2023 Budget

Including:

- Comparative Operating Statement
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BENTON P.U.D

RP3 RELIABLE PUBLIC POWER PROVIDER
American Public Power Association

December 13, 2022

Overview

Tab 1

To: Benton PUD Commissioners

From: Rick Dunn, General Manager

Date: December 13, 2022

Re: 2023 Budget

Benton PUD's 2023 preliminary budget was presented to the Commission at a public hearing on Tuesday, November 8, 2022. The preliminary budget is a first draft of the District's forecasted revenues and proposed expenditures for the coming year. Since then, staff has reviewed both expenses and revenues and no significant changes were identified. The proposed 2023 budget supports our strategic goals and highest priorities. To provide a point of reference, the table below compares the 2023 budget to the original 2022 budget.

Dollars in thousands	2023 Budget	2022 Original Budget	Increase/ (Decrease)	% Change
Revenues (excluding Secondary Market Sales)	**$142,284**	**$141,361**	**$923**	**0.7%**
Expenses (including Secondary Market Sales)				
Purchased Power	68,456	86,840	(18,384)	(21.2%)
Purchased Transmission & Ancillary Services	14,251	15,261	(1,010)	(6.6%)
Net Conservation	373	253	120	47.4%
Less: Secondary Market Sales	11,645	22,218	(10,573)	(47.6%)
Net Power Expenses	**$71,435**	**$80,136**	**($8,701)**	**(10.9%)**
Transmission Operation & Maintenance	169	172	(3)	(1.7%)
Distribution Operation & Maintenance	13,371	12,530	841	6.7%
Broadband Expense	1,193	1,206	(13)	(1.1%)
Customer Accounting	4,995	4,752	243	5.1%
Administrative & General	9,222	9,120	102	1.1%
Subtotal before Taxes & Depreciation	**$28,950**	**$27,780**	**$1,170**	**4.2%**
Taxes	14,712	14,651	61	0.4%
Depreciation/Amortization	11,233	10,538	695	6.6%
Non-Power Operating Expenses	**$54,895**	**$52,969**	**$1,926**	**3.6%**
Gross Capital	29,869	26,450	3,419	12.9%
Less: Capital Contributions	3,113	2,600	513	19.7%
Net Capital Additions	**$26,756**	**$23,850**	**$2,906**	**12.2%**
Debt Service (including BABs Subsidy)	**$5,088**	**$5,206**	**($118)**	**(2.3%)**

Overview

District staff is always mindful of controlling and managing costs to ensure high value service is provided to our customers for the rates they pay. Staff has been able to develop a 2023 budget that allows for sound operations and a continuation of our visionary investments in capacity and reliability without the need for retail rate increases. At a high level, compared to the original 2022 budget, the 2023 budget includes a forecasted increase in retail revenues; a modest increase in non-power operating expenses; a substantial decrease in net power expenses due to a Bonneville Power Administration (BPA) Reserves Distribution Clause (RDC); and an increase in net capital additions. The following sections include more detail on each of the District's key budget categories.

Revenues (excluding secondary market sales)

Most of the District's revenue (excluding secondary market sales) comes from electricity sales to retail customers. Electricity sales can fluctuate year-to-year based on weather, customer growth, and net load growth. In order to provide appropriate budget assumptions, the District prepares a Ten-Year Load and Customer Forecast (TLCF) which uses regression modeling to establish a relationship between annual load, weather, and economic variables. The most recent TLCF was approved by the Commission on April 26, 2022, with a forecasted annual retail load growth of 0.35% over the next five years. Staff will continue to monitor electricity sales analytics on a regular basis and will adjust assumptions and forecasts as necessary.

Net Power Expenses (including secondary market sales)

Starting October 1, 2023, the District's wholesale power supply contract with BPA will switch from Block/Slice to Load Following. The District is making the change to a Load Following contract to mitigate risk from increasing forward market prices; market price volatility that can cost millions of dollars over a multi-day period; and potential future shortages of dependable generating capacity driven by Washington and Oregon clean energy policies and their strong preference for variable and intermittent wind and solar power. Net Power Expenses typically represent nearly 60% of the District's annual costs, however for 2023 the percentage is 48.5%, which is lower than normal due to a larger than typical capital budget and the BPA RDC that reduces Net Power Expense. These expenses include purchased power (net of revenue from selling surplus electricity into the wholesale power market) and transmission services.

