34	399.49	407.93	428.11	434.79
Operating Taxes	20.60	21.72	22.23	22.96	23.44	23.97	24.65	25.42	26.55	27.85
Total Operating Expenses	**328.62**	**345.53**	**363.28**	**379.61**	**398.44**	**408.31**	**424.14**	**433.35**	**454.66**	**462.65**
Other Income	7.22	6.75	9.01	9.40	9.79	10.12	10.45	10.66	10.93	11.35
Revenue Available for Debt Service	117.84	117.19	123.37	124.51	119.09	123.28	122.83	132.01	138.11	160.60
Net Debt Service on Bonds	31.90	31.04	31.04	31.04	32.77	36.33	38.79	43.26	45.70	57.71
Adjusted Debt Service Coverage Ratio*	**2.71x**	**2.64x**	**2.73x**	**2.43x**	**2.39x**	**2.29x**	**2.29x**	**2.29x**	**2.29x**	**2.29x**
Adjusted Days Liquidity	**239**	**240**	**246**	**250**	**253**	**264**	**264**	**264**	**264**	**264**

* Adjusted Debt Service Coverage Ratio reflects our coverage after the transfer of 7.5% Gross Earnings Taxes to the City of Tacoma

Critical Water in 2018 Scenario

Page 67

Projections ($ in Millions)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
System Average Rate Increases	**5.9%**	**5.9%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**4.3%**	**4.3%**	**6.7%**	**6.7%**
Retail Sales of Electricity	$343.92	$359.55	$374.90	$389.39	$397.25	$406.31	$419.19	$434.29	$457.13	$484.26
Revenues from Wholesale Sales	50.29	22.34	58.30	60.75	65.76	70.22	72.18	75.01	78.53	80.99
Other Operating Revenues	45.04	43.97	44.44	44.58	44.74	44.94	45.15	45.40	46.76	48.17
Total Operating Revenues	**439.25**	**425.87**	**477.64**	**494.72**	**507.75**	**521.47**	**536.52**	**554.70**	**582.42**	**613.42**
Operations and Maintenance	308.02	323.81	341.05	356.65	375.01	384.34	399.49	407.93	428.11	434.79
Operating Taxes	20.60	21.72	22.21	22.94	23.42	23.95	24.63	25.40	26.55	27.88
Total Operating Expenses	**328.62**	**345.53**	**363.26**	**379.58**	**398.42**	**408.28**	**424.12**	**433.33**	**454.65**	**462.68**
Other Income	7.22	6.62	8.45	8.83	9.21	9.53	9.84	10.05	10.30	10.73
Revenue Available for Debt Service	117.84	86.96	122.83	123.96	118.54	122.71	122.26	131.43	138.07	161.48
Net Debt Service on Bonds	31.90	31.04	31.04	31.04	32.77	36.33	38.79	43.26	45.70	57.71
Adjusted Debt Service Coverage Ratio*	**2.66x**	**1.77x**	**2.79x**	**2.79x**	**2.44x**	**2.29x**	**2.10x**	**2.07x**	**2.06x**	**1.99x**
Adjusted Days Liquidity	**231**	**202**	**209**	**217**	**220**	**228**	**227**	**231**	**236**	**254**

* Adjusted Debt Service Coverage Ratio reflects our coverage after the transfer of 7.5% Gross Earnings Taxes to the City of Tacoma

