

# Tacoma Power

## Q2 2017 Energy Risk Management Update

Ray Johnson

Manager, Rates & Energy Risk

# Agenda

**1**

Wholesale Net Revenues

**2**

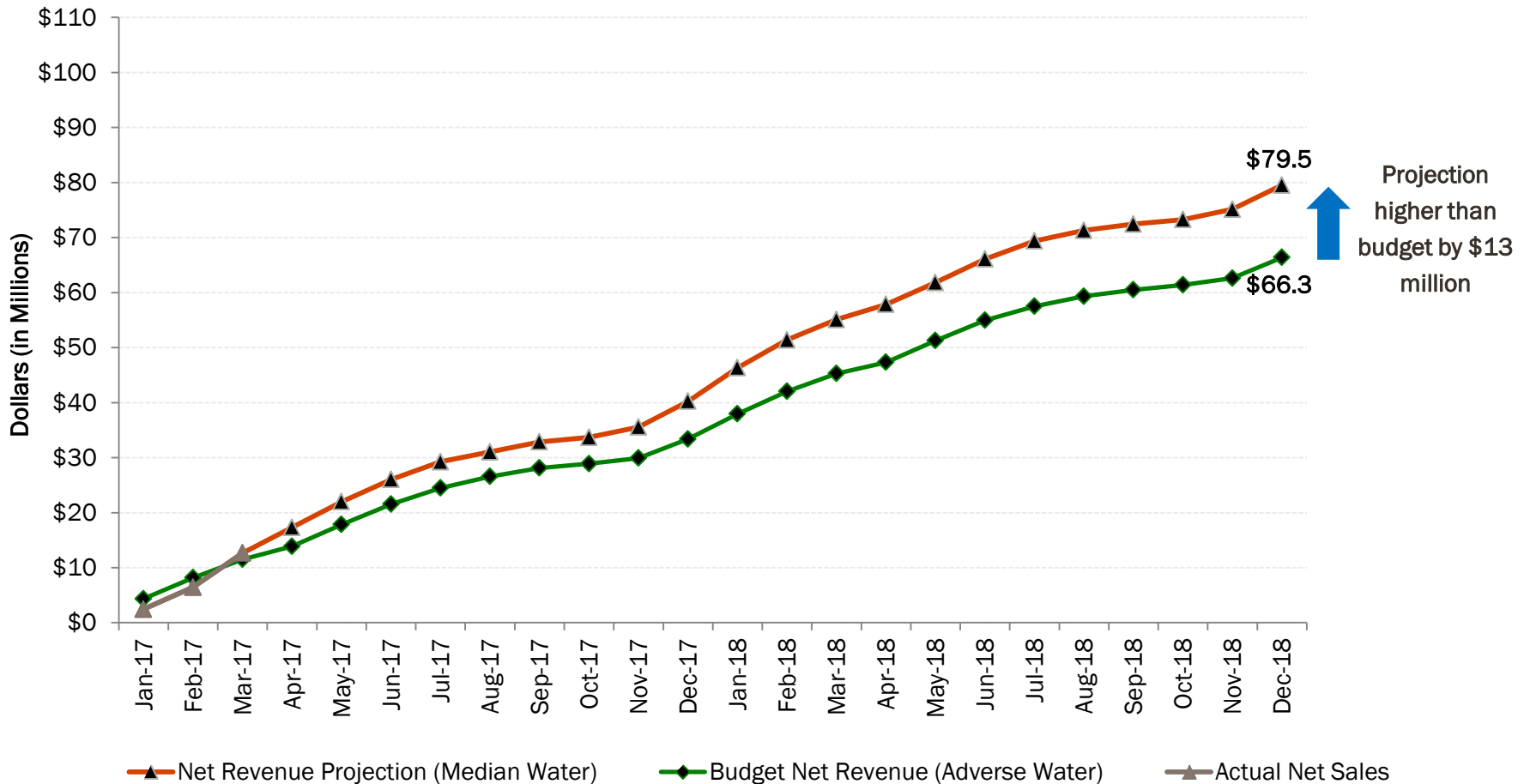
Hedging Program

# Wholesale Net Revenues

## Section 1

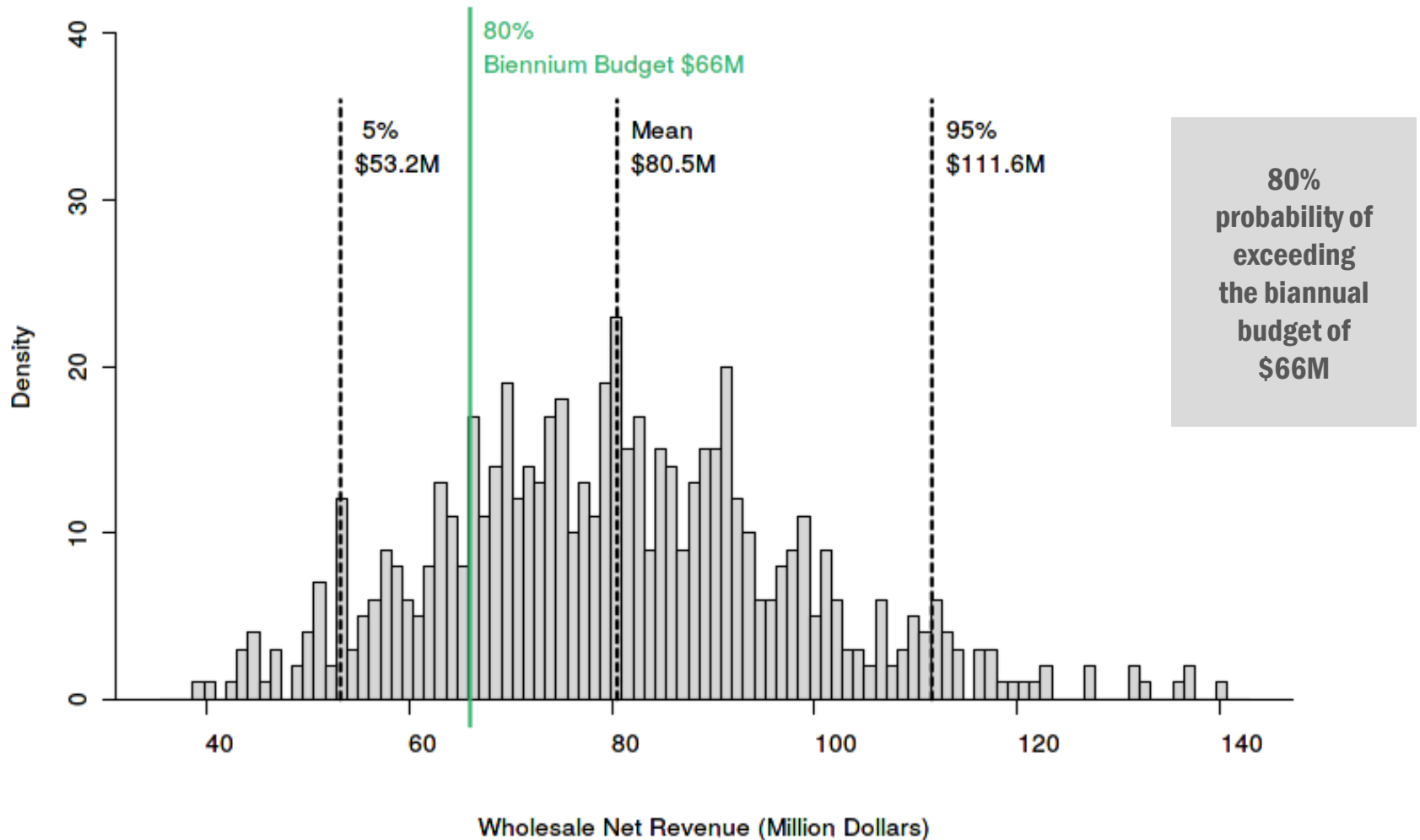