The 2023 budget has been prepared in compliance with the District's financial policies which call for conservative power supply planning assumptions that are consistent with prudent utility practices. The District employs a stochastic model (Monte Carlo analysis) that predicts 1,000 possible net power expense outcomes based on variations in electrical load and hydro-electric generation as well as variations in natural gas and power market prices. The District selects the annual net power expense budget based on the 25th percentile of the distribution of simulated outcomes which represents a 75% probability that the net power budget will not be exceeded.

Overall, 2023 net power expenses are expected to be $8.7 million less than the 2022 original budget which represents a 10.9% reduction. The main driver for the decrease is the $6.1 million BPA RDC the District will receive in 2023.

Non-Power Operating Expenses

Non-power operating expenses are expected to increase $1.9 million or 3.6% over the 2022 original budget, of which $0.7 million is related to taxes and depreciation. Taxes are expected to increase 0.4% as a function of higher expected revenues and depreciation is expected to increase 6.6% as a result of new capital additions in recent years. That leaves an expected increase of $1.2 million (or

4.2%) in the balance of non-power operating expenses. Over the last several years, the District has successfully managed its operations and maintenance (O&M) expenses despite cost pressures associated with a growing customer base, higher employee benefit costs, annual wage escalation and new regulatory requirements. The District's O&M "cost per customer" metric continues to remain well below the benchmark numbers published by the American Public Power Association (APPA). This is a direct result of the efforts and skills of District employees as well as investments in technology and employee training.

Net Capital Additions

One of the District's strategic goals is to constantly strive to meet 21st century grid expectations which means a focus on reliability, resiliency, automation, and increasing capacity to meet customer growth and support economic development. The District's 2023 capital budget includes projects that support our visionary 115-kilovolt (kV) transmission system reliability improvement plans, continued customer growth, upgrading and modernizing aging equipment, and the deployment of small cell wireless as part of our Broadband business revenue growth strategy. The 2023 capital budget is higher than typical as it includes final construction cost estimates for the Spaw-to-Phillips 115-kV transmission line project carried over from 2022 along with a small cell wireless project in our Broadband business. These projects have experienced delays in engineering design and permitting along with ongoing supply chain constraints being experienced worldwide. The 2023 capital budget also includes $1.0 million for physical security projects to help ensure employee and customer safety through modernization of District facilities.

The 2023 total gross capital budget has been set at $29.9 million including the following six categories: $15.8 million (53.0%) for substation and distribution projects; $8.5 million (28.6%) for transmission system additions; $1.8 million (6.0%) for broadband projects; $1.8 million (6.0%) for general plant; $1.0 million (3.4%) for security projects; and $0.9 million (3.0%) for information technology projects. A credit of $3.1 million to account for expected contributions-in-aid-to-construction (CIAC) from developers, customers and community partners provides an offset to capital expenses and results in expected 2023 Net Capital Additions of $26.8 million.

Debt Service

In 2020, the District took advantage of historically low interest rates and issued $20 million in new bonds. This helped ensure adequate funding of strategic and core capital investments while taking pressure off rate-based revenues. In addition, through extension of bond insurance and advance refunding of the 2011 bonds, the District was also able to lower bond covenant requirements to fund a Debt Service Reserve Fund. Currently, the District does not have plans to issue additional bonds in 2023.

Conclusion

Overall, staff believes the 2023 budget provides a balance of revenues and expenses that will allow the District to continue to be responsive to near-term customer growth while also investing in facilities and equipment that are foundational to providing ever increasing value to our customers over the long-term. While we continue to operate in a time of great uncertainty, it is gratifying to know the District's long tradition of rigorous planning and financial stewardship has positioned us well for the coming year and that our customers will continue to receive reliable and affordable services without the need for retail rate increases.

Key Assumptions

Tab 2

2023 BUDGET - KEY ASSUMPTIONS

REVENUES

- The 2023 Budget reflects no revenue increase.
- Gross retail energy sales of $137.2 million are based on 202.9 aMW of retail load.
- Sales for resale are estimated at $11.6 million.
- 623 new customer connections are included in the 2022 load forecast (see Tab 8) and of these new customer connections, 599 are residential.

