Click! Budget and Rate Increases

Tacoma Public Utility Board – Study Session
September 26, 2018

Tenzin Gyaltsen
Click! General Manager

Final

CLICK! NETWORK
TACOMA PUBLIC UTILITIES

Agenda

- Background
- Challenges
- Potential solutions
- Click! budget adjustments
- FTE status
- 2019-2020 Click! proposed budget
- Cable TV and Internet rate tables
- Market rate comparison
- Summary
- Next steps

Background

- For the 2017-2018 biennium, Click! is expected to post a deficit of approximately $6.5M
- A preliminary draft budget for the 2019-2020 biennium projected a deficit of approximately $9.9M
- Click! Network financial deficits have historically been funded by Tacoma Power
- Cable TV rate increases were not implemented in 2015 and 2016
- The 2017 Cable TV rate increase implemented, but 2018 was postponed
- On an A La Carte basis, Click! Cable TV rates are under market
- No Wholesale Internet rate increases implemented in the last decade

Challenges

- Superior Court decision prohibits the use of Tacoma Power funds to pay for Click! deficits
- City's General Fund is not in a position to support Click! deficits
- It is not entirely clear if City Council can/will approve Tacoma Power budget with a Click! deficit
- Transition to a Public/Private Partnership is expected to take 12 to 18 months
- It is unclear, at best, whether Tacoma Power can fund Click! business transition costs such as retention and severance for employees
- These conditions require Click! to present a fully self-funded budget

Potential solutions

- Raise Cable TV rates
  - 30-day FCC customer notice requirement
  - 45 days to complete approval process
  - Could effectuate as early as 12/1/18 if approved by 9/30/18
- Raise Wholesale Internet rates
  - 90-day contractual advance notice provision
  - Could effectuate as early as 1/1/19 if noticed by 9/30/18
- Reduce O&M and Capital costs
  - Reduce FTE to 54 via attrition and augment with contract support
  - Limit capital expenditures to critical needs and plant extensions
  - Recognize transitional costs such as retention and severance
  - Measures are drastic and in response to the extraordinary circumstance

Click! budget adjustments [Reduced Capital and FTEs]

($ in millions)	Status Quo Preliminary Budget	Cost cuts and additions				2019-2020 Budget Once Each Year	
		Capital Cuts	Reduce marketing	Reduce FTEs and other costs	Add Transition costs	2018/19 9.8% Cable plus $5 Internet	2020 18% Cable plus $5 Internet
Cash Flow Deficit before increases and cuts	($9.94)	($9.94)	($9.26)	($8.91)	($6.31)	($7.56)	($5.14)
Revenue from Cable TV rate increase						$1.22	$2.36
Revenue from ISP Advantage rate increase						$1.34	$2.66
Changes in taxes, bad debt & programming costs						($0.14)	$0.13
Capital cuts		$0.68					
Marketing cuts			$0.36				
Labor adjustments (FTE cuts and augmentation with contract labor)				$2.22			
Other cost cuts (assessments, etc.)				$0.37			
Transition costs					($1.25)		
Net change in costs	$0.00	$0.68	$0.36	$2.59	($1.25)	$2.42	$5.15
Cash Flow Deficit after increases and cuts	($9.94)	($9.26)	($8.91)	($6.31)	($7.56)	($5.14)	$0.02
Estimated Cable customer losses	(1,963)					(1,526)	(2,979)
Cable customer loss %	-15%					-12%	-23%

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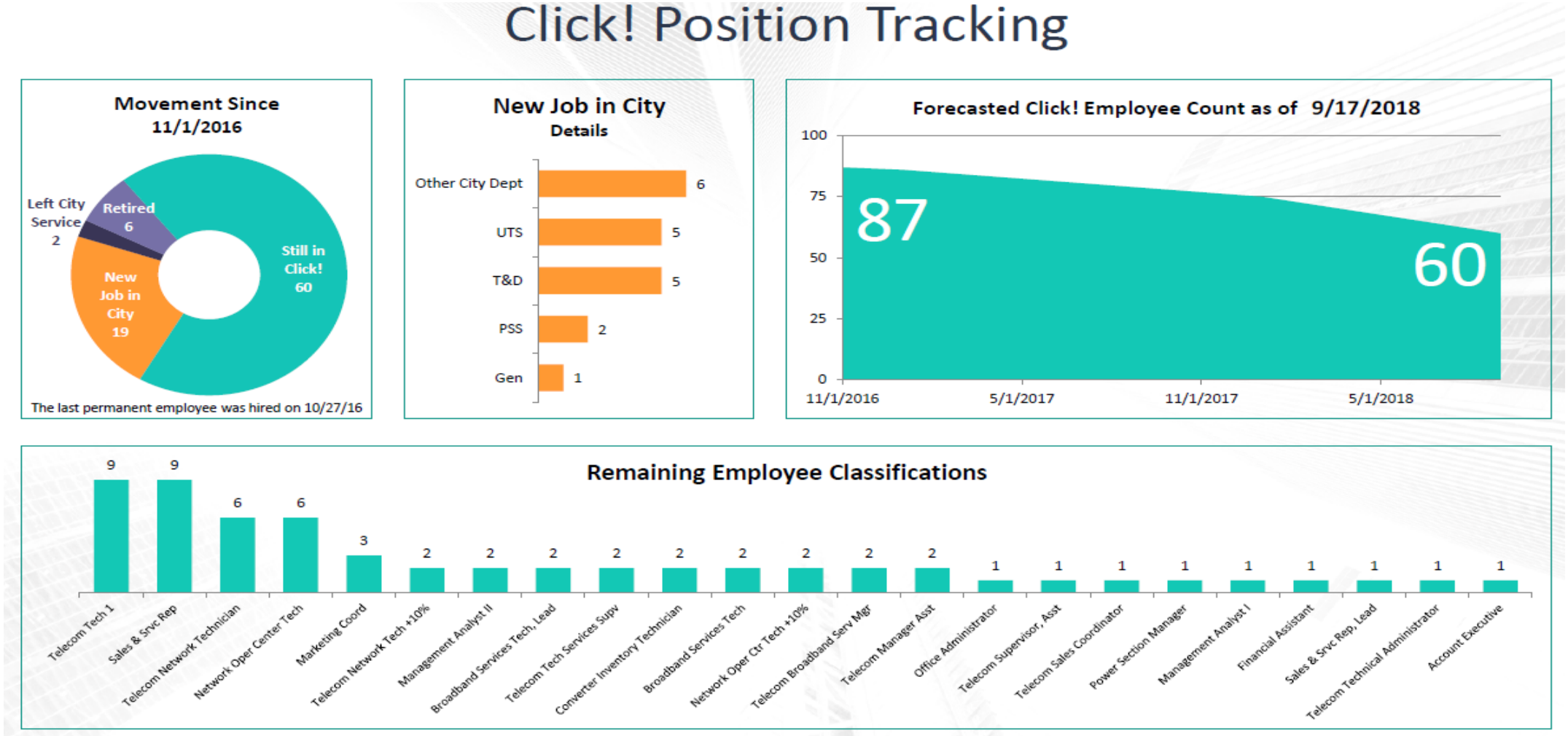
FTE status



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TACOMA PUBLIC UTILITIES

2019-2020 Click! proposed budget

($ in millions)	Current		Proposed	Increase/-Decrease		Increase/-Decrease	
	17/18 Projected	17/18 Budget	19/20 Budget	Budget to Projected		Budget to Budget	
Revenues							
Cable TV	$35.06	$40.03	$33.54	-$1.52	-3.8%	-$6.49	-16.2%
Cable Modem (ISP)	14.67	18.27	18.43	3.76	20.6%	0.16	0.9%
Broadband	2.72	3.00	2.76	0.04	1.4%	-0.24	-8.0%
Miscellaneous	0.01	0.00	0.00	-0.01	-	0.00	-
Intra Trans In	1.00	0.00	0.00	-1.00	-	0.00	-
Total Revenue	$53.45	$61.30	$54.73	$1.28	2.1%	-$6.57	-23.3%
Total O&M	$56.85	$67.96	$52.92	-$3.93	-5.8%	-$15.04	-22.1%
Operating Cash Flow (OCF)	-$3.40	-$6.66	$1.81	$5.21	-78.2%	$8.47	-127.2%
Additions & Replacements & Capital	$3.10	$20.32	$1.80	-$1.30	-6.4%	-$18.52	-91.2%
Net OCF	-$6.50	-$26.98	$0.02	$6.51	-24.1%	$27.00	-100.1%

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TACOMA PUBLIC UTILITIES

Cable TV rate table

Cable TV Rates Inside Tacoma

	Customers	PACKAGE	CURRENT RATE	2019 RATE	2020 RATE	2019 IMPACT	2020 IMPACT	**BIENNIAL IMPACT**
9.8% & 18% Annual Increases	100%	BROADCAST	$ 19.69	$ 21.62	$ 25.51	$ 1.93	$ 3.89	**$ 5.82**
	82%	STANDARD[1]	$ 59.99	$ 65.87	$ 77.73	$ 5.88	$ 11.86	**$ 17.74**
	28%	DIGITAL[2]	$ 81.99	$ 90.03	$106.23	$ 8.04	$ 16.20	**$ 24.24**

Cable TV Rates Outside

	Customers	PACKAGE	CURRENT RATE	2019 RATE	2020 RATE	2019 IMPACT	2020 IMPACT	**BIENNIAL IMPACT**
9.8% & 18% Annual Increases	100%	BROADCAST	$ 21.29	$ 23.38	$ 27.58	$ 2.09	$ 4.21	**$ 6.29**
	82%	STANDARD[1]	$ 62.39	$ 68.50	$ 80.83	$ 6.11	$ 12.33	**$ 18.44**
	28%	DIGITAL[2]	$ 87.39	$ 95.95	$113.23	$ 8.56	$ 17.27	**$ 25.84**

Set-Top-Box Fees

Equipment	29%	DIGITAL ADAPTER	$ 1.10	$ 1.20	$ 1.30	$ 0.10	$ 0.10	**$ 0.20**
	17%	STANDARD RECEIVER	$ 5.50	$ 6.00	$ 6.50	$ 0.50	$ 0.50	**$ 1.00**
	47%	HI DEF RECEIVER	$ 7.75	$ 8.50	$ 9.25	$ 0.75	$ 0.75	**$ 1.50**
	34%	HD DVR	$ 14.25	$ 15.25	$ 16.25	$ 1.00	$ 1.00	**$ 2.00**

[1]Standard is inclusive of Broadcast

[2]Digital is inclusive of Broadcast and Standard

Wholesale Internet rate table [$5 per tier per year]

Service Tiers*	Average Retail	Wholesale Rates			Wholesale % Split			Proposed Speeds
		Current	2019	2020	Current	2019	2020	
Vacation	$10.00	$4.00	$9.00	$14.00	40%	90%	140%	
Res_6Mbps	$32.95	$19.17	$24.17	$29.17	58%	73%	89%	10 Mbps
Res_12Mbps	$42.95	$22.17	$27.17	$32.17	52%	63%	75%	25 Mbps
Res_20Mbps	$59.95	$32.00	$37.00	$42.00	53%	62%	70%	50 Mbps
Res_30Mbps	$69.95	$40.00	$45.00	$50.00	57%	64%	71%	75 Mbps
Res_55Mbps	$79.95	$55.97	$65.00	$70.00	70%	81%	88%	100 Mbps
Res_100Mbps	$89.95	$60.00	$65.00	$70.00	67%	72%	78%	100 Mbps
Com_6Mbps	$42.95	$22.37	$27.37	$32.37	52%	64%	75%	10 Mbps
Com_12Mbps	$69.95	$33.59	$38.59	$43.59	48%	55%	62%	25 Mbps
Com_20Mbps	$89.95	$53.99	$58.99	$63.99	60%	66%	71%	50 Mbps
Com_30Mbps	$99.95	$60.00	$65.00	$70.00	60%	65%	70%	75 Mbps
Com_55MbpsNEW	$109.95	$66.00	$101.00	$106.00	60%	92%	96%	100 Mbps
Com_100MbpsNEW	$149.95	$96.00	$101.00	$106.00	64%	67%	71%	100 Mbps

*Standard tiers of service. In addition to these standard tiers, individual ISPs have additional service tiers that are unique to their business. The wholesale rate of such other service tiers will also increase commensurately. Still working on setting Fiber-to-the-Premise service rates.

Market rate comparison

Inside Tacoma	Click!		Comcast*		$ Difference		% Difference	
	Broadcast	Standard	Broadcast	Standard	Broadcast	Standard	Broadcast	Standard
Sep-2018	$19.69	$59.99	$23.45	$89.99	($3.76)	($30.00)	-19%	-50%
Dec-2018	$21.62	$65.87	$23.45	$89.99	($1.83)	($24.12)	-8%	-37%
Jan-2020	$25.51	$77.73	$23.45	$89.99	$2.06^	($12.26)	8%	-16%

*Historically used Comcast's A La Carte rates for comparisons
^We anticipate Comcast to implement rate increases in 2019 and 2020 that would produce a gap

- Room to implement proposed Cable TV rate increases
- May not be desirable to fully close the market gap
  - Competitors have the ability to bundle products and offer deep discounts on the their A La Carte prices
  - Continue to meet policy goal of maintaining below market rates

Summary

- The proposed 2019-2020 Budget entails drastic cost cuts and revenue enhancements
- Labor and capital cuts are necessary, but not sustainable long-term
- Augmentation of contract labor achieved as a result of a Letter of Agreement with IBEW Local 483
- Raising Cable TV and wholesale ISP Advantage rates is necessary
- The proposed “transition” budget temporarily resolves legal and budgetary constraints
- The proposed budget should not be viewed as a viable financial model

Next steps

Meeting Dates

GPFC Meeting – October 2, 2017
TPU Board Meeting – Approval – October 24, 2018
City Council 1st Reading – November 13, 2017
City Council 2nd Reading – November 20, 2017

Notifications

ISPs (90-day advance notice) – by October 1, 2018
Cable TV customers (30-day advance notice) – by December 1, 2018

Rate increase effective dates

Cable TV – January 1, 2019
ISP Advantage rates – January 1, 2019

UTILITY BILL PAYMENT ASSISTANCE PROGRAMS

TPU BOARD STUDY SESSION
SEPTEMBER 26, 2018

Francine Artis
Customer Services

TACOMA POWER | TACOMA WATER | TACOMA RAIL
TACOMA PUBLIC UTILITIES

Tacoma

UTILITY BILL PAYMENT ASSISTANCE BUDGETS

Biennium Budgets

Division	2017/2018		2019/2020
	Budget	Remaining	Proposed Budgets
Power	$2,000,000	$1,713,452	$2,500,000
Water	$275,000	$218,643	$325,000
Wastewater	$195,000	$163,400	$212,000
Surface Water	$60,000	$44,902	$77,000
Solid Waste	$120,000	$79,740	$137,000

TACOMA POWER TACOMA WATER TACOMA RAIL
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CUSTOMER SOLUTIONS

Labor and Operations & Maintenance

- These costs are paid through the normal allocations for Customer Services .
- None of these expenses are included in the budgets for the bill assistance programs.

	2017/2018	2019/2020
Labor	$2,007,797	$2,552,803
Operations & Maintenance	$187,079	$222,238

OUTREACH/ENGAGEMENT ACTIVITIES

Conducted onsite enrollments and participated in several community events

- Mercy Housing (3)
- Greater Lakes Mental Health
- Hilltop Street Fair
- Neighborhood Council meetings

Upcoming events

- Habitat for Humanity
- Tacoma Housing Authority
- Eastside Community Center Grand Opening
- Fife Harvest Festival

Tacoma Power Budget Overview
2019/2020 Biennium

Chris Robinson, Tacoma Power
September 26, 2018

TACOMA POWER
TACOMA PUBLIC UTILITIES

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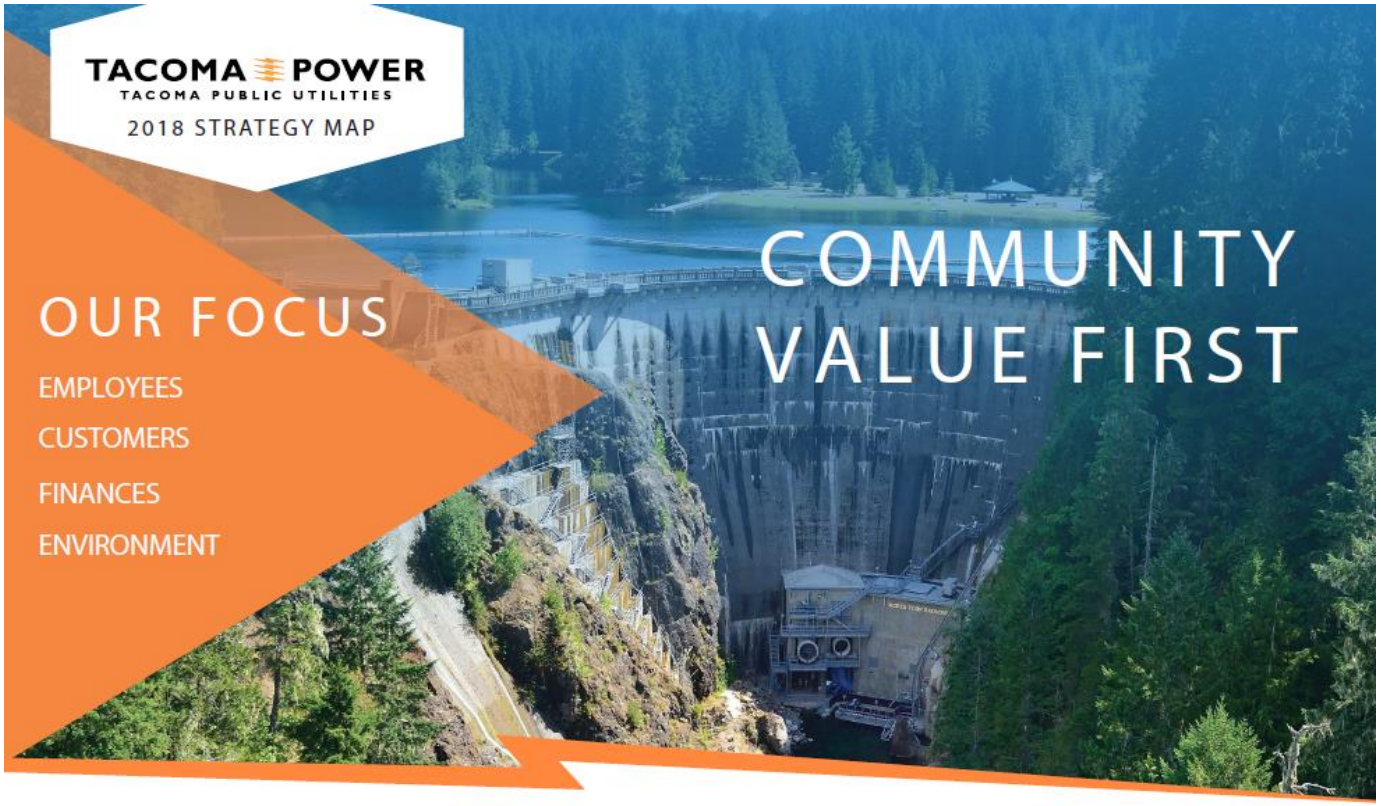
Tacoma Power Strategy