## Commercial Operations Update

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



## Commercial Operations Update

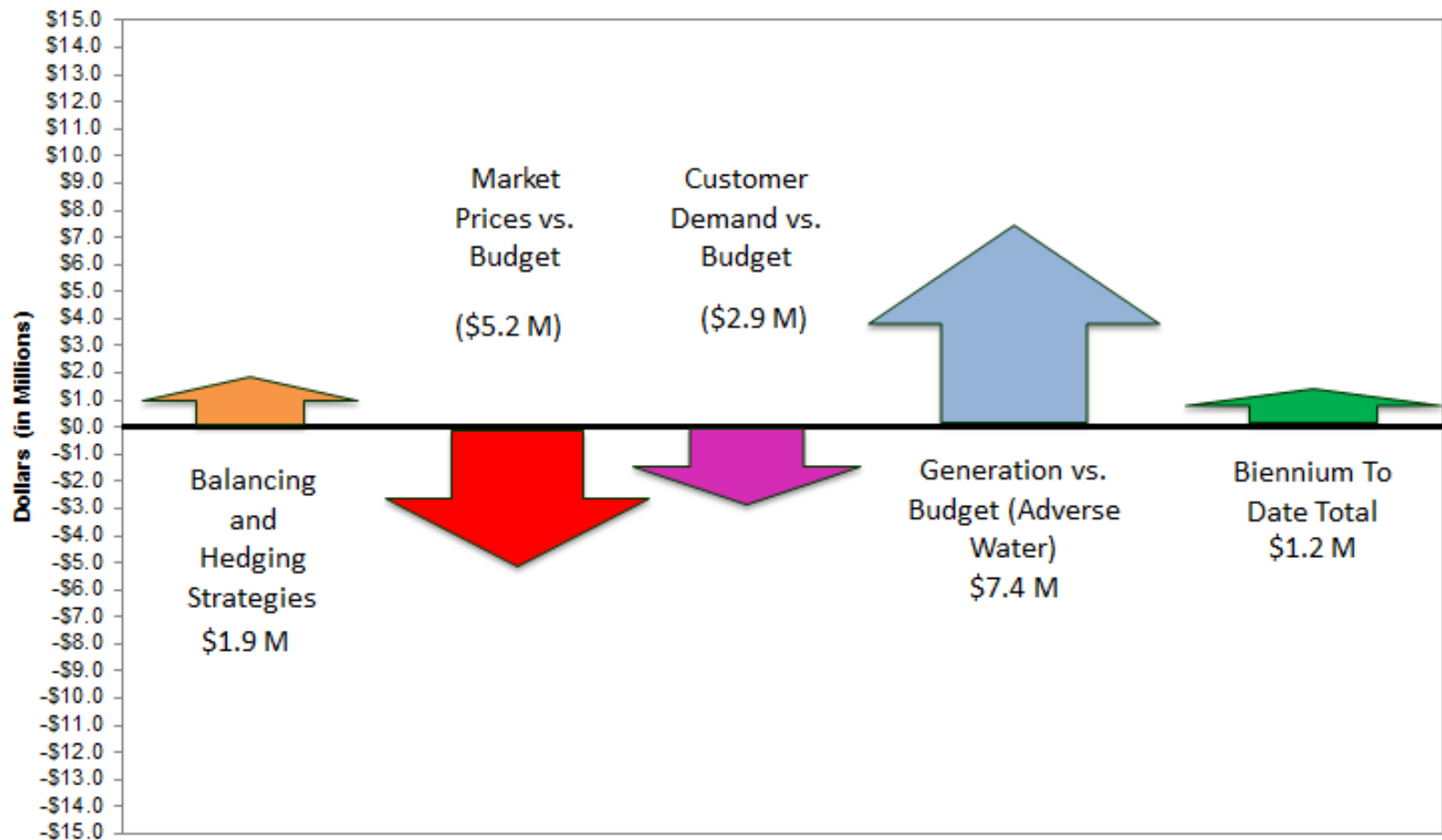
# Simulation of Biennial Net Revenues



## Commercial Operations Update

# Cumulative Net Wholesale