POWER & TRANSMISSION COSTS *(see Tab 10, 2023 Power Supply Plan, Section 4, for more details)*

- **Starting October 1, 2023, the District's contract with BPA will switch from a Block/Slice contract to a Load Following Contract.**
  - The District is making the change to a Load Following contract to mitigate the District's risk from increasing market prices, market price excursions that can cost millions of dollars over a multi-day period, and potential future shortages of physical power all caused by resource adequacy concerns.
- **The District's net power cost is estimated using a "Risk Model or Probability of Occurrence Forecast."**
  - The purpose of the Risk Model is to define the distribution of possible outcomes taking into account changes in power cost variables.
  - The model is run 1,000 times to produce a probability curve of net power cost.
  - A conservative assumption of the 25th percentile of probability is used for budgeting purposes. Thus 75% of the model's net power cost outcomes were equal to or less than the budgeted net power cost.
  - The net power cost budget details are developed by choosing a single model result of occurrence at the 25th percentile of probability point and using its detail information.
- **Within the model, known variables were included as follows:**
  - Power costs reflect BPA's Tiered Rate Methodology.
  - The budget includes an irrigation mitigation benefit of $3.4 million in CY 2023.
  - Conservation program costs for CY 2023 are $2.1 million, offset by a $1.8 million reimbursement from BPA.
  - No Cost Recovery Adjustment Clauses (CRACs) are assumed for CY 2023.
  - Court ordered additional spill costs are included in BPA's rates for 2023.
  - No slice true-up credit is assumed for CY 2023.
  - BPA Reserves Distribution Clause credit of $6.1 million in CY 2023.
  - Power cost forecast includes the estimated cost to meet the requirements of the Energy Independence Act (EIA).
  - No carbon cap and trade impact included in power budget.

2023 BUDGET - KEY ASSUMPTIONS
(CONTINUED)

INTERNAL DISTRICT COSTS

Employee benefits and payroll taxes of $7.0 million are based on total District labor of $17.2 million. Employee benefit costs include the District's share of FICA, Medicare, retirement, medical, dental, life insurance, short-term disability insurance, personal leave, unemployment tax, and state industrial insurance (see Tab 5).

FINANCING

- No debt issuance is assumed in the 2023 Budget.

CAPITAL

- Capital is based on the District's five-year Capital Requirements Plan (see Tab 9).

- Includes $8.5 million for new transmission line planning and design.
  - New transmission line from Phillips to Spaw
  - Spaw Phillips 115kV Breaker
  - Transmission Line – Sunset to Dallas Road

- Includes $15.8 million for distribution system upgrades and additions.
  - $6.2 million for projected customer growth, such as requested electrical line extension, transformers, and meters (1,000 new service connections)
  - $5.8 million for capacity and reliability upgrades and additions
  - $2.4 million for repair and replacement of aging underground cable

- Includes $0.9 million for Information Technology network reliability upgrades, utility analytics, and enterprise applications.

- Includes $1.8 million for projected broadband growth
  - Advanced wireless/small cell

- Includes $1.0 million for physical security upgrade

- Includes $1.8 million for equipment replacements and facilities improvements/replacements.
  - Vac Truck
  - Admin HVAC Controls
  - Service Truck
  - Backhoe
  - Half Ton Pickup (x2)

Annual Budget Summary

Tab 3

Comparative Operating Statement
Public Utility District No. 1 of Benton County
2023 Budget