TOP PRIORITIES NOW

Put Safety 100% First | Support Click! Network | Leadership Development

Listen to our Community Leaders | Participate in New Market Opportunities

STRATEGIC INITIATIVES

- **Listen to our Community & Customer Focus**
  - Develop a Strategic Communications Plan
  - Develop Digital Engagement Strategy and Roadmap
  - Develop Enhanced Outage Communications
  - AMI Implementation

- **Financial**
  - Modernize Wholesale Tools and Technologies
  - Pursue new Wholesale Products, Services and Customers
  - Implement Asset Management Roadmap
  - Stand up Construction Project PMO

- **Take care of our Environment**
  - Develop a Decarbonization Policy
  - Upgrade Tacoma's Street Lights
  - Evaluate Alternatives and Develop Transportation Electrification Proposals
  - Initiate Cowlitz Salmon Recovery and Restoration Program

- **Employee Focus**
  - Establish Safety Office
  - Develop TPU Administration Complex Master Plan

BUDGET RISKS AND MITIGATION

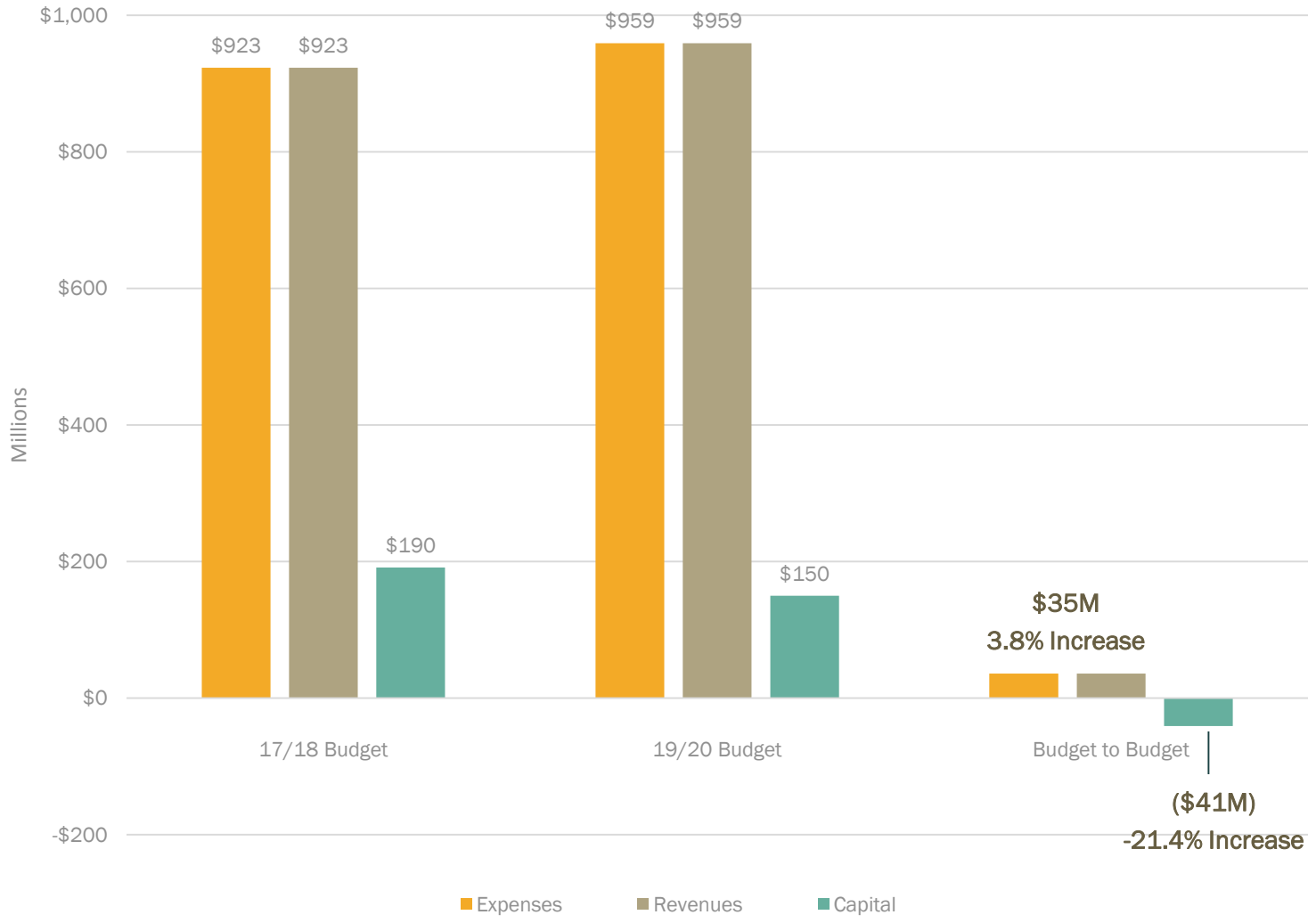
Risks

- BPA Rate Increase
- Wholesale market power prices
- Weather
- - Stream flows
- - Temperature
- New/Expanded Regulatory Mandates

Mitigation

- Adverse Water Planning
- Regular monitoring and reporting of revenue and expenses with adjustments as needed
- Wholesale Energy Risk Management program
- Use of Reserves
- - Current Fund balance
- - Rate Stabilization Fund
- Additional Financing
- - Line of Credit in lieu of bond financing
- Additional Rate Adjustments

BUDGET COMPARISONS

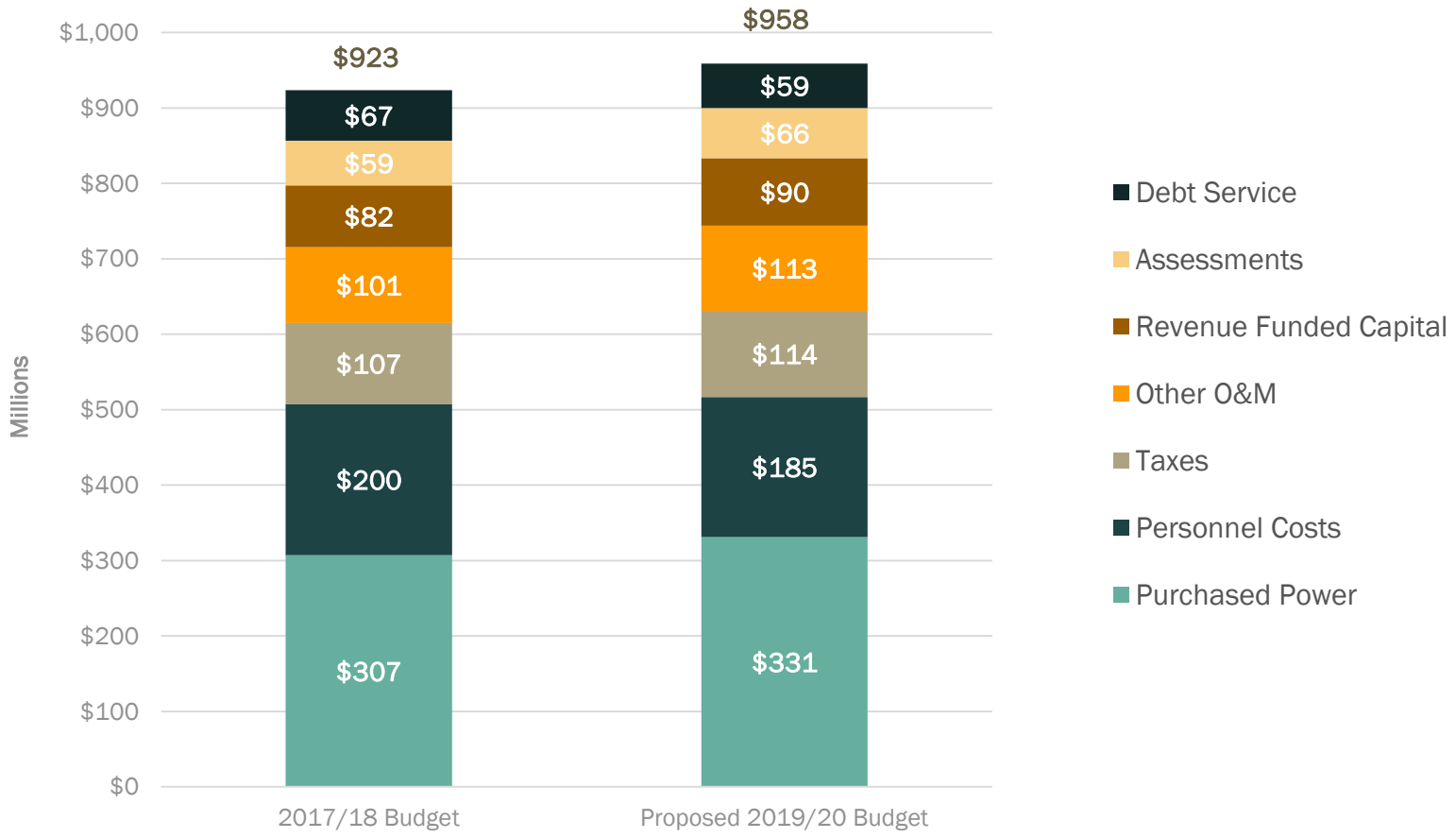


01 Preliminary O&M Budget

+ *Purchased Power*
+ *Personnel*
+ *FTEs*
+ *Taxes*
+ *Other O&M*
+ *Revenue Funded Capital*
+ *Assessments*
+ *Capital Projects*

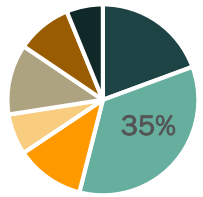
2019/20 Preliminary O&M Budget

Budget Proposal



Preliminary O&M Budget

Expense Components: Purchased Power

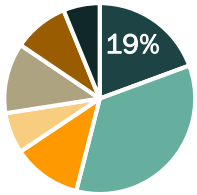


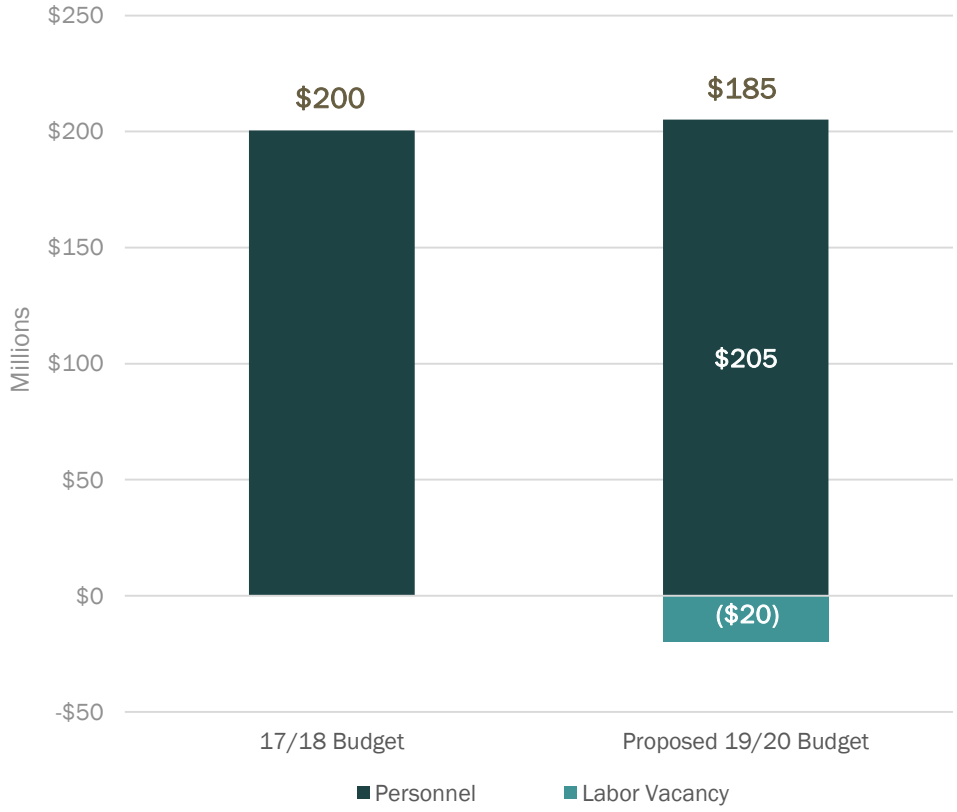
- Anticipating 4% BPA Power rate increase
- Anticipating 7% BPA Transmission rate increase
- New transmission purchases for wholesale sales into CA markets
- RPS compliance requirement increases REC's increase from 9% to 15% in 2020

Purchased Power	17/18 Budget	19/20 Budget	Budget to Budget	% Change
BPA Power	$235,019,650	$244,745,737	$9,726,087	4.1%
BPA Transmission	36,851,686	46,617,820	9,766,134	26.5%
Other Power Contract Costs	13,140,208	15,030,651	1,890,443	14.4%
Portfolio Purchases	18,257,989	17,729,860	(528,129)	-2.9%
RECs	3,807,504	7,166,866	3,359,362	88.2%
Total Purchased Power	**$307,077,037**	**$331,290,934**	**$24,213,897**	**7.9%**

Preliminary O&M Budget

Expense Components: Personnel



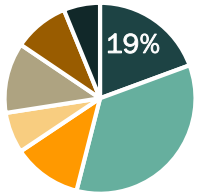


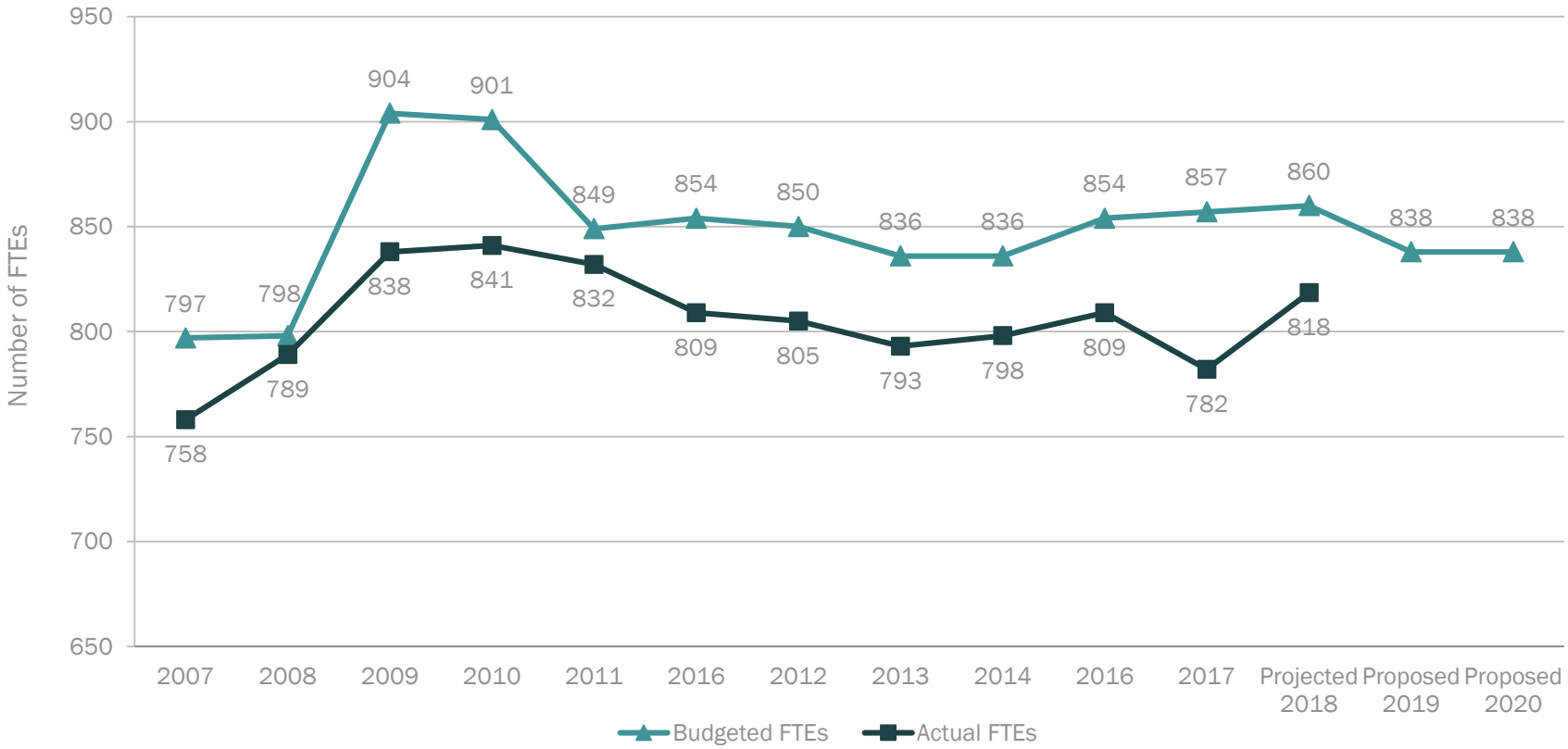
Personnel Reductions

- Assumed 8% Vacancy Rate ~($20M) for 19/20 budget and Revenue Requirement (RR)
- ~($10M) Vacancy Rate only assumed for 17/18 RR
- 19/20 budget lower than 17/18 budget by ($15M)
- Overall reduction of approximately (20) FTEs for 19/20