Revenue Variance

January 2017 – March 2017



# Hedging Program

## Section 2

## Hedging Program

# 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.

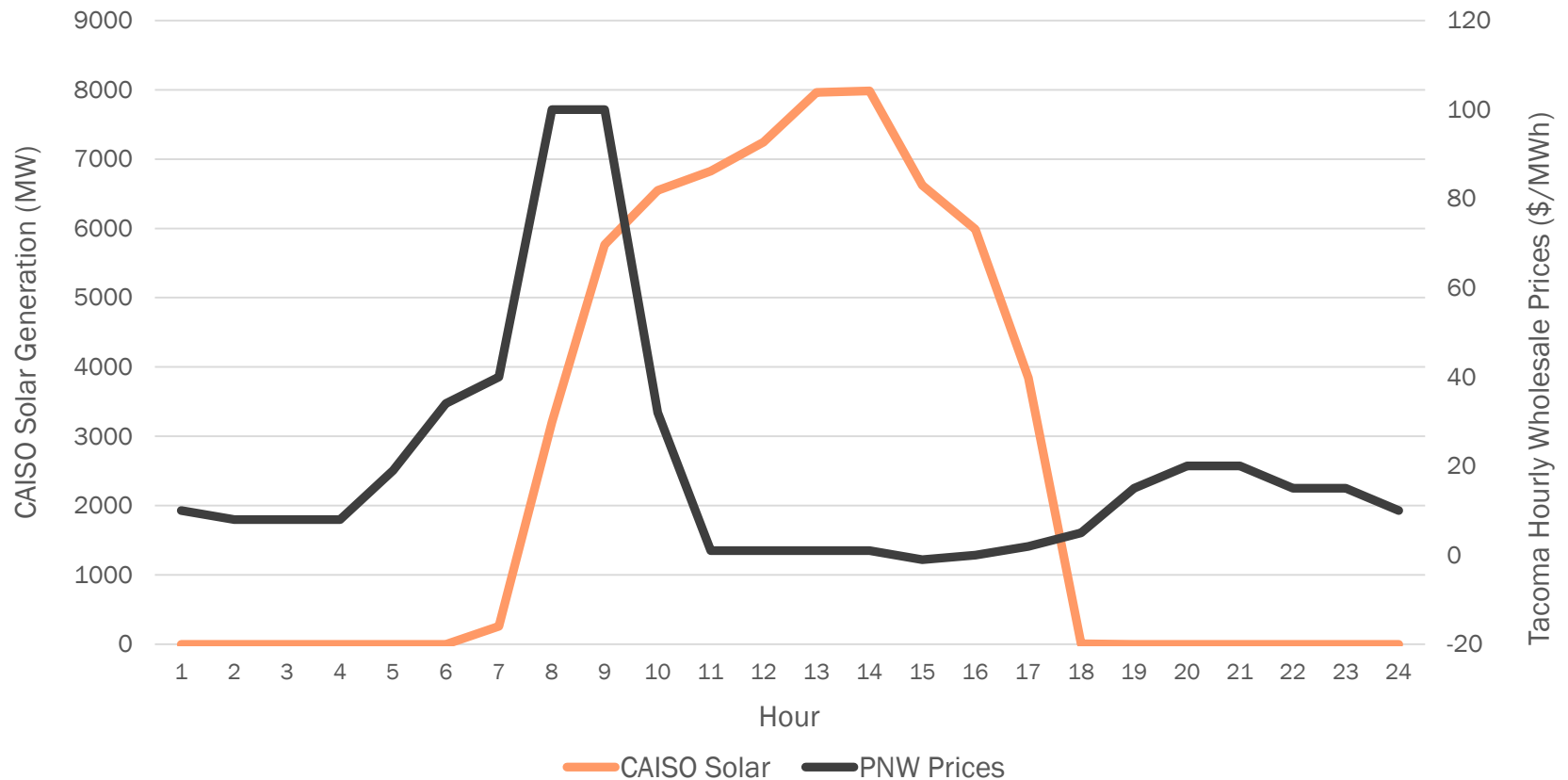
The program has a two year horizon, and utilizes physical forward contracts.