	2023 Budget	2022 Original Budget	Increase/ (Decrease)	% Change
OPERATING REVENUES				
Energy Sales - Retail	$137,198,444	$136,768,696	$429,748	0.3%
Energy Secondary Market Sales	10,729,262	21,118,273	(10,389,011)	(49.2%)
Transmission of Power for Others	915,346	1,100,000	(184,654)	(16.8%)
Broadband Revenue	2,910,308	3,082,142	(171,834)	(5.6%)
Other Revenue	1,575,349	1,409,982	165,367	11.7%
TOTAL OPERATING REVENUES	**153,328,709**	**163,479,093**	**(10,150,384)**	**(6.2%)**
OPERATING EXPENSES				
Purchased Power	68,456,292	86,839,587	(18,383,295)	(21.2%)
Purchased Transmission and Ancillary Services	14,250,896	15,261,004	(1,010,108)	(6.6%)
Conservation	373,452	252,810	120,642	47.7%
Total Power Supply	83,080,640	102,353,401	(19,272,761)	(18.8%)
Transmission Operation & Maintenance	168,909	171,866	(2,957)	(1.7%)
Distribution Operation & Maintenance	13,371,383	12,530,301	841,083	6.7%
Broadband Expense	1,192,566	1,205,854	(13,287)	(1.1%)
Customer Accounting, Collection and Information	4,994,528	4,751,609	242,919	5.1%
Administrative & General	9,222,397	9,119,546	102,851	1.1%
Subtotal before Taxes & Depreciation	28,949,784	27,779,175	1,170,609	4.2%
Taxes	14,712,000	14,651,000	61,000	0.4%
Depreciation & Amortization	11,232,810	10,538,140	694,670	6.6%
Total Other Operating Expenses	54,894,594	52,968,315	1,926,279	3.6%
TOTAL OPERATING EXPENSES	**137,975,234**	**155,321,716**	**(17,346,482)**	**(11.2%)**
OPERATING INCOME (LOSS)	**15,353,475**	**8,157,377**	**7,196,098**	**88.2%**
NONOPERATING REVENUES & EXPENSES				
Interest Income	600,000	100,000	500,000	n/a
Other Income	336,486	412,198	(75,712)	(18.4%)
Interest Expense	(2,717,067)	(2,826,486)	109,419	(3.9%)
Debt Discount & Expense Amortization	422,897	402,824	20,073	5.0%
TOTAL NONOPERATING REVENUES & EXPENSES	**(1,357,684)**	**(1,911,464)**	**553,780**	**(29.0%)**
INCOME (LOSS) BEFORE CONTRIBUTIONS	**13,995,791**	**6,245,913**	**7,749,878**	**124.1%**
CAPITAL CONTRIBUTIONS	**3,113,466**	**2,599,537**	**513,929**	**19.8%**
CHANGE IN NET POSITION	**$17,109,257**	**$8,845,450**	**$8,263,807**	**93.4%**
NET POWER	**$71,436,032**	**$80,135,128**	**($8,699,096)**	**(10.9%)**
CHANGE IN NET POSITION	**$17,109,257**	**$8,845,450**	**$8,263,807**	**93.4%**
Less: Gross Capital in Excess of Depreciation	(18,635,955)	(15,911,428)	(2,724,527)	17.1%
Less: Principal Payment on Outstanding Debt	(3,130,000)	(3,195,000)	65,000	(2.0%)
Plus: Non-Cash Items (Prepaid Expense Amortizations, etc.)	594,239	614,312	(20,073)	(3.3%)
ESTIMATED ADDITION/(REDUCTION) TO CASH RESERVES	**($4,062,459)**	**($9,646,666)**	**$5,584,207**	**(57.9%)**

Comparative Capital Budget
Public Utility District No. 1 of Benton County
2023 Budget

Capital Category	Project Group	2023 Budget	2022 Original Budget	Increase/ (Decrease)	% Change
Transmission	Transmission Projects	$8,534,445	$6,223,927	$2,310,518	37.1%
Distribution	Capacity & Reliability	5,838,682	5,842,945	(4,263)	(0.1%)
	Customer Growth	6,214,210	5,402,840	811,370	15.0%
	General Plant	680,000	630,000	50,000	7.9%
	Other	648,750	770,592	(121,842)	(15.8%)
	Repair & Replace	2,442,834	2,158,091	284,743	13.2%
Total Distribution		15,824,476	14,804,468	1,020,008	6.9%
Broadband	Broadband	1,775,213	1,868,731	(93,518)	(5.0%)
General Plant	General Plant	1,818,300	1,503,000	315,300	21.0%
Information Technology	Information Technology	901,332	1,057,802	(156,470)	(14.8%)
Security	Security	1,014,999	991,640	23,359	2.4%
Grand Total (Gross)		**29,868,765**	**26,449,568**	**3,395,838**	**12.8%**
Contributions in Aid	Broadband	(58,800)	(58,800)	-	0.0%
	Customer Growth	(2,948,616)	(2,487,712)	(460,904)	18.5%
	Other	(106,050)	(53,025)	(53,025)	100.0%
Total Contributions in Aid		(3,113,466)	(2,599,537)	(513,929)	19.8%
Net Capital		**$26,755,299**	**$23,850,031**	**$2,881,909**	**12.1%**