Biennial Decrease: -7.5%

Expense Components: FTEs

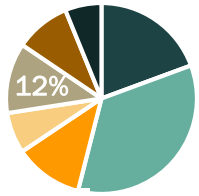


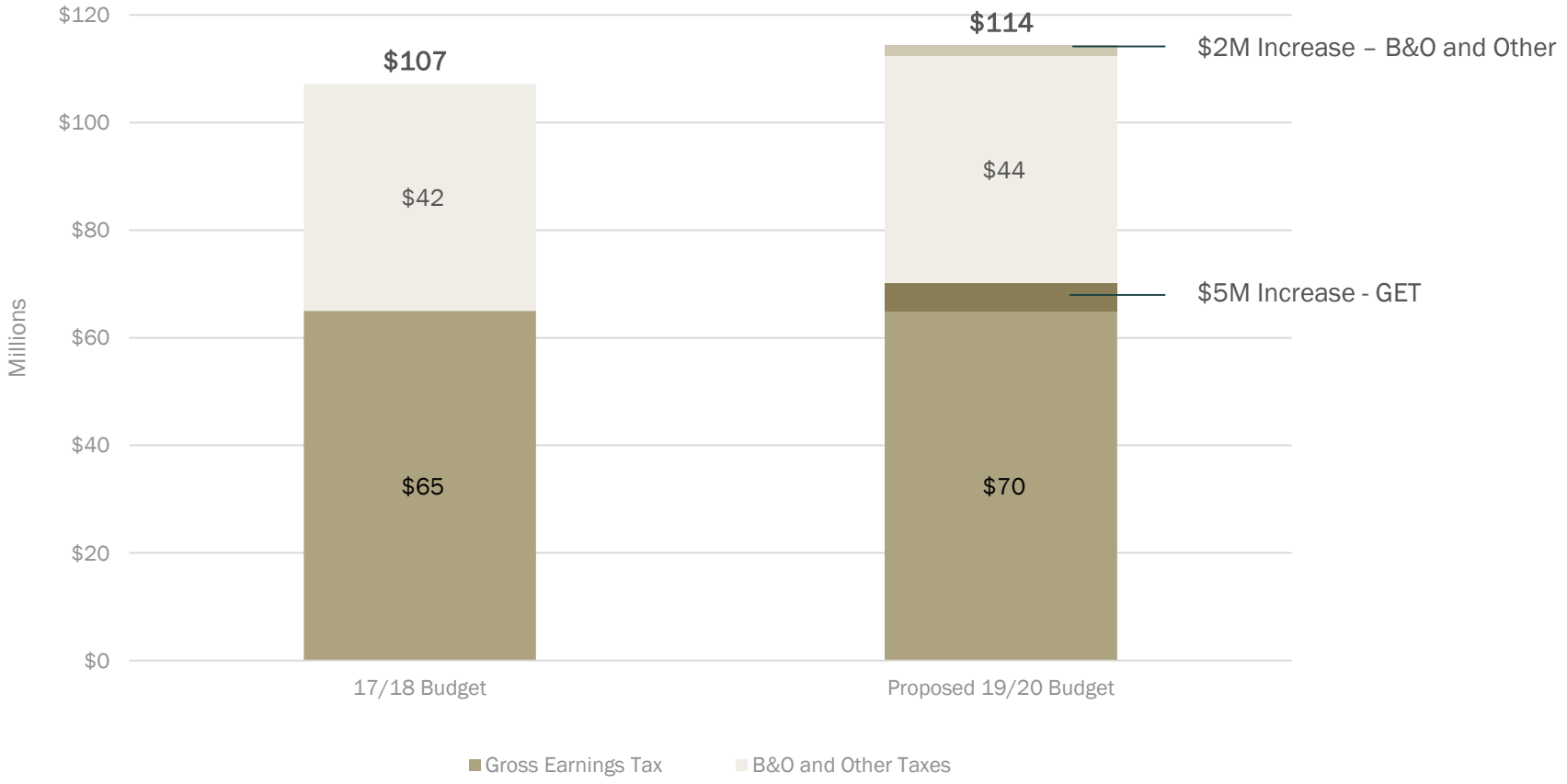


- 8% Vacancy Rate over last 7 years
- ($19.7 million) vacancy rate included in 2019/20 budget

Preliminary O&M Budget

Expense Components: Taxes

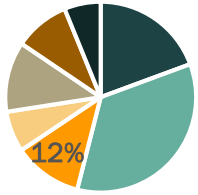


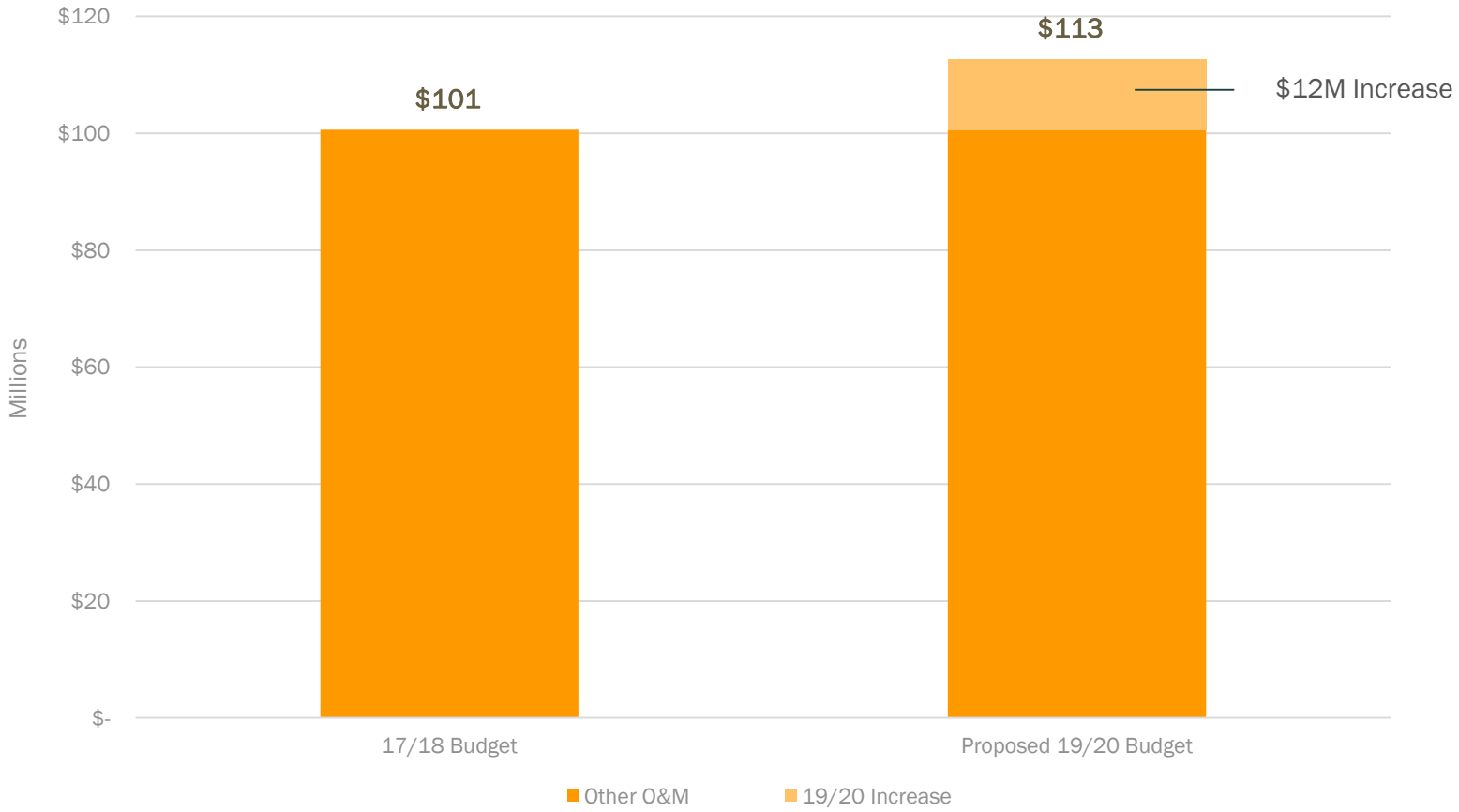


Biennial Increase: 6.7%

Preliminary O&M Budget

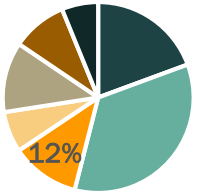
Expense Components: Other O&M

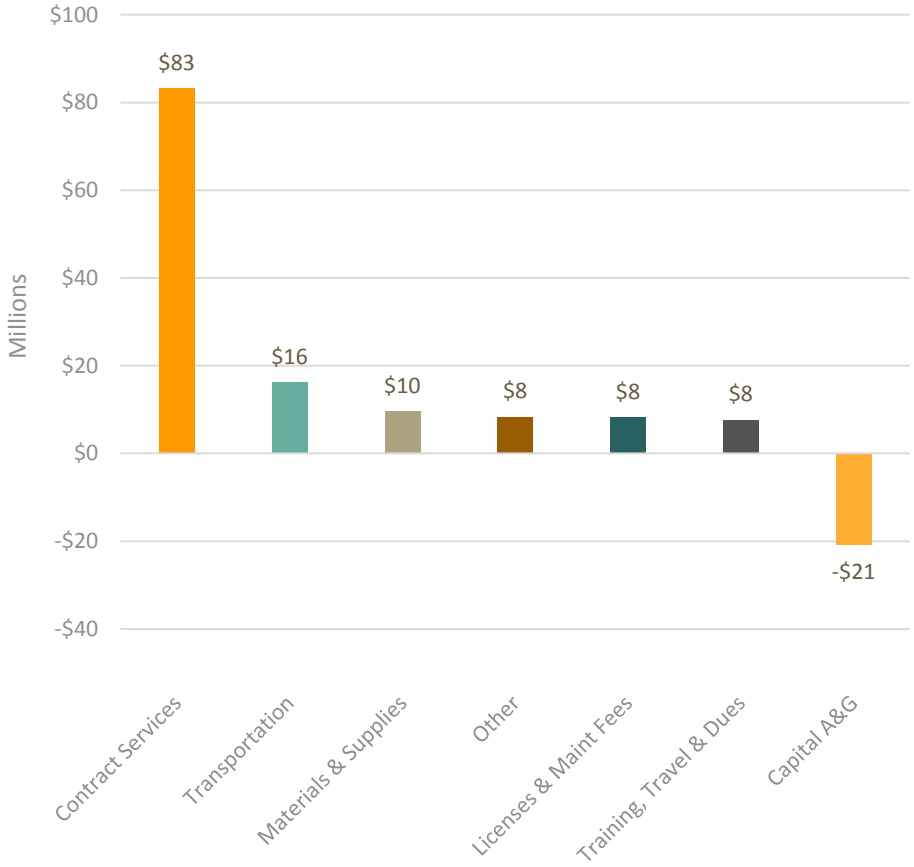




Biennial Increase: 12%

Other O&M



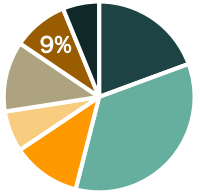


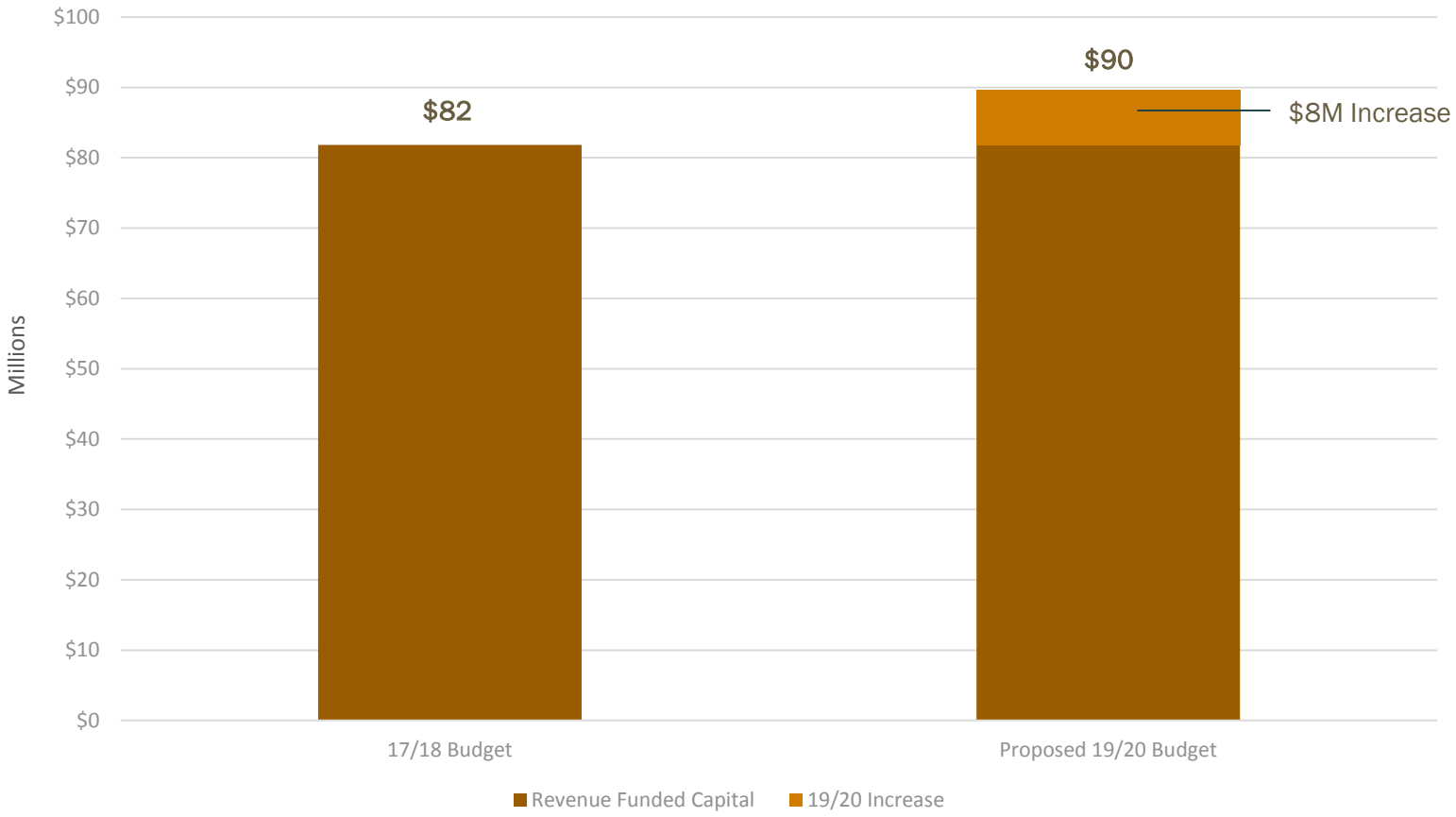
Notable Cost Drivers

	19/20 Increase
• Cowlitz Salmon Hatchery Barrier Dam Repair	$4M
• Software Licensing & Maintenance	$2M
• Facilities Improvements	$2M
• Technology Consultants	$2M
• AMI	$1M
• Cybersecurity	$1M

Biennial Increase: 12%

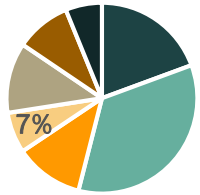
Expense Components: Revenue Funded Capital