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

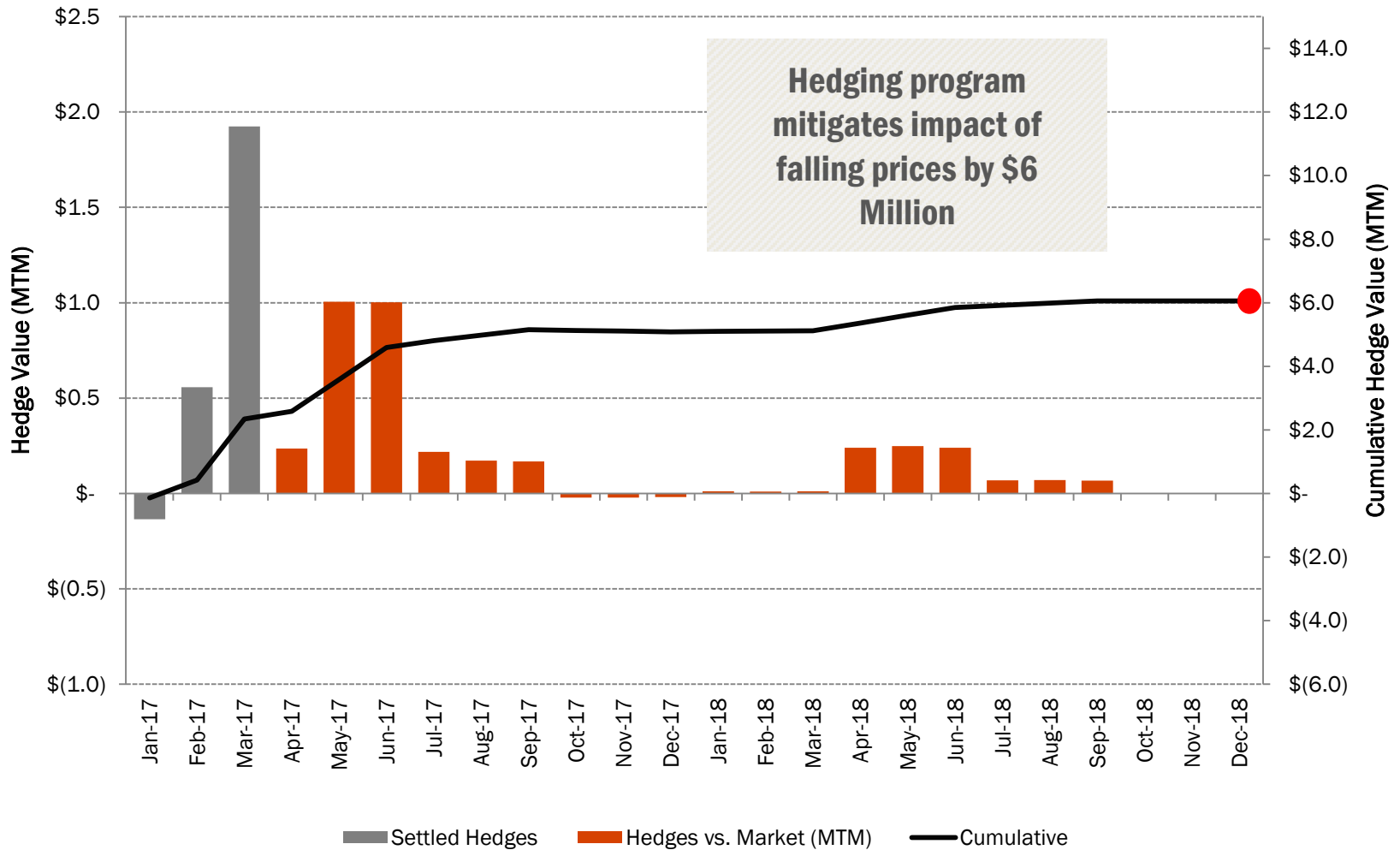
## Hedging Program

# Solar Generation's Impact on Prices (2/28/2017)



## Hedging Program

# 2017-18 Program Performance



## Credit Risk Management

# 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.

## Credit Exposures

# Top 15 Credit Exposures

Rank	Counterparty	Credit Rating	Exposure	LC Collateral	Loss in Event of Default
1	Pacific Northwest Generating Cooperative, Inc.®	NR	\$2,270,237		\$2,270,237
2	Powerex Corp.	AA	\$2,179,532		\$2,179,532
3	TransAlta Energy Marketing (US) Inc.	BB+	\$1,526,222	\$2,750,000	\$0
4	Avangrid Renewables, LLC	BBB+	\$1,373,649		\$1,373,649
5	Morgan Stanley Capital Group, Inc.	BBB+	\$1,233,033		\$1,233,033
6	Shell Energy North America (US), L.P.	A	\$1,061,101		\$1,061,101
7	Brookfield Energy Marketing LP	BBB	\$1,043,746	\$2,000,000	\$0
8	EDF Trading Limited	BBB	\$742,378		\$742,378
9	Bonneville Power Administration	AA-	\$665,130		\$665,130
10	Exelon Generation Company, LLC	BBB	\$629,639		\$629,639
11	Vitol, Inc.	BBB	\$563,043		\$563,043
12	BP Energy Company	A-	\$391,114		\$391,114
13	Public Service Company of Colorado	A-	\$368,140		\$368,140
14	Portland General Electric Co.	BBB	\$354,219		\$354,219
15	Macquarie Energy, LLC	A	\$208,678		\$208,678

# WIDE AREA NETWORK PROJECT

## TACOMA POWER/MASON COUNTY PUD #3 INTERAGENCY AGREEMENT

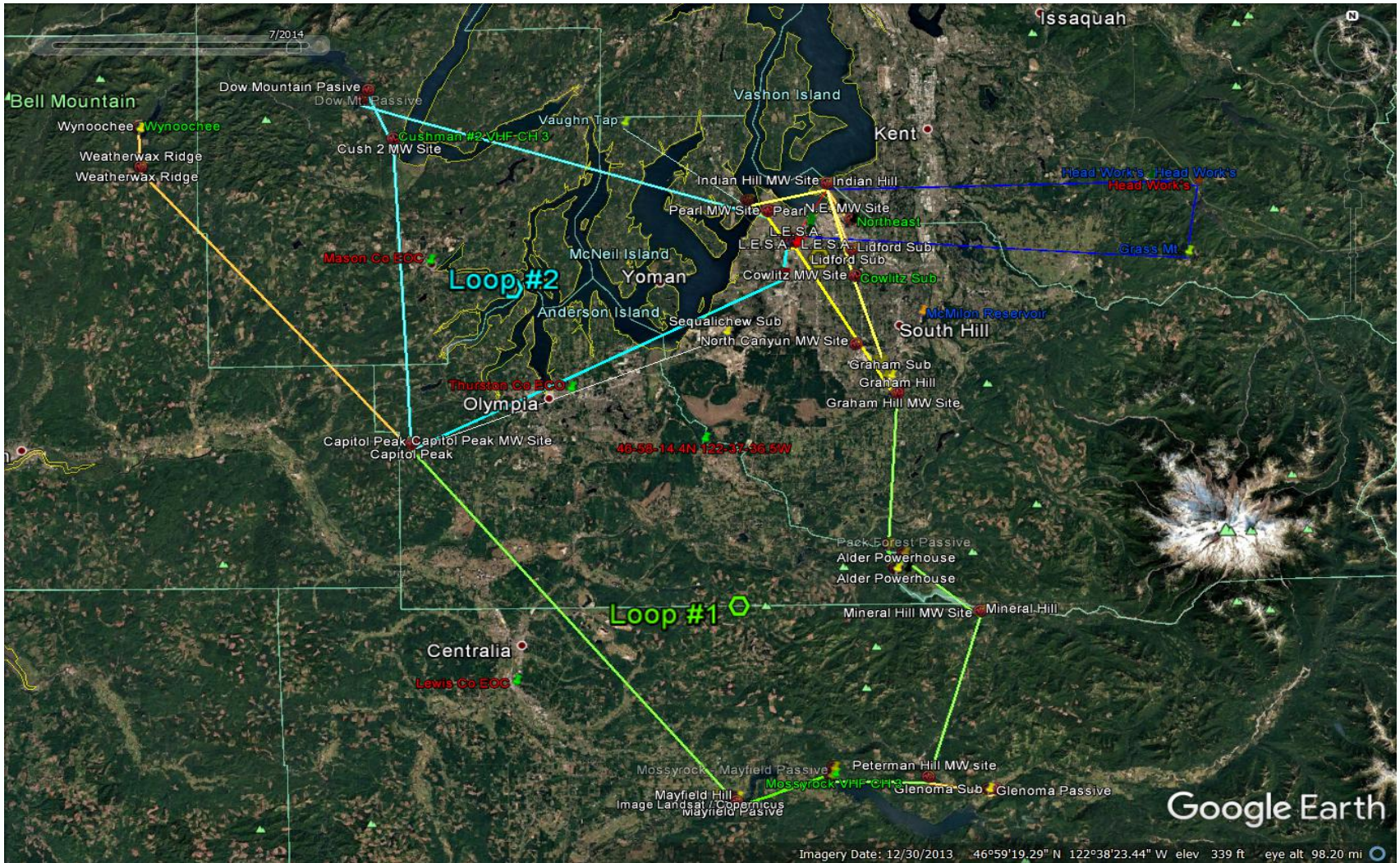
TIM BAGWELL, UTS  
APRIL 26<sup>TH</sup>, 2017