Comparative Budget by Activity Code
Public Utility District No. 1 of Benton County
2023 Budget

		2023 Budget	2022 Original Budget	Increase/ (Decrease)	% Change
Allocated Costs:					
88	Payroll Taxes	$1,293,344	$1,241,105	$52,239	4.2%
101	Employee Benefits	5,717,540	5,403,233	314,307	5.8%
	Allocated Cost Total	**7,010,884**	**6,644,338**	**366,546**	**5.5%**
Payroll:					
10	District Overtime Labor	926,678	876,918	49,760	5.7%
11	All Other District Labor	16,226,346	15,564,091	662,254	4.3%
	District Labor Total	**17,153,023**	**16,441,009**	**712,014**	**4.3%**
Power Cost:					
9	Purchased Power	79,730,353	98,691,958	(18,961,605)	(19.2%)
	Power Cost Total	**79,730,353**	**98,691,958**	**(18,961,605)**	**(19.2%)**
System Costs:					
12	Materials & Supplies	4,821,791	7,179,674	(2,357,883)	(32.8%)
13	Store Expense - Non Labor	25,000	25,000	-	0.0%
14	Small Tools & Materials	113,550	105,950	7,600	7.2%
15	Transportation Expense-Gas&Oil	380,000	225,000	155,000	68.9%
16	Transportation Exp-Repair&Main	200,000	192,000	8,000	4.2%
17	Operation & Maintenance Exp	795,822	758,922	36,900	4.9%
18	Misc Construction Expense	409,795	304,617	105,178	34.5%
19	Tree Trimming - Contract	734,000	866,000	(132,000)	(15.2%)
20	Off-the-Dock Labor	1,176,130	955,450	220,680	23.1%
21	Elec Construction Contracts	9,967,981	5,529,448	4,438,533	80.3%
23	Environmental	26,000	26,000	-	0.0%
	System Cost Total	**18,650,069**	**16,168,061**	**2,482,008**	**15.4%**
General Expenditures:					
25	Maintenance of Software	1,153,419	1,261,049	(107,630)	(8.5%)
26	Computer Hardware & Equip Exp	101,000	140,500	(39,500)	(28.1%)
27	Personal Computer Software	144,100	141,500	2,600	1.8%
28	Personal Computer O&M Costs	216,700	205,700	11,000	5.3%
29	Personal Computer Supplies&Exp	12,000	10,500	1,500	14.3%
30	Customer Service Expenses	566,855	515,046	51,809	10.1%
33	Office Supplies & Expenses	91,200	85,200	6,000	7.0%
34	Insurance	924,295	817,950	106,345	13.0%
37	Grounds Care	94,524	94,524	-	0.0%
38	Maint of Bldg & Improvements	362,600	310,900	51,700	16.6%
39	Maint of Equipment	39,500	39,400	100	0.3%
40	Rents	382,548	350,316	32,232	9.2%
41	Insurance Damages & Other Reim	10,000	10,000	-	0.0%
42	Business Expense & Travel	221,150	227,450	(6,300)	(2.8%)

Comparative Budget by Activity Code
Public Utility District No. 1 of Benton County
2023 Budget