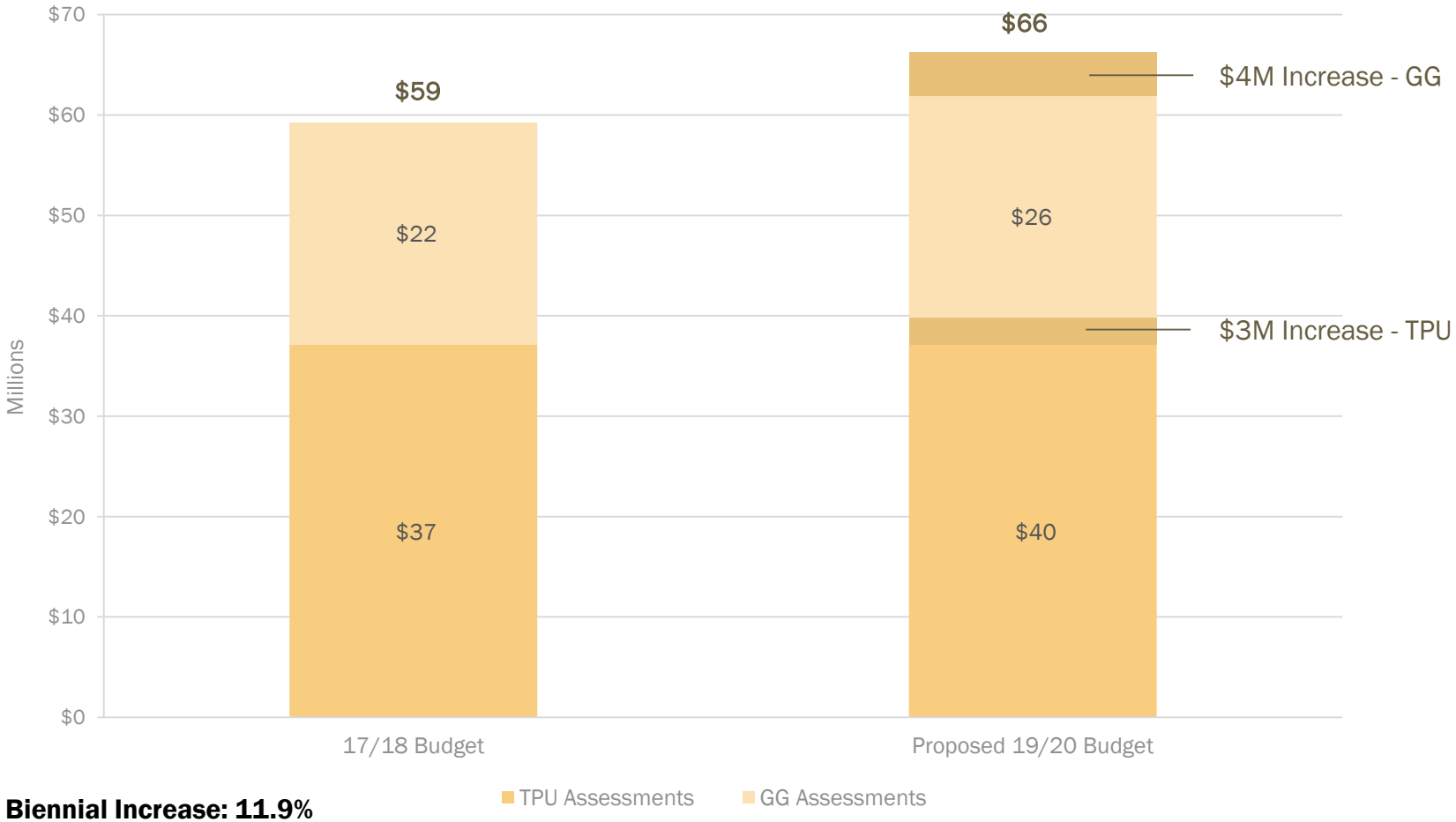




Biennial Increase: 9.6%

Expense Components: Assessments

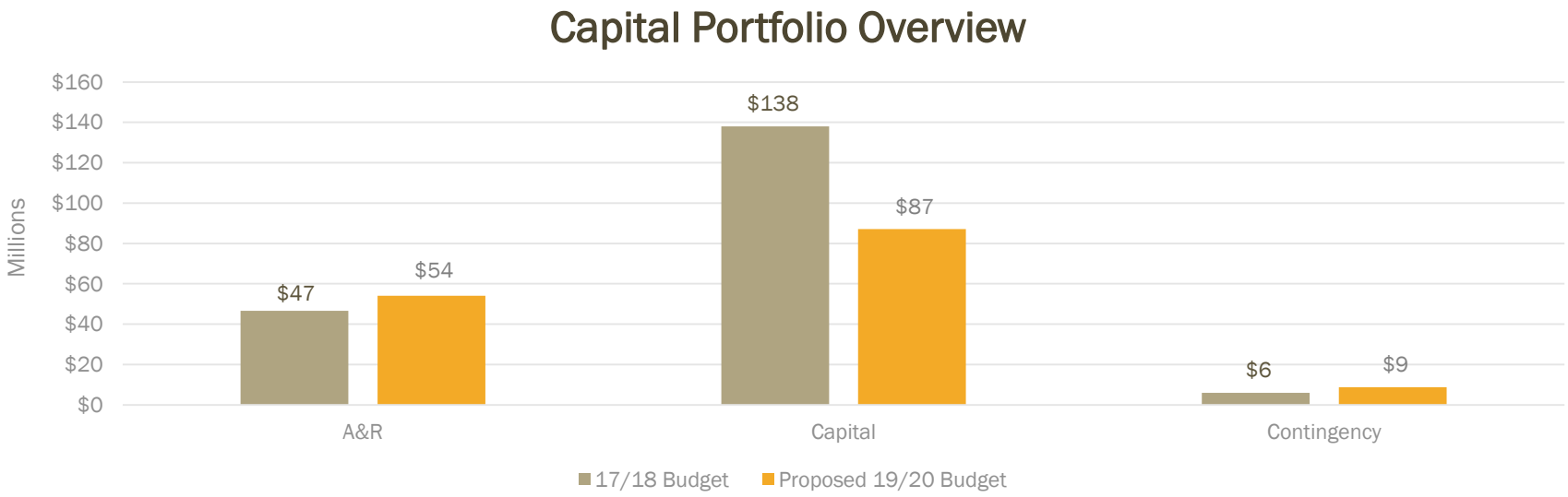




Biennial Increase: 11.9%

Preliminary O&M Budget

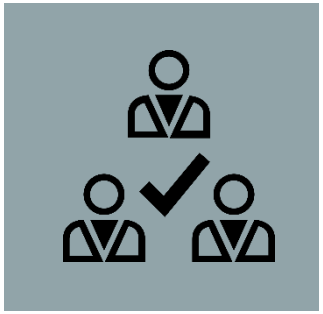
Capital Projects



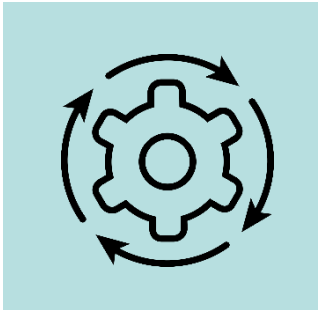
Major Project Categories	19/20 Budget	% of Capital Budget	Change from 17/18
Advanced Metering Infrastructure (AMI)*	$24,325,000	16%	$20,780,000
Aging Infrastructure/Reliability Upgrades	20,090,000	14%	(10,728,000)
Technology	16,729,000	11%	(16,234,000)
Regulatory	14,713,000	10%	(13,624,000)
Other Capital	8,901,000	6%	(11,005,000)
License Implementation	7,447,000	5%	(18,907,000)
Facilities Improvements	3,531,000	2%	1,521,000
Additions & Replacements	53,987,000	36%	7,446,000
TOTAL	**$149,723,000**		**($40,751,000)**

*Power only portion

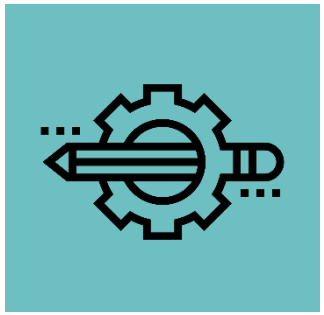
Efficiencies – Revenue/Financial



Resourcing



Operations

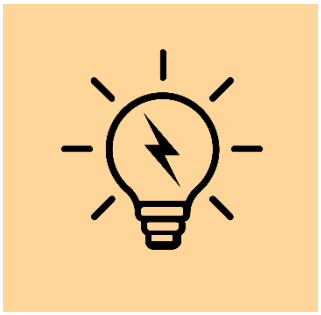


Streamlining

Technology

Efficiencies

Revenue/Financial



Innovative Wholesale Products & Service

Pole Rental

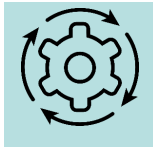
Active Debt Management

In response to 6/27 Board Study Session question from Board Member Larkin (ACTION ITEM 26)

Efficiencies

Resourcing/Staffing

- Consolidation of work groups with transferable skills and related responsibilities
- Use of contractors during peak seasons



Operations/Planning

- Hydro Operations Optimization – Power Management and Maintenance meet quarterly to plan for two years

Streamlining

- Tacoma Power took over operation of the Cowlitz Falls fish facility from the WDFW to reduce costs and improve coordination with the adjacent fish collector

Technology

- Use of unmanned Aircraft System provides aerial imagery of TPU locations and reduces risks to employees, physical assets, the environment and our customers

Revenue/Financial

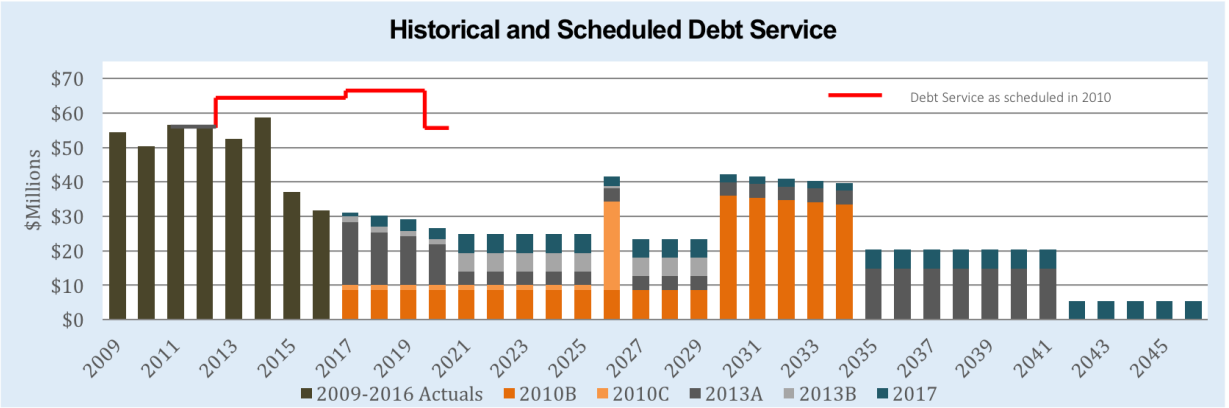
Innovative Wholesale Products & Services

- Increased sales of non-traditional products such as Low-Carbon Asset Controlling Supplier (ACS) power, Capacity, Frequency Response
- Leverage of recent role as a Scheduling Coordinator to transact directly with the California ISO (CAISO)

Pole Rental

- Due to PUB approved rate adjustments, pole maintenance costs shared more equitably with pole attachment partners (approx. $450,000-$1,000,000 annually in pole rental revenue).

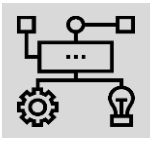
Debt Restructuring



Long Term Investments to Deliver Value

Asset Management

- Data-driven asset spending decisions to get the most value from our assets
- Whole life cost analysis – evaluating the total cost over the life of the asset to make sure it's as low as possible
- Standardized, repeatable processes to support knowledge transfer and efficiency improvements



Stand-up Construction PMO

- Standardized project data, project performance, benefits realization
- Improved project risk management
- Better project development and decision-making

AMI Implementation

- Customer engagement and digital services enhancement
- Improve the ability to anticipate, detect and respond to system disturbances and outages
- Optimize asset utilization and operate more efficiently

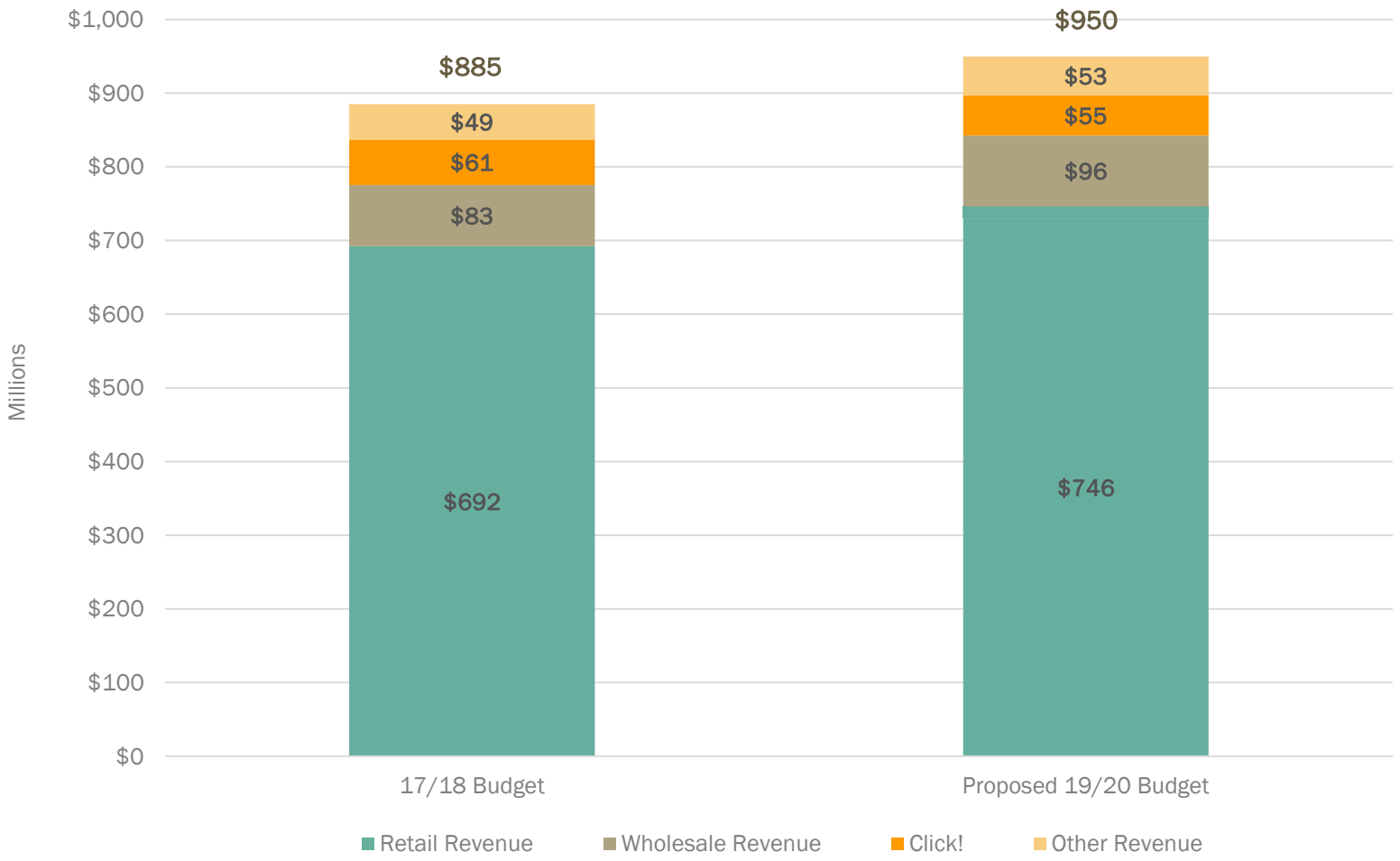
02 Preliminary Revenue Budget

+ Retail Revenue

+ Wholesale Revenue

+ Click! Revenue

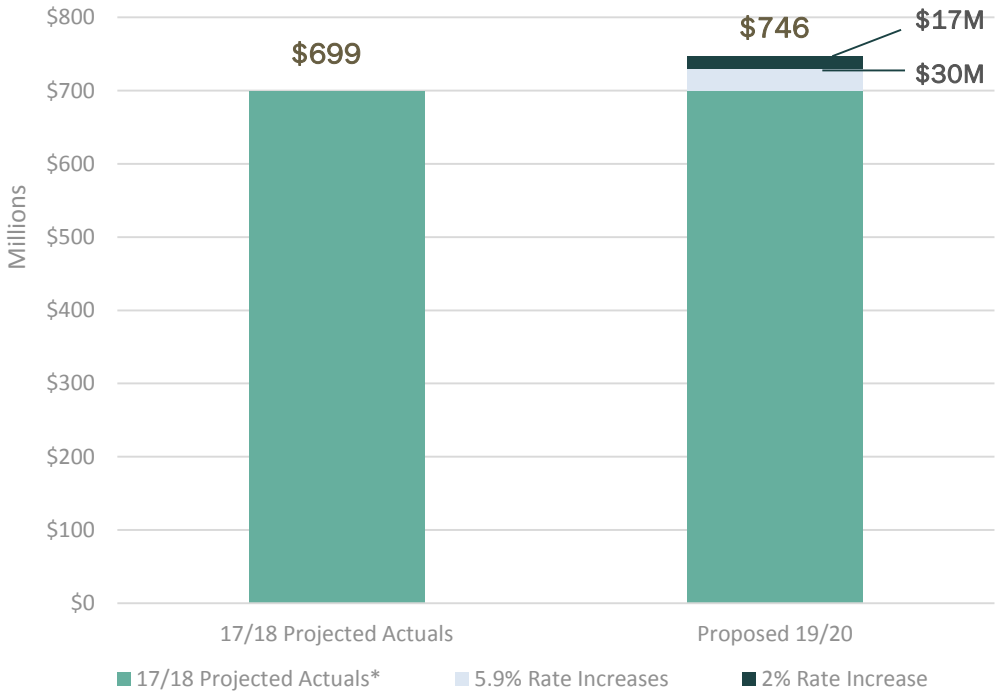
2019/20 Preliminary Revenue Budget



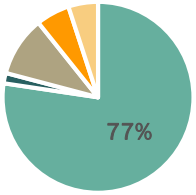
Biennial Increase: 7.3%

Preliminary Revenue Budget

Revenue Components: Retail Revenue



*includes projection for last part of 17/18



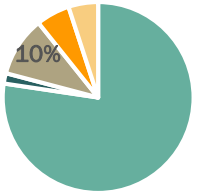
- 19/20 Retail Revenue budget is $54M more than the 17/18 Budget
- 19/20 budget increase is due to compounded 5.9% rate increases from 17/18
- Assumes a 2% rate increase on April 1, 2019 and April 1, 2020
- Retail load is anticipated to remain flat

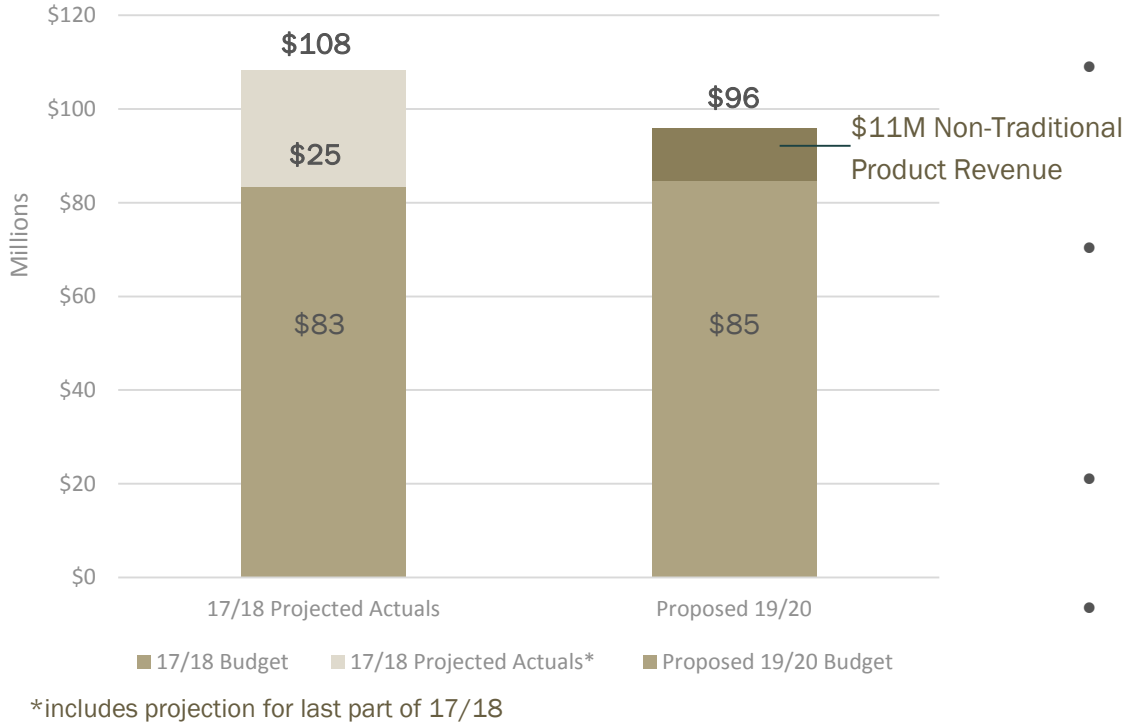
Biennial Increase: 7.9%

Retail Revenue	17/18 Budget	Proj Actuals 17/18	19/20 Budget	Budget to Budget
	$692,116,983	$699,613,222	$746,470,691	$54,353,708