Large Load-Loss Scenario

Page 68

Projections ($ in Millions)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
System Average Rate Increases	**5.9%**	**5.9%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**5.3%**	**4.3%**	**7.5%**	**7.5%**
Retail Sales of Electricity	$343.92	$359.55	$357.04	$371.10	$378.50	$387.10	$401.94	$417.69	$441.86	$471.55
Revenues from Wholesale Sales	50.29	52.45	68.19	71.51	76.11	81.84	84.15	87.99	90.65	94.74
Other Operating Revenues	45.04	43.97	44.44	44.58	44.74	44.94	45.15	45.40	46.76	48.17
Total Operating Revenues	**439.25**	**455.98**	**469.67**	**487.19**	**499.35**	**513.87**	**531.24**	**551.08**	**579.28**	**614.46**
Operations and Maintenance	308.02	323.80	341.09	356.69	375.05	384.38	399.53	407.97	428.15	434.84
Operating Taxes	20.60	21.73	21.54	22.25	22.70	23.21	23.96	24.76	25.96	27.38
Total Operating Expenses	**328.62**	**345.53**	**362.63**	**378.94**	**397.75**	**407.59**	**423.50**	**432.73**	**454.10**	**462.23**
Other Income	7.22	6.75	9.01	9.27	9.53	9.71	9.91	10.03	10.23	10.60
Revenue Available for Debt Service	117.84	117.20	116.05	117.52	111.13	115.99	117.65	128.39	135.40	162.84
Net Debt Service on Bonds	31.90	31.04	31.04	31.04	32.77	36.33	38.79	43.26	45.70	57.71
Adjusted Debt Service Coverage Ratio*	**2.71x**	**2.67x**	**2.59x**	**2.60x**	**2.24x**	**2.12x**	**2.00x**	**2.00x**	**2.00x**	**2.02x**
Adjusted Days Liquidity	**231**	**231**	**232**	**233**	**229**	**231**	**226**	**228**	**231**	**251**

* Adjusted Debt Service Coverage Ratio reflects our coverage after the transfer of 7.5% Gross Earnings Taxes to the City of Tacoma

Adverse Price Scenario

Page 69

Projections ($ in Millions)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
System Average Rate Increases	**5.9%**	**5.9%**	**3.0%**	**3.0%**	**4.5%**	**4.5%**	**6.0%**	**4.0%**	**7.0%**	**7.5%**
Retail Sales of Electricity	$343.92	$359.55	$374.90	$389.39	$401.14	$416.27	$436.25	$453.44	$477.75	$509.14
Revenues from Wholesale Sales	50.29	52.45	37.42	39.85	43.12	45.65	47.80	49.56	52.17	53.83
Other Operating Revenues	45.04	43.97	44.44	44.58	44.74	44.94	45.15	45.40	46.76	48.17
Total Operating Revenues	**439.25**	**455.98**	**456.76**	**473.81**	**489.01**	**506.85**	**529.20**	**548.40**	**576.68**	**611.14**
Operations and Maintenance	308.02	320.74	337.64	353.24	371.34	380.38	395.52	403.77	423.83	430.37
Operating Taxes	20.60	21.73	22.23	22.95	23.57	24.32	25.27	26.12	27.33	28.82
Total Operating Expenses	**328.62**	**342.47**	**359.88**	**376.19**	**394.91**	**404.70**	**420.79**	**429.90**	**451.15**	**459.19**
Other Income	7.22	6.77	9.08	9.15	9.21	9.26	9.37	9.50	9.69	10.07
Revenue Available for Debt Service	117.84	120.28	105.96	106.77	103.31	111.41	117.77	128.00	135.22	162.02
Net Debt Service on Bonds	31.90	31.04	31.04	31.04	32.77	36.33	38.79	43.26	45.70	57.71
Adjusted Debt Service Coverage Ratio*	**2.70x**	**2.77x**	**2.30x**	**2.28x**	**2.02x**	**2.01x**	**2.00x**	**2.00x**	**2.00x**	**2.01x**
Adjusted Days Liquidity	**231**	**237**	**228**	**219**	**210**	**208**	**205**	**207**	**211**	**231**

* Adjusted Debt Service Coverage Ratio reflects our coverage after the transfer of 7.5% Gross Earnings Taxes to the City of Tacoma