# AGENDA

- **Project overview**
- **Interagency Agreement**
- **Objectives**
- **Project Scope**
- **Cost Breakdown**
- **Expected Return on Investment**

# PROJECT OVERVIEW - HISTORY

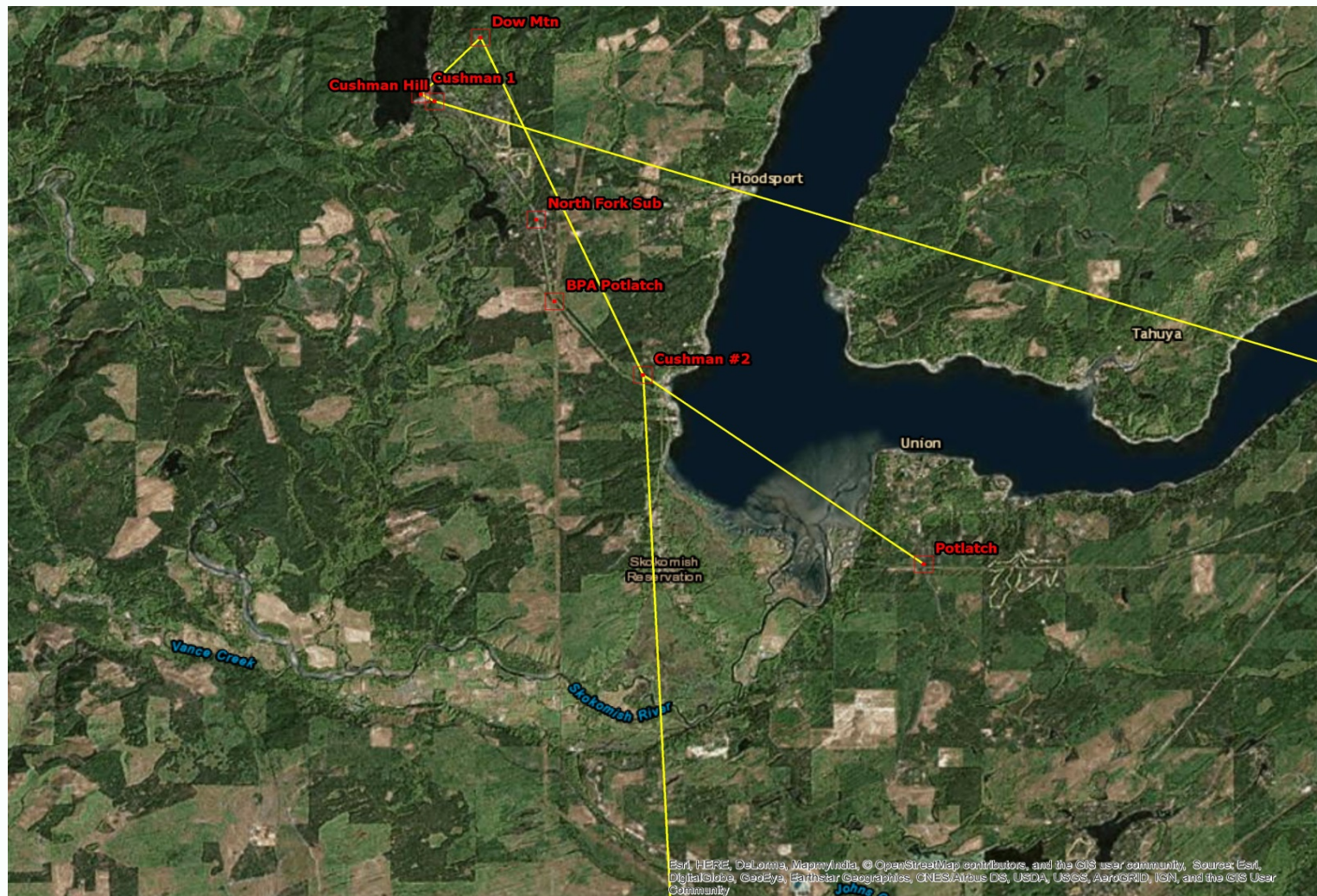


# SCOPE AND OBJECTIVES

## Objectives:

- Leverage neighboring utility infrastructure to mitigate costs
- Provide resiliency to both participating utilities
- Provide backhaul services to high demand bandwidth requirements (e.g., video surveillance)
- Automate network protection via multiple routes
- Reduce operational and maintenance costs & update capital investments
- Segment critical network infrastructure from business operational network