Preliminary Revenue Budget

Revenue Components: Wholesale Revenue





*includes projection for last part of 17/18

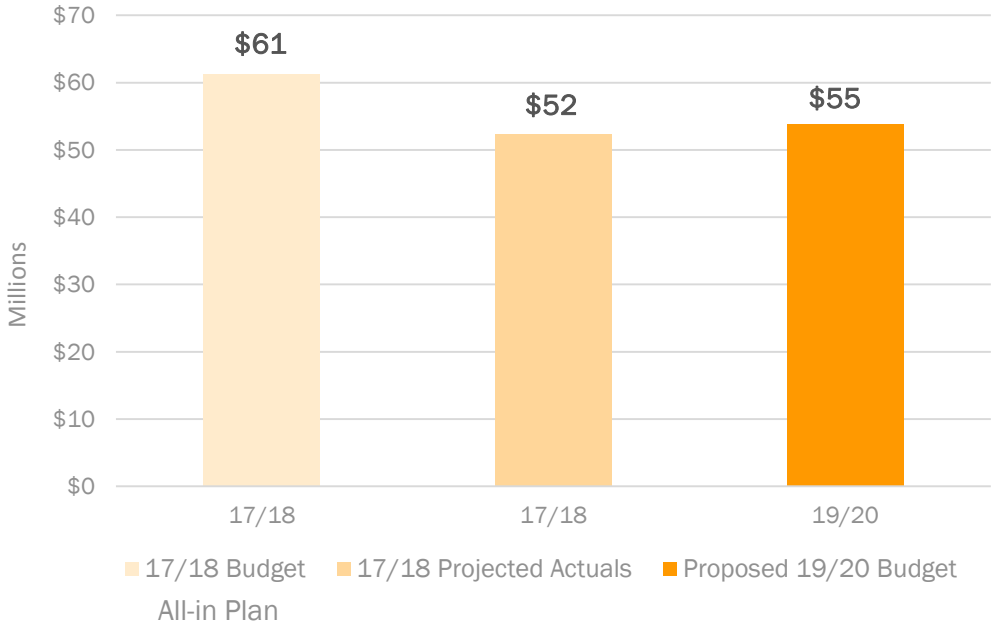
- Actual 17/18 Wholesale revenue expected to be $25M more than budgeted
- Increase in 17/18 actual revenue due to increased sales of non-traditional products and average water conditions
- 19/20 budget is $13M more than the 17/18 Budget
- Increased presence in the CA market contributing to more revenue

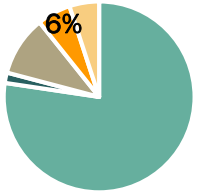
Biennial Increase: 14.9%

Wholesale Revenue	17/18 Budget	Proj Actuals 17/18	19/20 Budget	Budget to Budget	% Change
Dollars	$83,390,186	$108,337,972	$95,840,208	$12,450,022	14.9%
aMW	202.0	283.0	211.3	9.3	4.6%
$/MWh	$23.56	$21.85	$25.89	$2.33	9.9%

Preliminary Revenue Budget

Revenue Components: Click! Revenue





- Assumes cable rate increases of 9.8% in 2019 and 18% in 2020
- Assumes $5 increase per ISP package for both 2019 and 2020

Biennial Decrease: -10.7%

Click! Revenue	17/18 Budget	Proj Actuals 17/18	19/20 Budget	Budget to Budget
Cable	$ 38,786,871	$ 33,945,402	$ 32,758,843	$ (6,028,028)
Broadband	2,411,528	2,202,774	2,446,773	35,245
Internet	12,625,245	14,991,014	18,427,102	5,801,857
Miscellaneous	7,475,922	1,239,801	1,099,537	(6,376,385)
Total Click! Revenue	**$ 61,299,566**	**$ 52,378,991**	**$ 54,732,255**	**$ (6,567,311)**

Retail Revenue Wholesale Revenue Click! Revenue

BUDGET SUMMARY

- 3.8% Increase for 19/20 budget
- Budget supports our strategic plan and operational needs in 19/20
- FTEs are down overall
- Largest budget drivers are non-discretionary
  - Purchased Power
  - Taxes
  - Assessments
- Short-term and Long-term efforts to manage costs and revenue requirement
  - Wholesale Revenues
  - Debt restructuring
  - Vacancy Rate
  - Revenue requirement based on historical spending
  - Asset Management and Project Management Office

REVENUE

TACOMA POWER
TACOMA PUBLIC UTILITIES

($ millions)	Current		Proposed	Increase (Decrease)		Increase (Decrease)	
	17/18 Actuals	17/18 Budget	19/20 Budget	Budget to Actuals		Budget to Budget	
Operating Revenue							
• Retail Sales	$ 699.6	$ 648.9	$ 729.9	$ 30.3	4.3%	$ 81.0	12.5%
• Anticipated Rate Increase	-	43.2	16.5	16.5	–	(26.7)	-61.7%
Total Retail Sales	**$ 699.6**	**$ 692.1**	**$ 746.4**	**$ 46.8**	**6.7%**	**$ 54.3**	**7.9%**
• Wholesale Sales	108.3	83.4	95.8	(12.5)	-11.5%	12.4	14.9%
• Telecommunications	52.4	61.3	54.7	2.3	4.5%	(6.6)	-10.7%
• Other	36.8	35.5	39.8	3.0	8.1%	4.3	12.0%
Total Operating Revenue	**$ 897.1**	**$ 872.3**	**$ 936.7**	**$ 39.6**	**4.4%**	**$ 64.4**	**7.4%**
Non-operating Revenue	**15.4**	**12.9**	**12.9**	**(2.5)**	**-16.6%**	**-**	**-**
Total Revenue	**$ 912.5**	**$ 885.2**	**$ 949.6**	**$ 37.1**	**4.1%**	**$ 64.4**	**7.3%**
Current Fund Appropriation	9.8	38.2	9.2	(0.6)	-6.0%	(29.0)	-75.9%
Total Revenue & Available Funds	**$ 922.3**	**$ 923.4**	**$ 958.8**	**$ 36.5**	**4.0%**	**$ 35.4**	**3.8%**

EXPENSES

($ millions)	Current		Proposed	Increase(Decrease)		Increase (Decrease)	
	17/18 Actuals	17/18 Budget	19/20 Budget	Budget to Actuals		Budget to Budget	
Expenditures							
• Personnel Costs	$ 181.1	$ 200.5	$ 185.4	$ 4.3	2.4%	($15.1)	-7.5%
• Purchased Power	300.0	307.1	331.3	31.3	10.4%	24.2	7.9%
• Other O&M	138.4	159.8	178.9	40.5	29.3%	19.1	12.0%
• Capital Outlay	103.5	81.8	89.7	(13.8)	-13.3%	7.9	9.7%
• Debt Service	61.9	67.0	59.1	(2.8)	-4.5%	(7.9)	-11.8%
• Taxes	110.2	107.2	114.4	4.2	3.8%	7.2	6.7%
Total Expenses	**$ 895.1**	**$ 923.4**	**$ 958.8**	**$ 63.7**	**7.1%**	**$ 35.4**	**3.8%**
• Debt Defeasance	$ 27.2	-	-	$(27.2)	-	-	-
Total Expenditures	**$ 922.3**	**$ 923.4**	**$ 958.8**	**$ 36.5**	**4.0%**	**$ 35.4**	**3.8%**

Capital Outlay							
• Current Funded	$ 103.5	$ 81.8	$ 89.7	($13.8)	-13.3%	$ 7.9	9.6%
• Debt Funded	20.0	108.6	60.0	40.0	200.3%	(48.6)	-44.7%
Total Capital	**$ 123.5**	**$ 190.4**	**$ 149.7**	**$ 26.3**	**21.3%**	**($40.7)**	**-21.4%**

CAPITAL BUDGET

($ millions)	Current 17/18 Budget	Proposed 19/20 Budget	Increase (Decrease) Budget to Budget	
Capital Projects				
• AMI	$ 3.5	$ 24.3	$ 20.8	586.2%
• Aging Infrastructure/Reliability Upgrades	30.8	20.1	(10.7)	-34.8%
• Technology Projects	33.0	16.7	(16.2)	-49.2%
• Regulatory	28.3	14.7	(13.6)	-48.1%
• Additions & Replacements	46.5	54.0	7.4	16.0%
• Remaining Capital Projects	48.3	19.9	(28.4)	-58.8%
Total Capital Projects	**$ 190.4**	**$ 149.7**	**($40.7)**	**-21.4%**
Capital Funding Sources				
• Revenue Funded	$81.8	$89.7	$7.8	9.6%
• Debt Funded Bonds	108.6	60.0	-48.5	-44.7%
Total Capital Funding Sources	**$ 190.4**	**$ 149.7**	**($40.7)**	**-21.4%**

ASSESSMENTS

($ millions)	Current 17/18 Budget	Proposed 19/20 Budget	Increase (Decrease) Budget to Budget	
• IT	$ 13.1	$ 14.1	$ 1.0	8.1%
• HR	2.7	4.0	1.3	47.1%
• Legal	1.5	1.7	0.2	13.3%
• Finance	3.5	5.2	1.7	48.3%
• Other	1.3	1.4	0.1	8.0%
Total GG Assessments	**$ 22.1**	**$ 26.5**	**$ 4.4**	**19.6%**
• Customer Services	$ 21.0	$ 23.1	$ 2.1	10.2%
• Public Affairs & Communication	9.1	8.8	(0.3)	-3.1%
• Administration & Support	7.0	7.9	0.9	11.9%
Total TPU Assessments	**$ 37.1**	**$ 39.8**	**$ 2.7**	**7.2%**
Total Assessments	**$ 59.2**	**$ 66.3**	**$ 7.0**	**11.9%**

TAXES

($ millions)	Current 17/18 Budget	Proposed 19/20 Budget	Increase (Decrease) Budget to Budget	
• Taxes to the General Fund	$ 65.0	$ 70.2	$ 5.2	8.0%
• State Utility Taxes	28.4	30.2	1.8	6.2%
• Other Taxes (including Franchise Fees)	13.7	14.0	0.3	1.8%
Total Taxes	**$ 107.2**	**$ 114.3**	**$ 7.3**	**6.7%**

APPENDIX - Efficiencies

Resourcing

+ *We have a Power-wide contract in place for supplemental labor, allowing us to address peak season needs with seasonal workers and contractors.*
+ *Industrial automation allows for lean staffing at remote sites.*
+ *Leveraging our existing resources, we have managed to significantly increase our efforts to promote residential solar and address equity issues around solar. These efforts have also resulted in a considerable amount of research to support electrification of transportation.*
+ *Recently consolidated work groups with transferable skills and related responsibilities are fostering interdependence of specialized functions (e.g. Substation, Protection & Controls Engineering, Line Engineering & Standards) and are more capable of backing each other up. This has also been applied to administrative groups to increase coverage and internal backfill capability.*
+ *We have reduced Substation Operations staff (approx. savings of $100,000/year).*

APPENDIX - Efficiencies

Operations

+ *Hydro Operations Optimization - Operations and Maintenance meet quarterly to plan and optimize the next two years of hydro operation.*
+ *Recent standardization of major hydro equipment reduces the cost of spares and training, as well as improves staff's ability to make changes and repairs. This is the first time in our history where the replacements were planned as a program across the fleet.*
+ *To-date, Tacoma Power has eliminated 21 vehicles from its fleet as a result of the recent Fleet study. In addition to the replacement costs saved, this also eliminates overhead and maintenance costs associated with those vehicles.*
+ *By increasing revenue through sales of non-traditional products, we have reduced the amount of revenue required from retail customers by $8.7 million. Such products include selling Low-Carbon Asset Controlling Supplier (ACS) power, Operating Reserves, Capacity, and Frequency Response. We are also leveraging our recent role as a Scheduling Coordinator to transact directly with the California ISO (CAISO).*
+ *For interactions with CAISO, we were able to build an in-house reconciliation software tool which allowed us to avoid selection and use of a costly software alternative which would have likely cost hundreds of thousands of dollars per year.*
+ *By looking at the utility cost test, as well as the Total Resource Cost test, we are able to increase our focus on programs that cost customers less in their rates than other programs.*
+ *Review of asset failure data has allowed us to postpone direct buried cable replacement while we continue to install conduit using low-cost, horizontally-directional drilling methods. This practice reduces the street and sidewalk restoration needed (approx. savings of $500,000/year).*

APPENDIX - Efficiencies

Operations, continued

+ *Asset Management is evaluating maintenance intervals to transition away from strictly time based maintenance, when appropriate. The philosophy is to do the right tasks at the right time to the right equipment. Generally, this is expected to lengthen maintenance intervals.*
+ *By acquiring vise-top insulators, we have expedited the ability to "clip-in" when installing a new conductor of replacing a pole.*
+ *Due to PUB approved rate adjustments, we are able to share pole maintenance costs more equitably with pole attachment partners (approx. $450,000-$1,000,000 annually in pole rental revenue).*
+ *We are reducing pole ownership costs by allowing wireless attachments to Transmission & Distribution poles with standardized fees, construction standards and personnel safety training.*
+ *After researching multiple Automatic Vehicle Location (AVL) systems, Fleet Services selected one which resulted in lower O&M costs for service. The new AVL also meets our need for satellite coverage for outlying areas, which will improve employee safety and provide more comprehensive engine diagnostics, thus improving maintenance planning.*
+ *We are planning to engage in more formal project management in 2019 with a narrower set of project managers to expedite learning and promote consistency.*
+ *By utilizing NWPP to develop training material, we are lowering the cost of continuous education training for our NERC Certified Dispatchers.*

APPENDIX - Efficiencies

Streamlining

+ *Creation of a new task order system for Natural Resource contracts reduces the number of contracts we must manage and provides better controls and flexibility.*
+ *In 2017, Tacoma Power took over from WDFW operation of the fish facility at Cowlitz Falls. This reduces costs and improves coordination and efficiency with the operation of the adjacent fish collector owned by Tacoma.*
+ *We are achieving administrative efficiencies through online permitting, online service disconnect/reconnect, and billing process changes.*
+ *Fleet Services is partnering with General Government Fleet on an Environmental Action Plan (EAP) to reduce our carbon footprint, with a focus on electrical vehicles and biodiesel. While increased fuel costs may result, the environmental costs and fleet maintenance costs are expected to be lower.*

APPENDIX - Efficiencies

Technology

+ *We introduced new IT technology, termed 'virtualization', into our automation systems to reduce the hardware and software maintenance costs. We are among the first industrial systems to do so.*
+ *We now AutoCAD Vault to manage civil engineering designs more efficiently.*
+ *Recent use of robotic survey instruments allows one survey crew member to perform a survey instead of multiple crew members.*
+ *Installation of remote cameras allows us to track recreational and wildlife uses.*
+ *As a result of the service integration approach to the SAP system hardware upgrade, we achieved labor savings in the form of developer hours, analyst hours and end-user testing hours. Had we used a point-to-point integration approach as we have in the past, we would have had impact analysis, coding and/or configuration changes, as well as end-user testing for three systems resulting in many hours of work.*
+ *The recent use of Small Unmanned Aircraft Systems (sUAS) to provide aerial imagery to Tacoma Public Utilities business units reduces risk to employees, physical assets, the environment and customers. Over the past year, UTS has provided 8 UAS flights resulting in substantial savings from reduced man-hours to capture necessary data, reduction in use of external contracts, and quicker response time (preventing delays to projects).*
+ *We are in the process of implementing Workforce Connect, a mobile workforce management system that will improve productivity and efficiency.*
+ *The new EMS system is improving operator system awareness, reliability and automating manual tasks. We are also configuring this system to eliminate the need for Peak RC's hosted advanced applications for real-time assessments.*

Tacoma Power Rate Overview
2019/2020 Biennium

Chris Robinson, Tacoma Power
September 26, 2018

TACOMA POWER
TACOMA PUBLIC UTILITIES

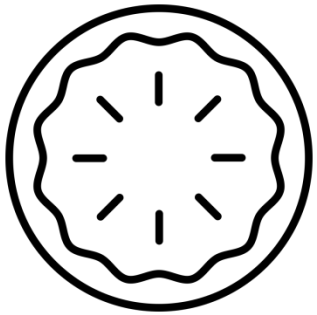
TABLE OF CONTENTS

01 Rates Process

+ *Revenue Requirement*
+ *Cost-of-Service Analysis*
+ *Rate Design: Existing Classes*
+ *Rate Design: New Class*
+ *Rate & Financial Policy*

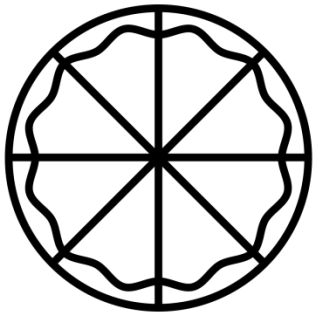
Ratemaking Process

How Big is the Pie?