Adverse Water in 2019 & 2020 Scenario

Page 70

Projections ($ in Millions)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
System Average Rate Increases	**5.9%**	**5.9%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**4.3%**	**4.3%**	**6.7%**	**6.7%**
Retail Sales of Electricity	$343.92	$359.55	$374.90	$389.39	$397.25	$406.31	$419.19	$434.29	$457.13	$484.26
Revenues from Wholesale Sales	50.29	52.45	43.33	45.07	65.76	70.22	72.18	75.01	78.53	80.99
Other Operating Revenues	45.04	43.97	44.44	44.58	44.74	44.94	45.15	45.40	46.76	48.17
Total Operating Revenues	**439.25**	**455.98**	**462.67**	**479.03**	**507.75**	**521.47**	**536.53**	**554.70**	**582.42**	**613.42**
Operations and Maintenance	308.02	323.81	341.09	356.69	375.00	384.34	399.49	407.93	428.10	434.80
Operating Taxes	20.60	21.73	22.23	22.95	23.42	23.95	24.63	25.40	26.55	27.88
Total Operating Expenses	**328.62**	**345.53**	**363.32**	**379.64**	**398.42**	**408.29**	**424.12**	**433.33**	**454.65**	**462.68**
Other Income	7.22	6.75	9.01	9.12	9.21	9.54	9.85	10.06	10.31	10.73
Revenue Available for Debt Service	117.84	117.18	108.35	108.51	118.54	122.72	122.26	131.44	138.08	161.47
Net Debt Service on Bonds	31.90	31.04	31.04	31.04	32.77	36.33	38.79	43.26	45.70	57.71
Adjusted Debt Service Coverage Ratio*	**2.66x**	**2.67x**	**2.36x**	**2.33x**	**2.44x**	**2.29x**	**2.10x**	**2.07x**	**2.06x**	**1.99x**
Adjusted Days Liquidity	**231**	**231**	**224**	**217**	**221**	**228**	**227**	**231**	**236**	**255**

* Adjusted Debt Service Coverage Ratio reflects our coverage after the transfer of 7.5% Gross Earnings Taxes to the City of Tacoma

Lower Near-term Rate Increases Scenario

Page 71

Projections ($ in Millions)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
System Average Rate Increases	**5.9%**	**5.9%**	**0.0%**	**0.0%**	**5.5%**	**3.9%**	**6.8%**	**3.7%**	**7.2%**	**7.5%**
Retail Sales of Electricity	$343.92	$359.55	$367.55	$370.63	$380.56	$394.59	$414.87	$431.42	$454.70	$484.87
Revenues from Wholesale Sales	50.29	52.45	58.30	60.75	65.76	70.22	72.18	75.01	78.53	80.99
Other Operating Revenues	45.04	43.97	44.44	44.58	44.74	44.94	45.15	45.40	46.76	48.17
Total Operating Revenues	**439.25**	**455.97**	**470.29**	**475.96**	**491.06**	**509.75**	**532.20**	**551.83**	**579.99**	**614.03**
Operations and Maintenance	308.02	323.80	341.05	356.65	375.00	384.34	399.49	407.93	428.11	434.80
Operating Taxes	20.60	21.73	21.95	22.23	22.78	23.49	24.45	25.27	26.44	27.88
Total Operating Expenses	**328.62**	**345.53**	**362.99**	**378.88**	**397.78**	**407.82**	**423.94**	**433.20**	**454.54**	**462.68**
Other Income	7.22	6.75	9.01	9.27	9.32	9.35	9.45	9.58	9.77	10.14
Revenue Available for Debt Service	117.84	117.20	116.30	106.35	102.61	111.27	117.73	128.21	135.22	161.48
Net Debt Service on Bonds	31.90	31.04	31.04	31.04	32.77	36.33	38.79	43.26	45.70	57.71
Adjusted Debt Service Coverage Ratio*	**2.66x**	**2.67x**	**2.60x**	**2.27x**	**2.00x**	**2.00x**	**2.00x**	**2.00x**	**2.00x**	**1.99x**
Adjusted Days Liquidity	**231**	**231**	**232**	**223**	**212**	**211**	**207**	**209**	**213**	**231**

* Adjusted Debt Service Coverage Ratio reflects our coverage after the transfer of 7.5% Gross Earnings Taxes to the City of Tacoma