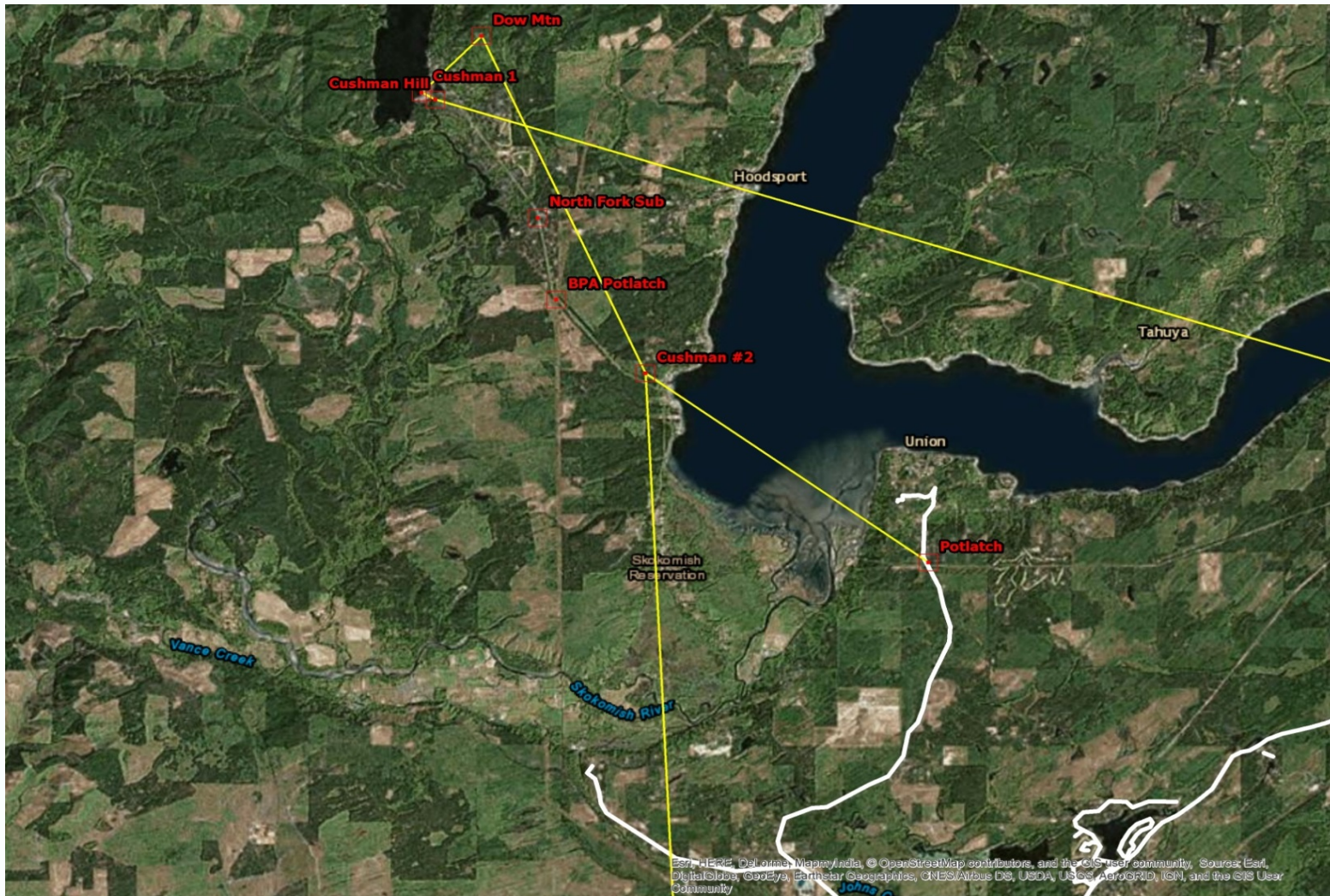
# EXISTING FOOTPRINT – TPWR MICROWAVE NETWORK AT CUSHMAN