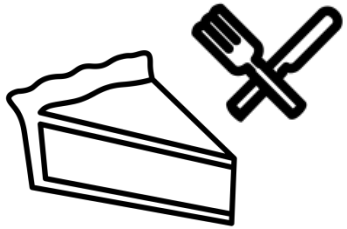
Revenue Requirement

How to Slice the Pie?



COSA

How to Eat Each Slice?



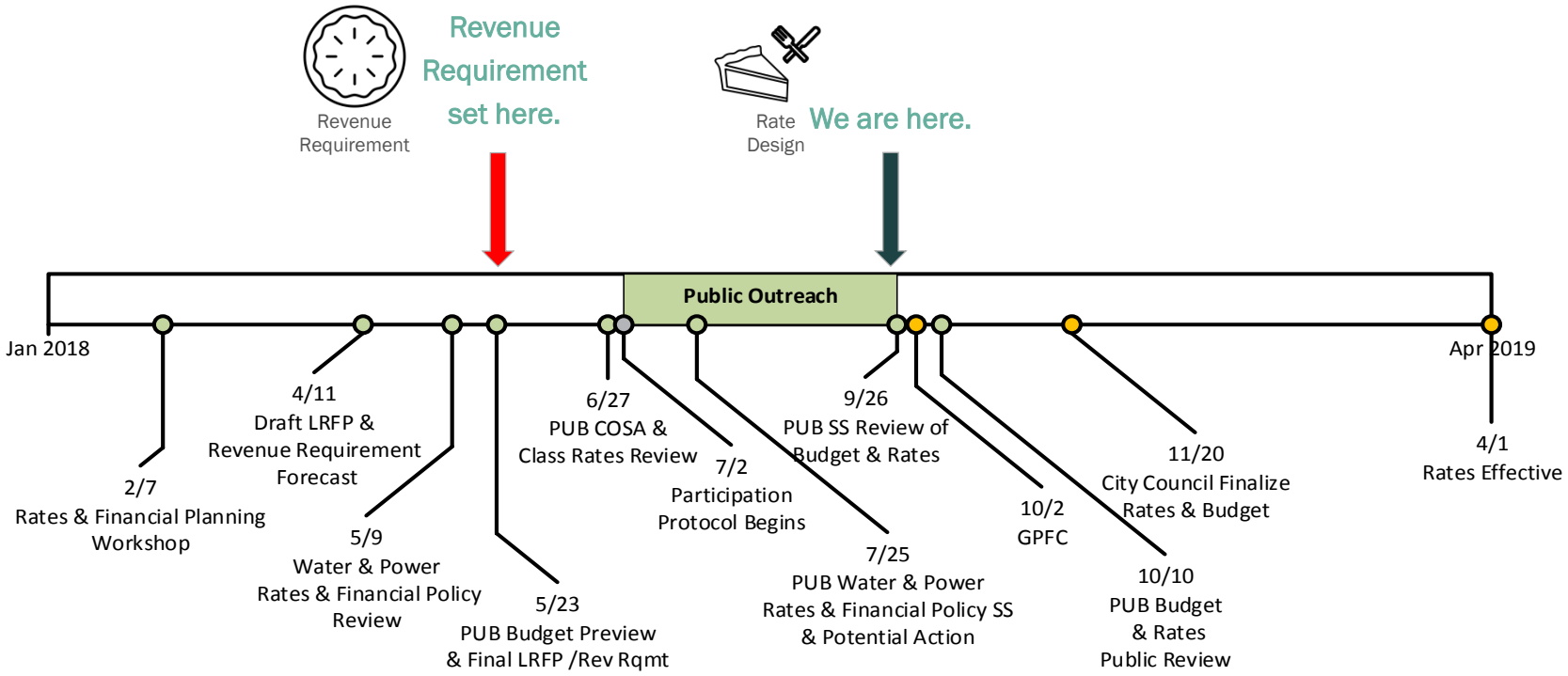
Rate Design

Revenue Requirement

Rates Process

Section 1.1

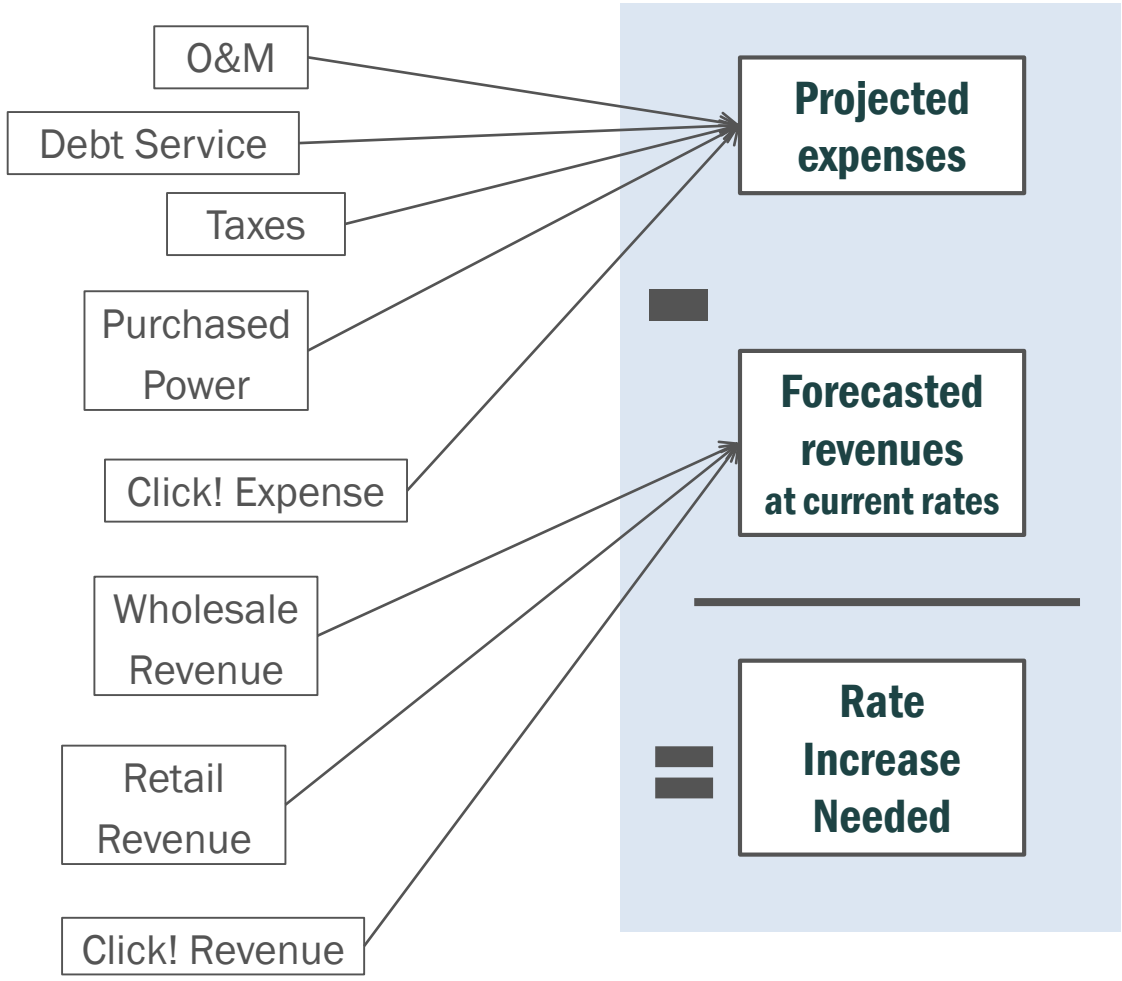
Budget and Rate Timeline



Revenue Requirement Illustration

The Tacoma Power Revenue Requirement is a forecast of the amount we needed to cover all of the utility's expenses and meet financial plan goals.

Tacoma Power's 2019/2020 Revenue Requirement forecast assumptions are provided in the **June 27, 2018 Revenue Requirement** presentation.



Revenue Requirement versus Budget

		Forecast for Revenue Requirement	Forecast for Budget
Total Forecast Expenditures		**$949,791,059**	**$958,830,957**
less	Wholesale Sales	95,403,408	95,840,208
	Click! Revenue	49,038,460	54,732,255
	Other Revenue*	$52,921,434	52,608,754
	Spenddown of Cash	6,660,427	9,179,049
Remaining		**$745,767,330**	**$746,470,691**
less	Retail Revenue at Existing Rates	729,438,197	729,929,146
Rate Increase Needed		**$16,329,133**	**$16,541,545**

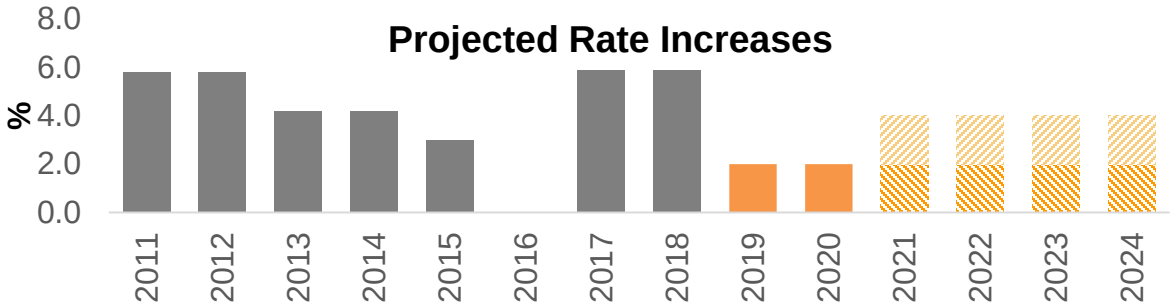
-1.3%

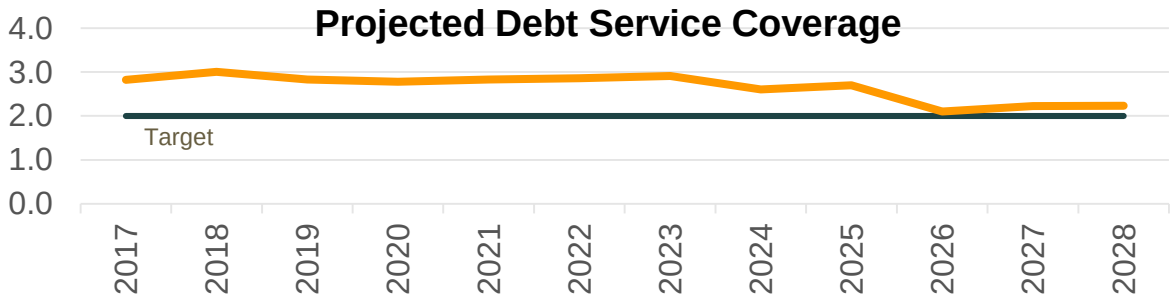
Difference in Revenue Requirement and Budget will be managed by Tacoma Power through controlling expenses, use of the **Note Purchase Agreement** ($100M), or **cash balances.**

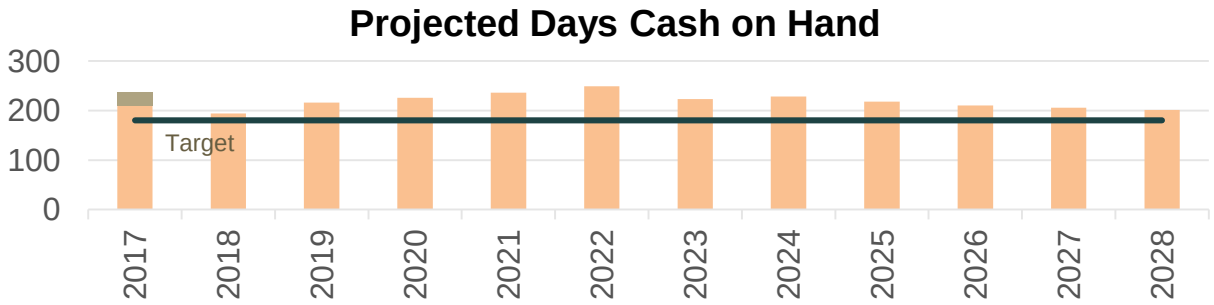
A request for an additional rate increase may also be made as a last resort.

In response to 6/27 Study Session from Board Member Flint (ACTION ITEM 27).

Revenue for Financial Stability







The recommended **2% system-average rate increase** in 2019 and 2020 is designed to **meet DSCR targets, manage cash levels,** and **minimize rate spikes** in the future.

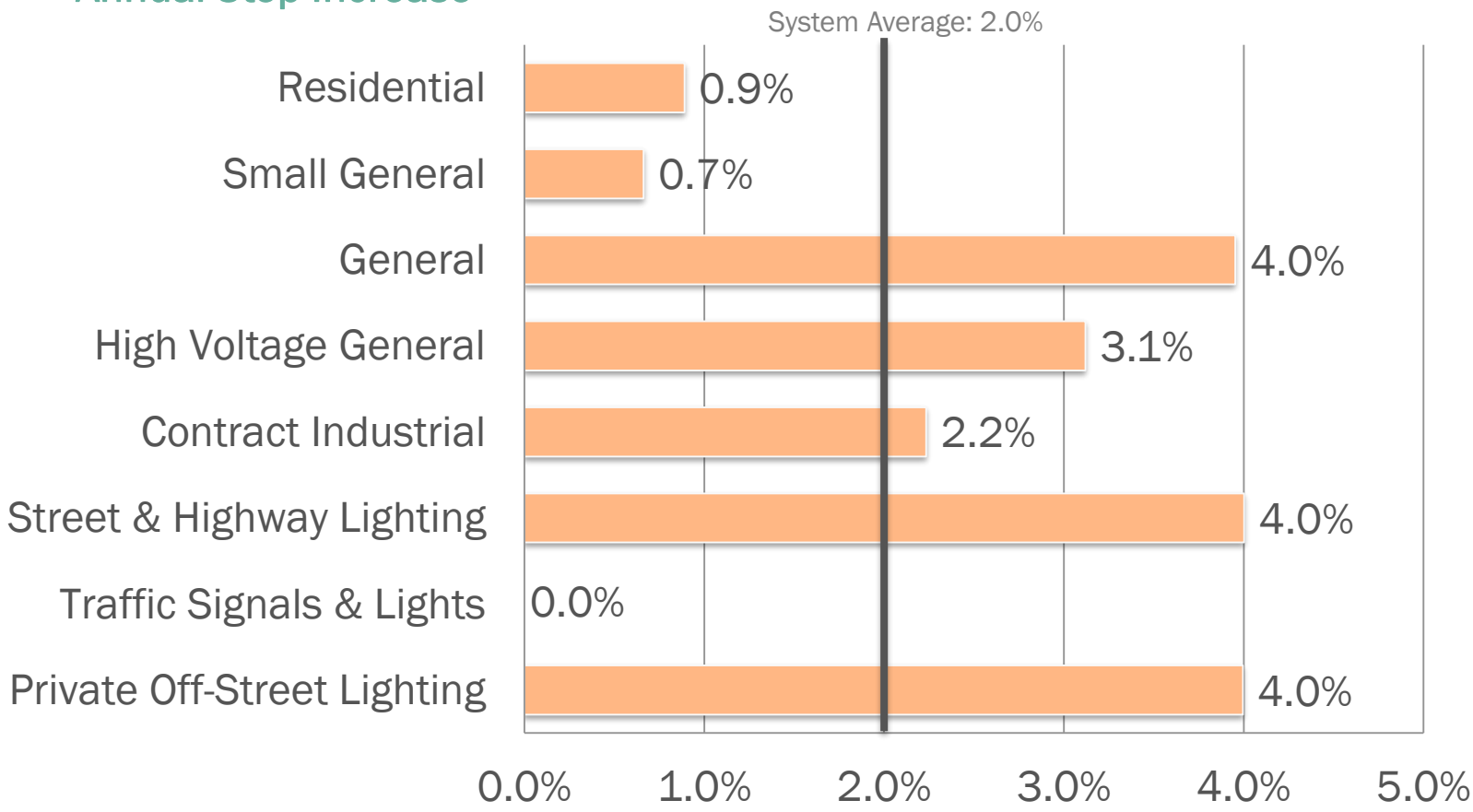
Cost-of-Service Analysis Results

Rates Process

Section 1.2

Increase by Class

Annual Step Increase



Preliminary, subject to change.

Results of Rate Design: Existing Classes

Rates Process

Section 1.3

Residential & Small Commercial

Schedule A	Residential		
	Current	2019	2020
Customer Charge	$ 16.50	$ 16.90	$ 17.30
Energy Charge	0.045351	0.045351	0.045351
Delivery Charge	0.034435	0.034891	0.035353
Total per-kWh Charges	$ 0.079786	$ 0.080242	$0.080704

Schedule B	Small General		
	Current	2019	2020
Customer Charge	$ 22.50	$ 23.00	$ 23.50
Energy Charge	0.044616	0.044616	0.044616
Delivery Charge	0.034587	0.034895	0.035207
Total per-kWh Charges	$ 0.079203	$ 0.079511	$ 0.079823

Place 50% of increase in customer charge.

Preliminary, subject to change.

General Service

Schedule G	General		
	Current	2019	2020
Customer Charge	$ 76.00	$ 78.00	$ 80.00
Energy Charge	$0.044813	$ 0.047317	$0.049961
Delivery Charge	$ 8.35	$ 8.43	$ 8.51

Increase all rate elements.

Preliminary, subject to change.

Industrial Classes

Schedule HVG	High-Voltage General		
	Current	2019	2020
Customer Charge	$ 1490.00	$ 1590.00	$ 1690.00
Energy Charge	$ 0.041691	$ 0.042915	$ 0.044175
Delivery Charge	$ 4.75	$ 4.89	$ 5.03
Transformer Discount	24.00%	20.00%	20.00%

Schedule CP	Contract Industrial		
	Current	2019	2020
Customer Charge	$ 2980.00	$ 3980.00	$ 4980.00
Energy Charge	$ 0.033038	$ 0.033038	$ 0.033038
Demand Charge	$ 4.33	$ 4.68	$ 5.07
Delivery Charge	$ 4.00	$ 4.22	$ 4.45

Adjust all or most rate elements.