Scheduled Debt Service

Page 15

Year	2010B (BABs)	2010C (CREBs)	2013A	2013B	2017	Total *
2017	$ 8,691,824	$ 1,364,276	$ 18,292,100	$ 1,616,110	$ 1,095,600	$ 31,059,910
2018	$ 8,691,824	$ 1,364,276	$ 15,279,100	$ 1,616,110	$ 3,286,800	$ 30,238,110
2019	$ 8,691,824	$ 1,364,276	$ 14,094,350	$ 1,616,110	$ 3,286,800	$ 29,053,360
2020	$ 8,691,824	$ 1,364,276	$ 11,731,100	$ 1,616,110	$ 3,286,800	$ 26,690,110
2021	$ 8,691,824	$ 1,364,276	$ 3,892,600	$ 5,411,110	$ 5,436,800	$ 24,796,610
2022	$ 8,691,824	$ 1,364,276	$ 3,892,600	$ 5,411,360	$ 5,434,300	$ 24,794,360
2023	$ 8,691,824	$ 1,364,276	$ 3,892,600	$ 5,411,360	$ 5,436,550	$ 24,797,360
2024	$ 8,691,824	$ 1,364,276	$ 3,892,600	$ 5,412,860	$ 5,438,050	$ 24,799,610
2025	$ 8,691,824	$ 1,364,276	$ 3,892,600	$ 5,408,813	$ 5,433,550	$ 24,791,062
2026	$ 8,691,824	$ 25,549,276	$ 3,892,600	$ 736,750	$ 2,693,050	$ 41,563,500
2027	$ 8,691,824		$ 3,892,600	$ 5,411,750	$ 5,438,050	$ 23,434,224
2028	$ 8,691,824		$ 3,892,600	$ 5,408,000	$ 5,435,800	$ 23,428,224
2029	$ 8,691,824		$ 3,892,600	$ 5,412,750	$ 5,436,800	$ 23,433,974
2030	$ 36,001,824		$ 3,892,600		$ 2,260,550	$ 42,154,974
2031	$ 35,445,302		$ 3,892,600		$ 2,260,550	$ 41,598,452
2032	$ 34,789,416		$ 3,892,600		$ 2,260,550	$ 40,942,566
2033	$ 34,164,289		$ 3,892,600		$ 2,260,550	$ 40,317,439
2034	$ 33,517,046		$ 3,892,600		$ 2,260,550	$ 39,670,196
2035			$ 14,882,600		$ 5,435,550	$ 20,318,150
2036			$ 14,878,100		$ 5,436,800	$ 20,314,900
2037			$ 14,881,350		$ 5,435,050	$ 20,316,400
2038			$ 14,880,600		$ 5,435,050	$ 20,315,650
2039			$ 14,881,800		$ 5,436,300	$ 20,318,100
2040			$ 14,877,600		$ 5,438,300	$ 20,315,900
2041			$ 14,882,400		$ 5,435,550	$ 20,317,950
2042					$ 5,437,800	$ 5,437,800
2043					$ 5,434,000	$ 5,434,000
2044					$ 5,433,200	$ 5,433,200
2045					$ 5,435,000	$ 5,435,000
2046					$ 5,434,000	$ 5,434,000

* Debt Service is shown based on the amount that is accrued in each year. Actual payments of the amount accrued may occur in the following year.

Projected Capital Improvement Program Expenditures

Page 31

Project Expenditures * ($000)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Power Supply	$23,562	$23,562	$21,112	$21,113	$11,665	$11,665	$12,132	$12,132	$12,617	$12,617
Transmission and Distribution	29,695	29,696	33,629	33,630	33,809	33,809	$35,161	$35,161	$36,568	$36,568
Utilities Technology	15,976	15,976	11,231	11,231	8,881	8,881	$9,236	$9,236	$9,606	$9,606
Telecommunications	3,069	15,159	2,555	2,555	2,480	2,480	$2,579	$2,579	$2,682	$2,682
Conservation	10,925	10,925	10,675	10,675	9,975	9,975	$10,374	$10,374	$10,789	$10,789
General Plant	5,965	5,964	10,553	10,553	7,951	7,951	$8,269	$8,269	$8,600	$8,600
Total Project Expenditures	**$89,192**	**$101,282**	**$89,755**	**$89,757**	**$74,761**	**$74,761**	**$77,751**	**$77,751**	**$80,861**	**$80,861**

* Does not include inflation estimates