Key

TPWR MW

# EXISTING FOOTPRINT – MASON COUNTY PUD3

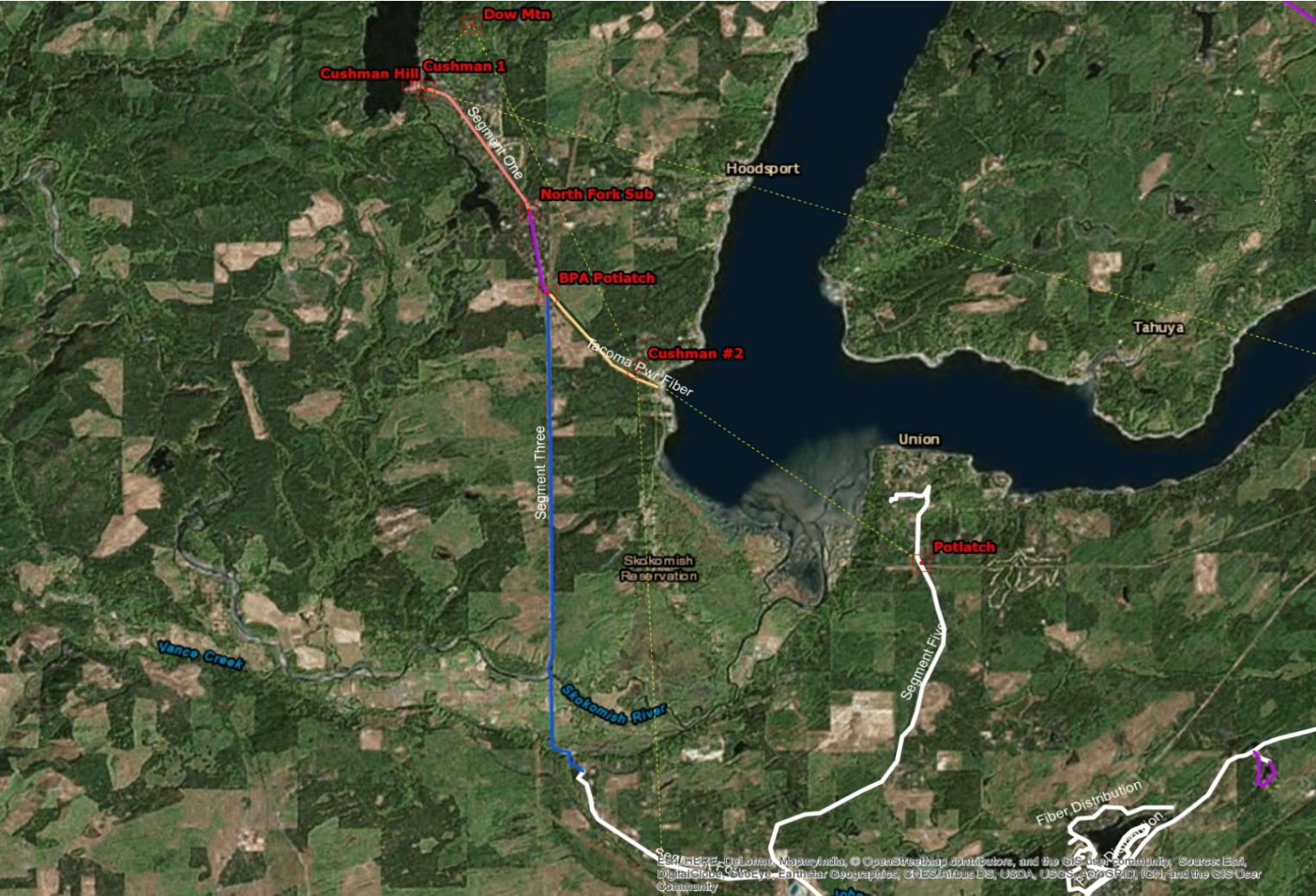


Key

- MCPUD3
- TPWR MW

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# PROPOSAL – FUTURE STATE



Key

	Exist. MCPUD3
	New MCPUD3
	New MCPUD3
	New MCPUD3
	New TPWR

# COST BREAKDOWN –RECURRING CHARGES

- Tacoma Power will pay \$31,524.00 per year for MCPUD3's fiber operations fee
  - 19.16 miles of existing fiber plant
  - PUD will also provide 1Gbps lit service back to our Click! network
- MCPUD3 will pay \$7,671.60 per year for Tacoma Power's fiber operations fee
  - Mason County has expressed interest in our Cushman Hill microwave tower

# COST BREAKDOWN – CAPITAL COSTS

- Tacoma Power will pay \$191,000 for MCPUD3's fiber installation cost
  - 8.46 miles will be new construction
- MCPUD3 will pay \$100,000 for TPU's fiber installation cost
  - 1.79 miles will be new construction

# EXPECTED RETURN ON INVESTMENT

- Introduce network diversification to each utility at a fraction of the cost - \$2,500,000 in construction savings
- Network survivability increases by 400%
- Lock in Tacoma Power's ability to address network connectivity in the Cushman area for the next 20 years
- Promote interagency cooperation.
- Four additional interagency agreements will be introduced in support of the WAN Capital Project

# TOTAL QUALITY PROGRAM

## 2016 ANNUAL REPORT



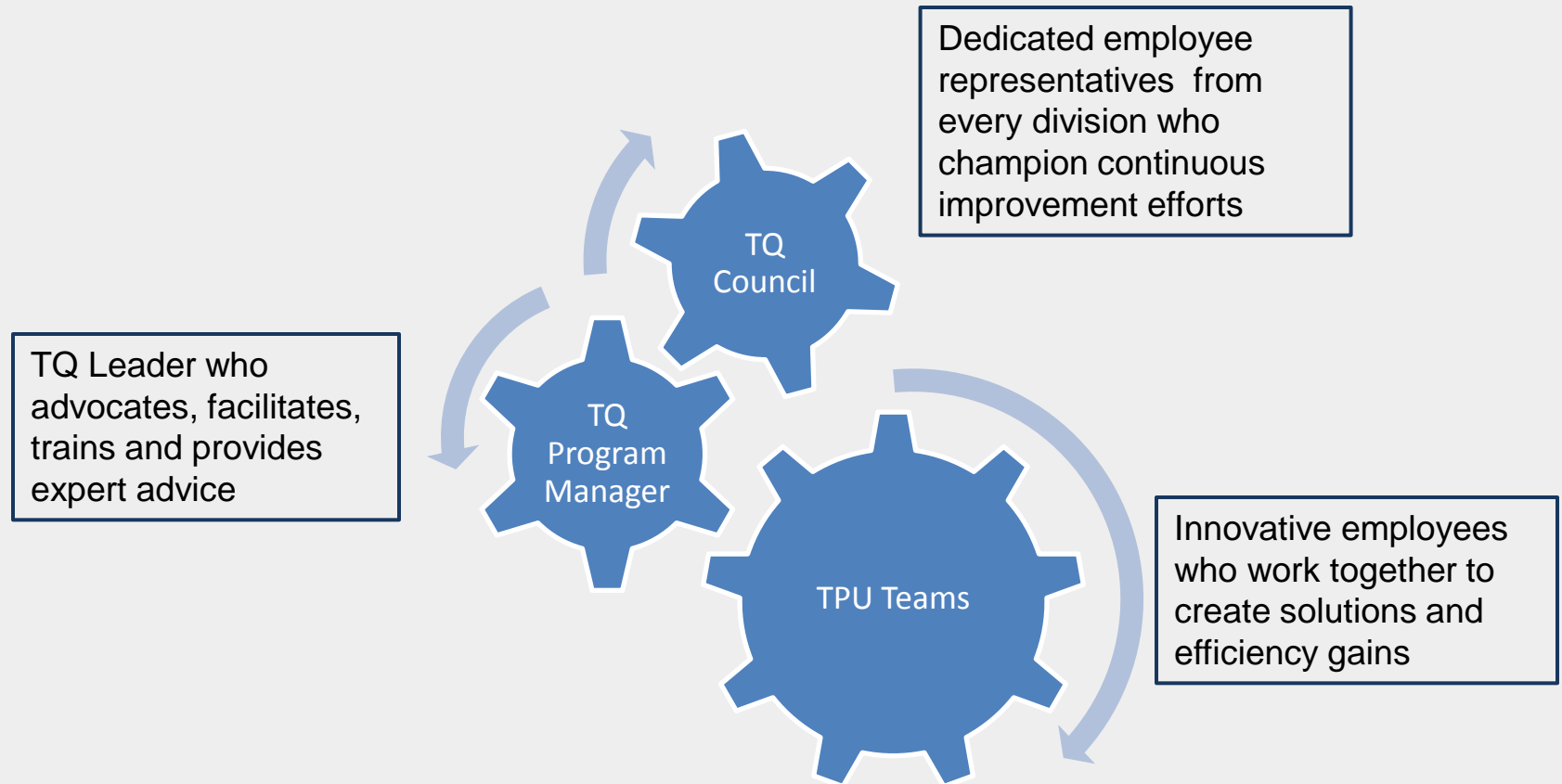
# TOTAL QUALITY VISION



**TPU encourages an open and collaborative environment that fosters continuous improvement for positive changes to benefit customers and employees. At TPU, Total Quality is integrated into our culture and strives to make a measurable difference.**