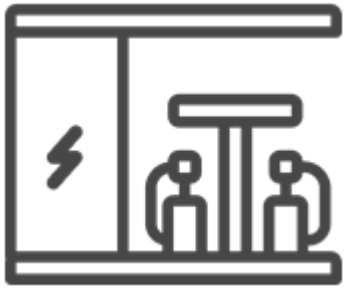
Preliminary, subject to change.

Rate Design: New Class

Rates Process

Section 1.4

Transition DC Fast Chargers to Demand



Fast Charge Service (Schedule FC)

- Rate structure mirrors a Public DC Fast Charger Optional Transition Rate adopted by PacifiCorp in Oregon and Washington
- Rate prices are derived from Tacoma Power's Small General Service and General Service rate schedules

Charge	Over 13-Year Transition Period (2019 – 2031)
per Month	remains the effective Schedule G per Month charge *$80.00 per Month*
per kWh	transitions from Schedule B per kWh charges to Schedule G per kWh charge *$0.079203 in 2019 to $0.049959 in 2031*
per kW	introduces Schedule G per kW charge *$0.00 in 2019 to $8.51 in 2031*

NOTE: illustrated prices hold Recommended 2020 rates constant. These rates are subject to change.

Information will Inform Future Rates

To qualify for the rate, Electric Vehicle Charging Stations must…

- Have separately metered service
- Be broadly available to the general public
- Have at least one DC fast charger
- Demand no more than 1 megawatt of load

Pilot is limited to…

- 13 Years, January 1, 2019 – December 31, 2031
- 25 public DC Fast Charging Stations, on a first-come, first-served basis

Bi-annual reports will include…

- Locations of participating stations
- Aggregated utilization and sales statistics

Limited Ancillary Loads Permitted

Ancillary loads…

- must be related to the provision of Electric Vehicle charging
- must not collectively exceed 5 kilovolt amps (5 kVa)

What will 5kVa support?

It depends on the characteristics of the ancillary loads. With 5kVa, a site would be capable of providing vending machines and ample lighting for its patrons.

In response to 8/8 Study Session question from Board Member Cooley (ACTION ITEM 33).

Rate & Financial Policy

Rates Process

Section 1.5

Rate and Financial Policy Updates

1. Low-Income and Senior/Disabled Assistance Programs

Addresses programs available through utility assistance programs. *"The needs of low-income, senior, and disabled electric customers will be considered when establishing rate levels, providing bill assistance, and offering financial education."*

2. Rate Stability

Sets an objective that seeks to stabilize rates and better align with Water's rate and financial policies. *"To the extent possible, rate adjustments should be as level across years and not exceed general inflationary trends."*

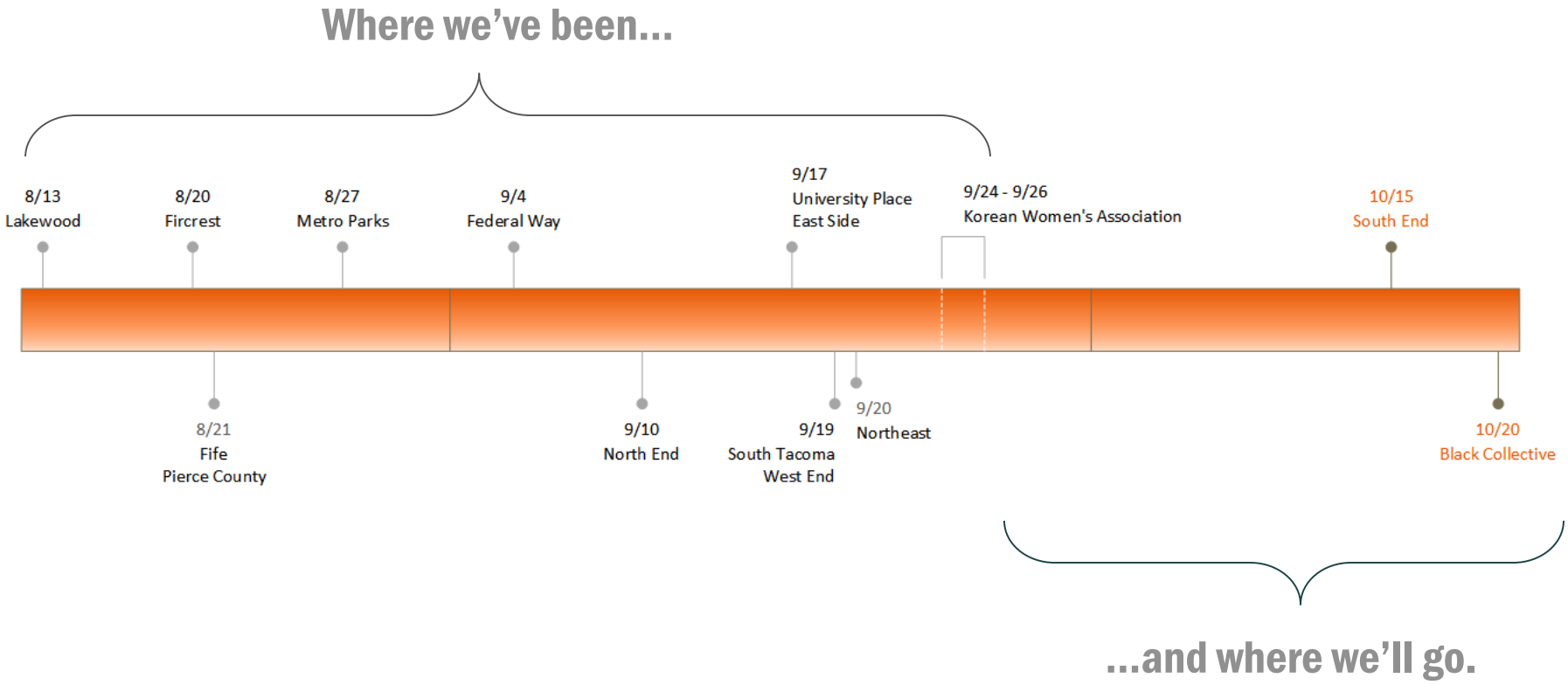
3. Class Rate Increase Cap

Addresses caps for class rate increases and enables better alignment with Water's rate and financial policies. *"Rate adjustments may be phased-in over a limited time period and may be used if a disproportionate change in rate levels is expected for certain classes. Inter-class revenue requirements adjustments significantly in excess of the system average may be allocated proportionally to the remaining customer classes. A gradual approach may be used for the subsidized class to set subsequent rate increases until cost-of-service rates are reestablished."*

02 Public & Customer Outreach

+ *Public Outreach*
+ *McChord Participation Protocol*
+ *Next Steps*

Public Outreach Timeline



Public Outreach Themes

Rate proposal has been generally well-received.

- Common Themes from Franchise Jurisdictions:
  - Value proposition generally well-received by audiences
  - Desire for more representation for outside-City customers
  - Questions about AMI rollout and related cybersecurity/data privacy risks
  - Request for more outreach to low-income customers

- Common Themes from Tacoma Neighborhood Councils:
  - Value proposition generally well-received by audiences without any major issues or concerns

Rates Outreach & Communications

Communications

- Complete
  - July *Utilities and You* newsletter story
  - Updated web page and banners
  - E-mail list sign up online
  - Bill message
  - Handout for public meetings
  - Translated versions of handouts
  - Updated public meeting info online and social media
- Upcoming
  - October *Utilities and You* newsletter update
  - Video
  - E-mail notification to customers
  - Newsletter content for business customers and other orgs
  - Lobby messaging
  - Materials for Oct 10 evening session (to be posted in advance)

McChord Participation Protocol

Negotiations focused on three issues, with most focus on the third.

1. Classification of Tacoma-Power-Owned Hydroelectric Production Cost.
2. Classification of Bonneville Power Administration (BPA) Power Cost.
3. **Allocation of Demand-Classified Production Cost.** In the initial COSA, this cost is allocated based on an load patterns during the entire year. The military consultants advocated for an allocator based on load patterns during the winter only. This results in a lower rate increase for the HVG and CP classes, and a higher increase for the Residential class, because residential usage is the most seasonal.

Tacoma Power has recommended studying this issue and producing a full report and recommendation for use in the 2021/2022 rate case, because:

1. This is a significant change from longstanding practice.
2. Area utilities with similar power supplies use a wide variety of methods.
3. Changing methodologies would have a substantial impact on the residential class.

The rate recommendations shown in this presentation assume no change to allocation methodology for the current rate case.

Next Steps

September 26th

- Study Session: Public Utility Board Budget & Rates Presentation

October 2nd

- GPFC Power, Water and Rail Rates Presentation

October 10th

- Public Utility Board Budget & Rates Public Review

October 16th

- Joint Council/Public Utility Board Study Session Budget & Rates Presentation

October 24th

- Public Utility Board approval of preliminary budget & rates

November 13th

- City Council first reading of budget & rates

November 20th

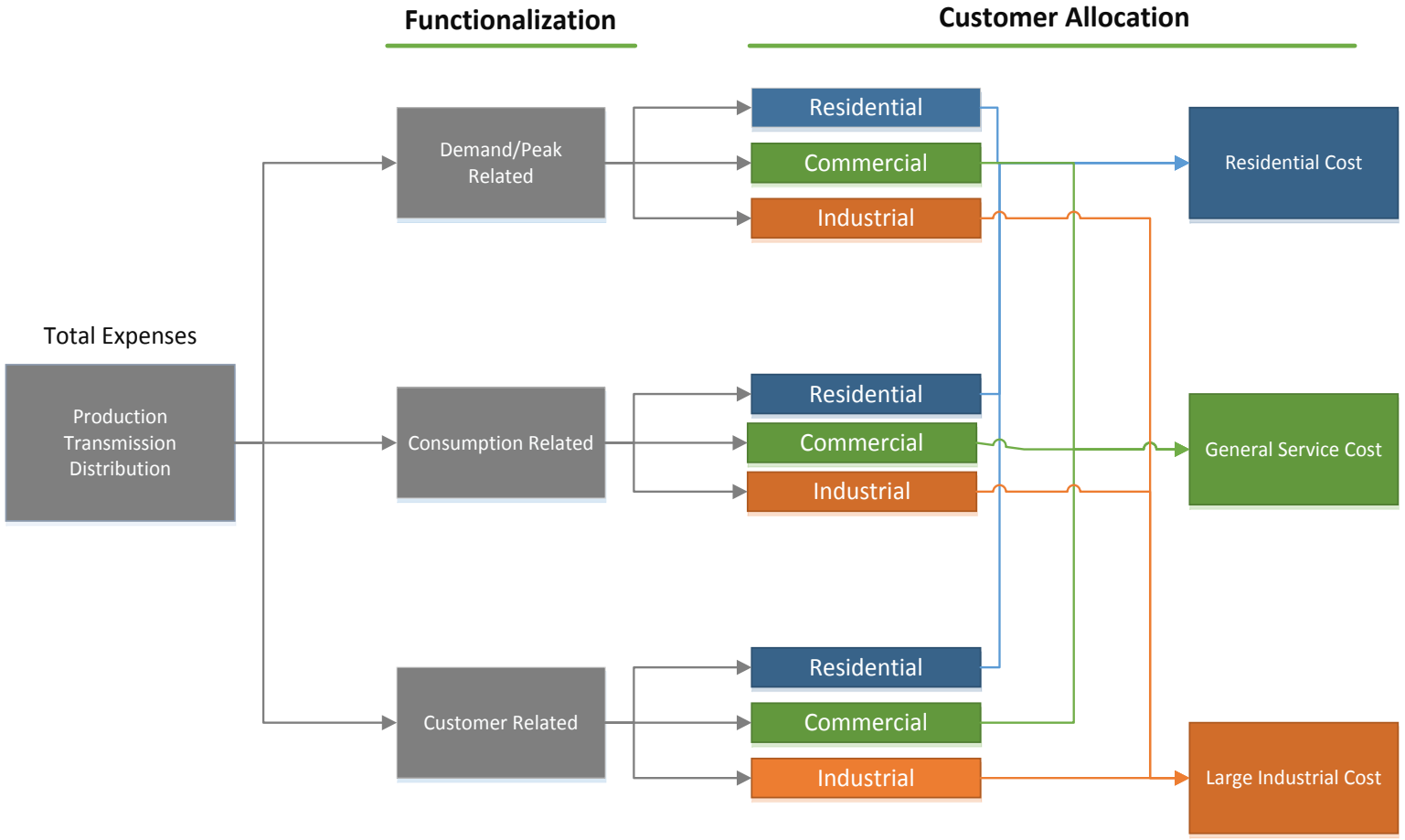
- City Council second reading of budget & rates

0A Appendix

+ *Cost-of-Service Theory Diagram*
+ *Class Increase Detail*
+ *Current and Projected Class Rates: ¢/kWh*

Appendix

Cost-of-Service Study



Appendix

Class Increase Detail

Description	Revenue at Existing Rates*	Final COSA Results*	COSA Rate Change		Redistribution for Gradualism Cap *(Increase Cap at 2x System)*	Recommended Rate Change	
			Amount	Annual Increase		Amount	Annual Increase
Residential	$365,351,989	$ 369,155,763	$ 3,803,774	0.7%	$ 1,124,158	$ 4,927,932	0.9%
Small General	57,070,622	57,533,266	462,645	0.5%	112,664	575,309	0.7%
General	207,180,477	219,582,683	12,402,206	3.9%	18,210	12,420,416	4.0%
High Voltage General	45,870,568	48,039,170	2,168,602	3.1%	48	2,168,651	3.1%
Contract Industrial	48,523,303	50,119,155	1,595,852	2.2%	15	1,595,866	2.2%
Street & Highway (H1)	1,834,191	2,221,130	386,939	13.6%	(276,335)	110,604	4.0%
Traffic Signals (H1)	168,602	166,802	(1,800)	-0.7%	1,800	-	0.0%
Private Off-Street (H2)	3,005,788	4,167,603	1,161,814	24.0%	(980,561)	181,253	4.0%
Total	**$ 729,005,540**	**$ 750,985,571**	**$ 21,980,032**	**2.0%**	**-**	**$ 21,980,031**	**2.0%**

**Retail Revenue and Cost of Service for 2019/2020 Rate Period (April 2019 through March 2021).*

Preliminary, subject to change.

Average Rates: Current & Proposed

Average per-kWh Rate	Current Rates	Proposed Rates*
Residential	9.68 ¢	9.81 ¢
Small General	9.36 ¢	9.46 ¢
General	7.05 ¢	7.47 ¢
High Voltage General	5.14 ¢	5.38 ¢
Contract Industrial	4.70 ¢	4.85 ¢
Street & Highway Lighting (H1)	5.24 ¢	5.56 ¢
Traffic Signals & Lights (H1)	9.77 ¢	9.77 ¢
Private Off-Street Lighting (H2)	21.13 ¢	22.41 ¢
Total	**7.84 ¢**	**8.07 ¢**

**average for 19/20 rate period*

Tacoma Power Cost of Service to Joint Base Lewis-McChord

Study Session Presentation to the Tacoma Power Board

September 26, 2018

Introduction Slide

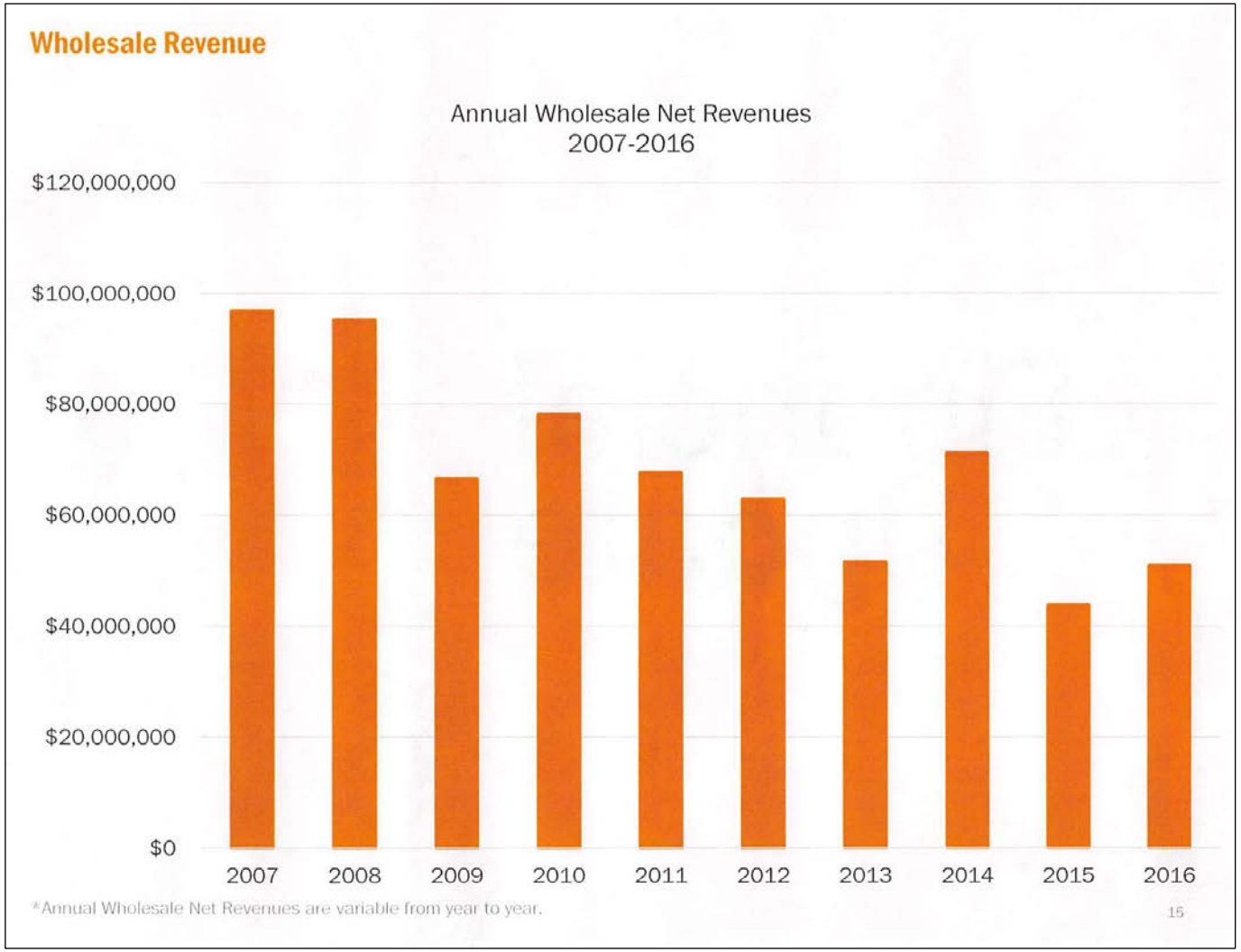
- August 14-16: JBLM met with Tacoma Power
  - Discussed concerns with the Cost of Service Analysis (COSA)
  - JBLM offered counter-proposal (described in more detail later)
- August 17: Met with Mr. Jones and Mr. Patterson; Met with Ms. Cooley
- Tacoma Power agreed to study the issue prior to the next rate change (2021-2022)
- Tacoma Power proposes to make no changes to the proposed increase for 2019-2020

High Voltage General Rate Increases

- 2015-2016 HVG rates increased by 18.3%; residential rates increased by 6%[1]
- 2017-2018 HVG proposed increase of 4.7%; residential rate increase of 1.3%

1 – 2015-2016 increase information subject to confirmation by Tacoma Power staff

Wholesale Net Revenues



Cost of Service Experience – Dr. Larry Blank

- Economics professor at New Mexico State University and the Center for Public Utilities since 2003
- Principal of TAHOEconomics since 1999
- Expert in over 160 regulated proceedings and many municipal and electric cooperative rates analyses

Main Steps in Cost of Service

- Functionalization
  - Production, Transmission, Distribution, General
- Classification
  - Demand (fixed); energy (variable); customer
- Allocation
  - Assignment of costs to the various rate classes

- Cost causation is the driving principle in selecting the most appropriate method for each step
- It is important to also consider the impact on residents in terms of both household electric bill impacts and residential employment at small and large businesses
- Lower residential bills imply higher commercial energy costs, which results in fewer jobs. For example, if given the choice between somewhat lower monthly electric bill and keeping their job, most families will select the latter

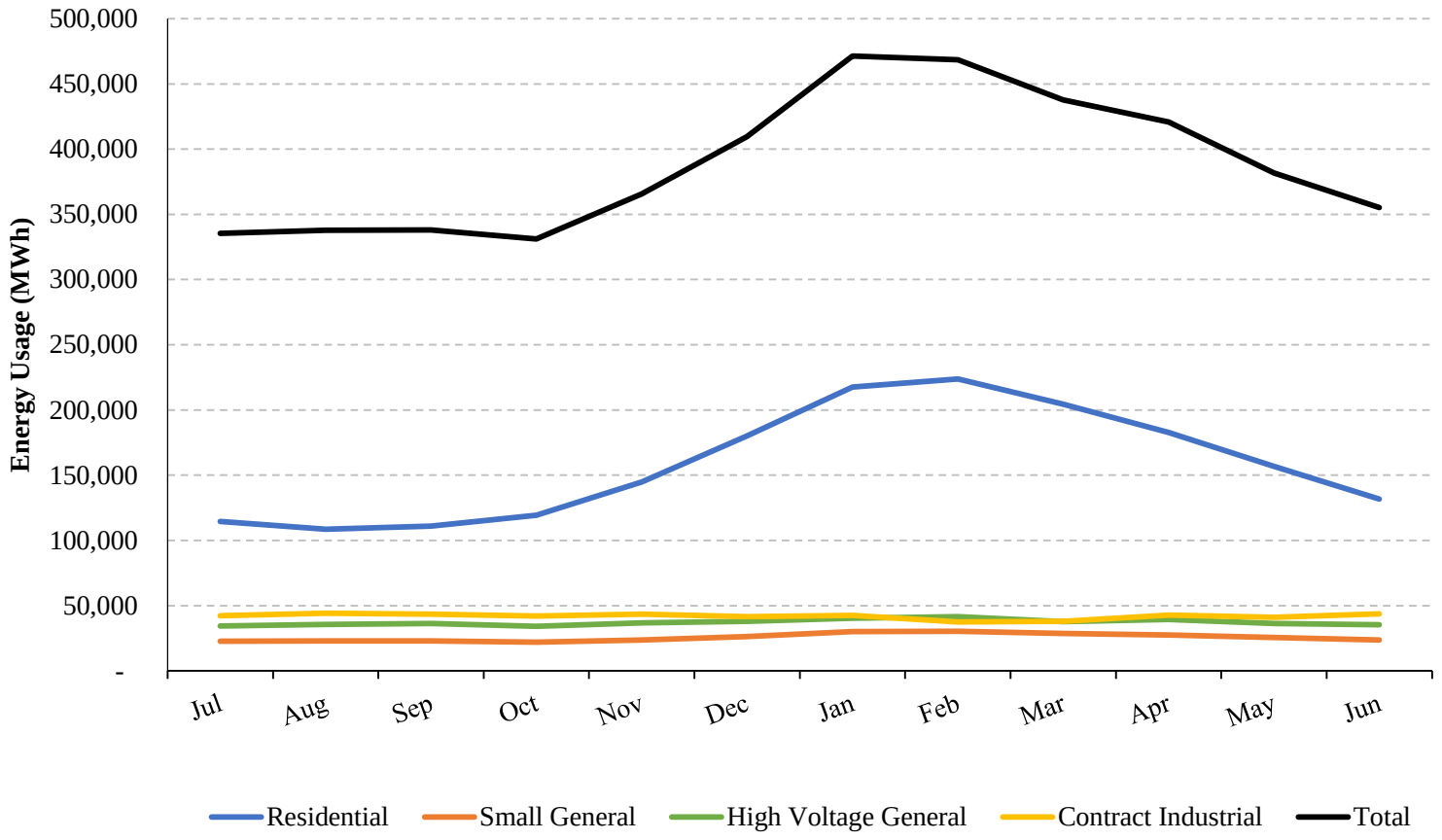
Production & Power Expense Classification

- Total Production & Power Expense = $372,545,875 per year (fully loaded and net of other revenues)
- Electric Utilities require a certain amount of power cost to meet **Baseload Energy** needs and a certain amount of power cost to meet **System Peak Demand** needs in the months those peaks occur
- The type of capacity used to meet Baseload and System Peak is irrelevant to this consideration. Electric Utilities require a mix of baseload capacity and peak demand capacity. Reservoir hydroelectric technology/capacity is suitable for both
- Other utilities may use a mix of generation technologies, but the fact remains that a portion of the costs serve Baseload and a portion of the costs serve System Peak regardless of the underlying technology used
- **Fuel costs of other utilities are not included in this classification and allocation decision**

Production & Power Expense Classification & Allocation

- Tacoma Power Staff have classified 71.6% of Production & Power Expense as necessary to meet **Baseload Energy** needs and 28.4% to meet **System Peak Demand** needs. JBLM is **not contesting** this Classification at this time
- Allocation of 71.6%, or $266,737,817, utilizes a class % of annual energy (kWh) method. JBLM is **not contesting** this Allocation at this time
- Allocation of 28.4%, or $105,808,057, utilizes a method based on 12 months of system peaks (12-CP). JBLM **disagrees** with this allocation
- Tacoma Power's use of a 12-CP method for System Peak Demand treats these costs as annual Baseload as well
- Tacoma Power's monthly peak demand data suggest that a 4-CP method is justified as adequately defining system peak demand responsibility (our first analysis showed that 3-CP was appropriate)

Monthly Energy Usage



Monthly Peak Demand

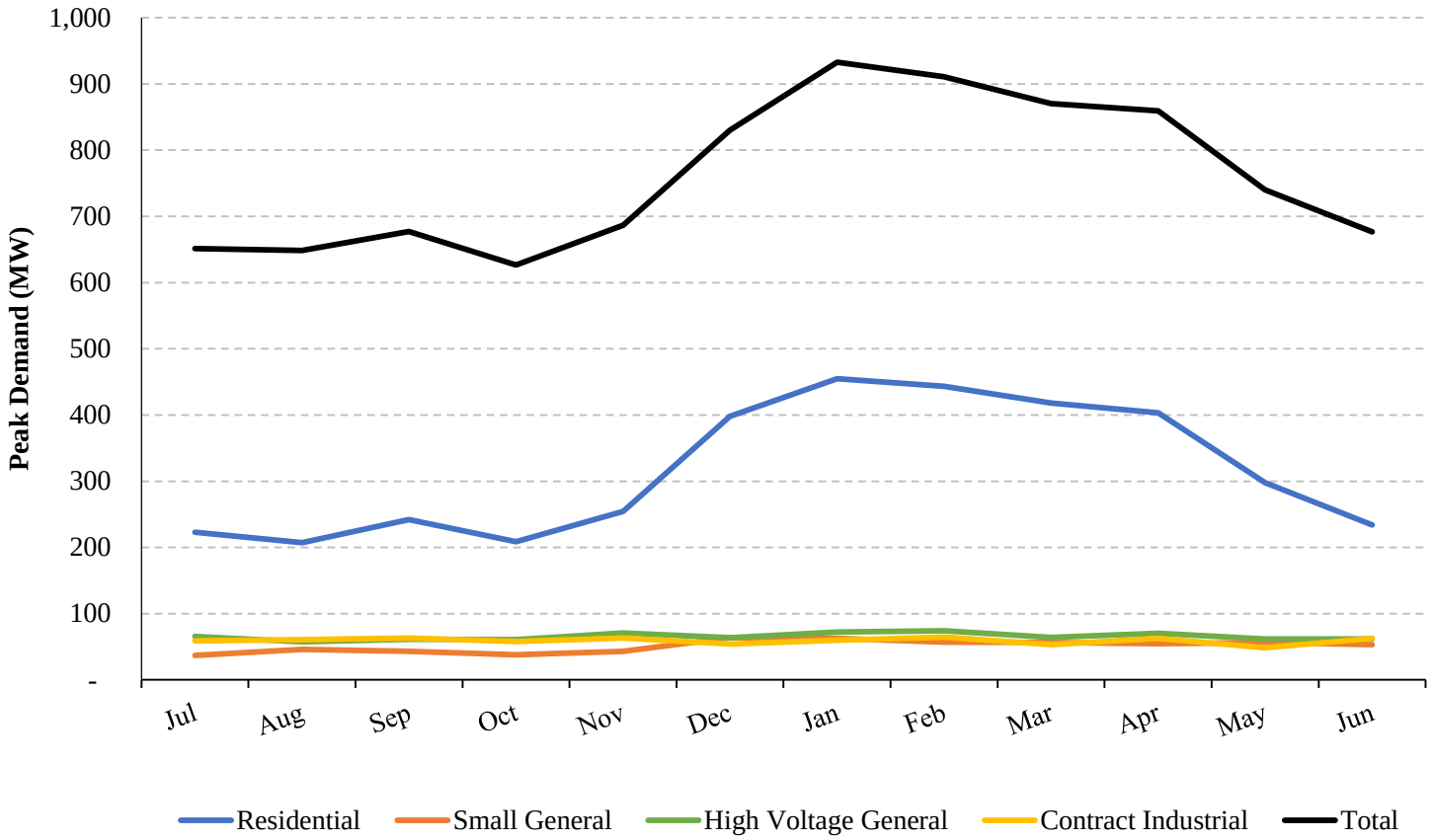


Table 1.	**Coincident System Peak Demands (kW) of Tacoma Power**											
	(Average of 2019 and 2020 Projections by Tacoma Power)											
Customer Class	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Residential	454,605	443,368	418,290	403,486	297,738	233,765	223,023	207,133	242,226	208,732	254,456	397,886
Small General	62,660	56,990	56,395	54,666	56,284	53,091	36,686	45,959	42,888	38,066	42,925	63,401
General	279,876	268,351	278,523	268,072	275,851	265,170	267,588	277,360	267,842	256,381	252,286	247,430
Street & Highway Lights	2,315	1,772	-	-	-	-	-	-	-	3,018	1,633	2,312
Traffic Signals & Lights	110	78	-	-	-	-	-	-	-	125	76	113
Private Off-Street Lights	1,296	1,494	-	-	-	-	-	-	-	1,574	1,300	1,300
High Voltage General	72,419	74,340	64,151	70,144	61,790	61,689	65,415	57,311	61,408	60,562	70,934	63,469
Contract Industrial	59,636	64,723	53,166	62,814	48,462	62,888	58,846	60,552	62,989	57,973	63,047	54,302
Total Tacoma System	**932,916**	**911,117**	**870,526**	**859,182**	**740,126**	**676,603**	**651,558**	**648,315**	**677,352**	**626,432**	**686,657**	**830,213**
Percent of System Peak	**100.0%**	**97.7%**	**93.3%**	**92.1%**	79.3%	72.5%	69.8%	69.5%	72.6%	67.1%	73.6%	89.0%
4-CP based on Jan-Apr	(Within 10% is an accepted industry standard.)											

Table 2.			Allocation of Production & Power Expense							
			(fully loaded less other revenues)							
Line No.	Customer Class	Tacoma Power COSS Total Production & Power Expense	Amounts Allocated Based on Energy (Not in Dispute)	Energy (kWh) Allocation Ratio	Amounts Allocated Based on Demand (12-CP)	12-CP Demand Allocation Ratio	Amounts Allocated Based on Demand (4-CP)	4-CP Demand Allocation Ratio	Difference 4-CP vs. 12-CP	Percent Change of Total Production Allocated Amount
1	Residential	$ 152,834,305	$ 108,908,613	40.83%	$ 43,925,693	41.51%	$ 50,916,760	48.12%	$ 6,991,067	4.57%
2	Small General	$ 24,678,769	$ 17,595,094	6.60%	$ 7,083,675	6.69%	$ 6,830,664	6.46%	$ (253,011)	-1.03%
3	General	$ 122,058,523	$ 84,861,272	31.81%	$ 37,197,251	35.16%	$ 32,414,513	30.64%	$ (4,782,738)	-3.92%
4	Lighting	$ 1,682,344	$ 1,470,451	0.55%	$ 211,893	0.20%	$ 209,193	0.20%	$ (2,701)	-0.16%
5	High Voltage General	$ 34,129,839	$ 24,989,326	9.37%	$ 9,140,513	8.64%	$ 8,321,183	7.86%	$ (819,330)	-2.40%
6	Contract Industrial	$ 37,162,095	$ 28,913,062	10.84%	$ 8,249,033	7.80%	$ 7,115,745	6.73%	$ (1,133,288)	-3.05%
7	Totals	$ 372,545,875	$ 266,737,817	100%	$ 105,808,057	100%	$ 105,808,057	100%	$ 0	

Tacoma Power
Cost of Service Model
COS Summary

Using 4-CP Production Demand Allocation

Rate Period: 2017-18

		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Line	Description	2017-18 Retail Sales	Revenue Existing Rates	Net COS	Adjustment to Revenue Requirement	Final COS	COSA Variance from Existing Revenue		Increase Cap 6.0%	Recommended Rate Change	
							Amount	Percent		Amount	Percent
		MWh			-1.39%	(c) + (d)	(e) - (b)	(f) / (b)			
1	Residential	3,773,663	$ 365,351,989	$ 381,304,330	$ (5,281,660)	$ 376,022,671	$ 10,670,682	2.9%	1,150,910	11,821,592	3.2%
2	Small General	609,667	$ 57,070,622	$ 58,084,652	$ (804,563)	$ 57,280,089	$ 209,467	0.4%	115,345	324,812	0.6%
3	General	2,940,427	$ 207,180,477	$ 217,882,921	$ (3,018,018)	$ 214,864,903	$ 7,684,426	3.7%	18,643	7,703,069	3.7%
4	Street & Highway Lighting	35,002	$ 1,834,191	$ 2,243,199	$ (31,072)	$ 2,212,127	$ 377,936	*20.6%*	(267,332)	110,604	6.0%
5	Traffic Signals & Lights	1,726	$ 168,602	$ 166,822	$ (2,311)	$ 164,511	$ (4,091)	*-2.4%*	4,091	-	0.0%
6	Private Off-Street Lighting	14,223	$ 3,005,788	$ 4,267,881	$ (59,117)	$ 4,208,764	$ 1,202,976	*40.0%*	(1,021,722)	181,253	6.0%
7	High Voltage General	892,636	$ 45,870,568	$ 47,894,477	$ (663,413)	$ 47,231,064	$ 1,360,496	3.0%	50	1,360,546	3.0%
8	Contract Industrial	1,032,795	$ 48,523,303	$ 49,689,723	$ (688,280)	$ 49,001,443	$ 478,139	1.0%	15	478,155	1.0%
9	Total	9,300,139	$ 729,005,540	$ 761,534,005	$ (10,548,434)	$ 750,985,571	$ 21,980,031	3.0%	0	21,980,031	3.0%

Recommended Demand Allocation

- Generation assets, regardless of technology, are built/purchased to serve peak loads
- Customers with low load factors tend to drive more of the spike in peak months
- Tacoma Power is a winter peaking utility, driven by the increased heating load of residential customers
- Use of a 4-CP methodology for Tacoma Power follows accepted industry standards and is a modest change within the overall cost of service

Employment Considerations

- J. Garen, C. Jepsen, and J. Saunoris, “The Relationship between Electricity Prices and Electricity Demand, Economic Growth, and Employment,” Center for Business and Economic Research, University of Kentucky, October 19, 2011
  - Estimated a 1% to 0.61% reduction in employment growth following a 25% increase in electricity price
- Center for Business & Economic Research, “Examining the Impact of Electricity and Natural Gas Prices on Manufacturing Employment in Arkansas,” University of Arkansas, September 2015
  - Estimated a 0.054 percent decline in manufacturing employment following a 10% increase in electricity prices
- Larry Blank, “Prefiled Surrebuttal Testimony on Behalf of the Hospitals and Higher Education Group,” Before the Arkansas Public Service Commission, Docket No. 15-015-U, November 24, 2015
  - Multi-sectoral, multi-customer-class impact analysis estimated net job gains in Arkansas expected from legislation that shifted production cost allocation away from large customers to small customers