**The TPU TQ council and program manager serve as continuous improvement champions, advocates and resources for work teams across TPU.**

# TOTAL QUALITY PROGRAM COMPONENTS



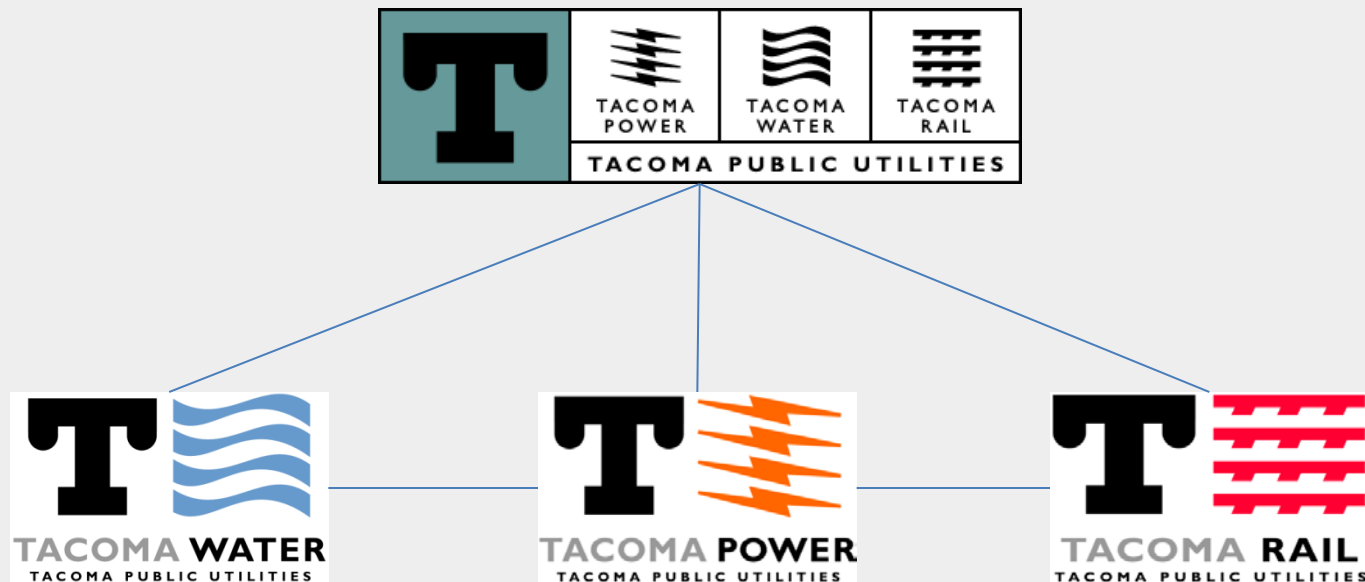
# BROUGHT TO YOU BY...



**The TPU Total Quality Council**

# HELPING EMPLOYEES & TEAMS WORK CROSS-FUNCTIONALLY

- TQ council members build relationships and learn about different business units
- Most teams' members come from different divisions or departments



# First TQ/TPU Team Recognition Awards



- Promote continuous improvement
- Recognize outstanding teams
- Share case studies to inspire others

**Nominated projects needed to demonstrate:**

- Excellence and TPU values
- Innovation
- Teamwork



## **Notable teams from 13 nominations:**

### **LED Street Lights**

- **Plan to install 16,400 new LED fixtures for the City of Tacoma to increase energy efficiency and reduce maintenance costs**
- **Created a new rate for capital and energy cost recovery so the City could afford the installation**

### **Video Inspection**

- **Customers use mobile devices for video inspections to verify energy-saving equipment install**
- **Saves time, money and improved customer satisfaction**

**And the top three teams are....**

## Third place:

### DSM Central Implementation Project and Team

How do we handle \$10 million in incentives for residential and commercial customers?

- Over 2,000 customers and over 30 vendors using grants, rebates and other incentives
- Complex process: qualifying, type of program, vendor assignment, before/after inspections, multiple contacts/visits, permitting

## Old way:



# **DSM Central Implementation Project and Team**

- **New way**
  - **Completely electronic process**
  - **Improved tracking and reporting**
  - **Contractor portal access**
  - **Integrated 17 Conservation and 2 Solar programs**
  - **Reduced processing time for rebates, loans and grants**
  - **Uses SAP for payment processing**
  - **Reduced need for over 1200 hours of temporary help**

**Second place:**

## **Cushman Hatcheries Design and Construction**



***North Fork Skokomish Salmon Hatchery***



***Saltwater Park Sockeye Hatchery***



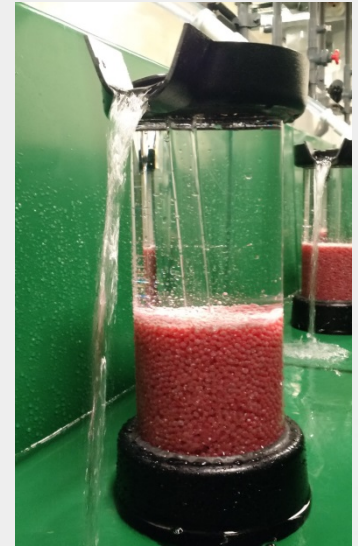
***First release  
of spring  
Chinook into  
the North Fork  
Skokomish  
River  
(Aug. 2016)***



# Cushman Hatcheries Design and Construction

- State-of-the-art technology
- Innovative circular tanks
- Submerged pipeline system for discharge
- Advanced disease control and marking techniques
- First utility in the state to manage our own hatcheries

*First eggs at  
the sockeye  
hatchery  
(Dec. 2016)*



*Drawdown of Lake Kokanee  
to install North Fork hatchery  
discharge pipelines*



# **First place: Community Solar**

# TQ 2017 GOALS

## Council:

- Increase number of team recognition nominations
- Increase division/work group participation
- Develop peer sharing, learning and networking

## Program Manager:

- Support council's Team Recognition and peer sharing effort
- Design and deliver facilitation training for TQ council members
- Continue TPU-wide facilitation and Organizational Change Management services

**The Total Quality program  
strengthens collaboration and  
the team culture to empower  
employees to make a positive  
difference.**