	2023 Budget	2022 Original Budget	Increase/ (Decrease)	% Change
43 Training Expense & Travel	204,461	190,606	13,855	7.3%
44 Other General Expenses	1,096,648	1,143,569	(46,921)	(4.1%)
45 Subscriptions & Publications	40,888	24,606	16,282	66.2%
46 Treasurer Expenses	501,000	491,000	10,000	2.0%
General Expenditure Total	**6,162,888**	**6,059,816**	**103,072**	**1.7%**
Utilities:				
50 Telephone & Answering Services	278,500	273,500	5,000	1.8%
51 Water,Garbage,Irrigation&Other	79,000	79,000	-	0.0%
Utilities Total	**357,500**	**352,500**	**5,000**	**1.4%**
Outside Services:				
60 Audit Examination - State	153,500	113,500	40,000	35.2%
61 Professional Services	1,768,850	2,141,152	(372,302)	(17.4%)
Outside Services Total	**1,922,350**	**2,254,652**	**(332,302)**	**(14.7%)**
Dues and Assessments:				
70 Civic & Service Organizations	21,095	19,415	1,680	8.7%
72 Industry Assoc Assessments	544,774	617,552	(72,778)	(11.8%)
Dues and Assessments Total	**565,869**	**636,967**	**(71,098)**	**(11.2%)**
Taxes:				
80 Public Utility & Excise Tax	5,500,000	5,477,000	23,000	0.4%
81 State Privilege Tax	2,806,000	2,797,000	9,000	0.3%
82 City Occupation Taxes	6,406,000	6,377,000	29,000	0.5%
Taxes Total	**14,712,000**	**14,651,000**	**61,000**	**0.4%**
Other Employee Costs:				
104 Other Employee Costs	257,300	243,074	14,226	5.9%
Other Employee Costs Total	**257,300**	**243,074**	**14,226**	**5.9%**
Energy Resources:				
111 Electric Vehicle	5,000	5,000	-	0.0%
112 Residential Conservation Exp	475,000	481,000	(6,000)	(1.2%)
113 Commercial Conservation Exp	220,000	330,000	(110,000)	(33.3%)
114 Industrial Conservation Exp	320,000	480,000	(160,000)	(33.3%)
115 Agriculture Conservation Exp	175,000	170,000	5,000	2.9%
118 Low Income Conservation	325,000	300,000	25,000	8.3%
Energy Resources Total	**1,520,000**	**1,785,000**	**(265,000)**	**(14.8%)**

Comparative Budget by Activity Code
Public Utility District No. 1 of Benton County
2023 Budget

		2023 Budget	2022 Original Budget	Increase/ (Decrease)	% Change
Public Information:					
119	Public Information Expenses	334,110	319,960	14,150	4.4%
	Public Information Total	**334,110**	**319,960**	**14,150**	**4.4%**
Purchased Electric Plant & Equip:					
120	Substation Xfrs & Regulators	627,527	345,000	282,527	81.9%
121	Substation Equip & Materials	1,556,784	1,195,511	361,272	30.2%
122	Line Devices	444,387	379,600	64,787	17.1%
123	Transformers & Related Items	1,500,000	1,500,000	-	0.0%
124	Meters & Related Items	600,000	550,000	50,000	9.1%
125	Land & Land Rights - Electric	139,167	27,500	111,667	n/a
127	SCADA Communications Equipment	41,250	38,059	3,191	8.4%
128	SCADA Substation Equipment	30,130	31,739	(1,609)	(5.1%)
	Purchased Electric Plant and Equip Total	**4,939,244**	**4,067,410**	**871,834**	**21.4%**
Purchased General Plant & Equip:					
131	Structures & Improvements	1,094,000	552,000	542,000	>200%
132	Office Equipment	3,000	7,000	(4,000)	(57.1%)
133	Transportation Equipment	1,080,000	1,107,000	(27,000)	(2.4%)
134	Tools, Shop & Stores Equipment	89,000	18,100	70,900	>200%
135	Laboratory & Test Equipment	183,800	159,000	24,800	15.6%
136	Communication Equipment	130,000	205,000	(75,000)	(36.6%)
137	Capitalized Computer Software	173,800	495,000	(321,200)	(64.9%)
138	Computer Equipment	850,000	720,000	130,000	18.1%
	Purchased General Plant & Equip Total	**3,603,600**	**3,263,100**	**340,500**	**10.4%**
Debt Service:					
150	Principal	3,130,000	3,195,000	(65,000)	(2.0%)
151	Interest	1,917,684	2,013,214	(95,530)	(4.7%)
	Debt Service Total	**5,047,684**	**5,208,214**	**(160,530)**	**(3.1%)**
Other Misc. Expenditures:					
200	New Services Expenses	2,500	2,500	-	0.0%
201	New Product Expenses	3,500	3,500	-	0.0%
	Other Misc Expenditures Total	**6,000**	**6,000**	**-**	**0.0%**
Depreciation:					
301	Depreciation (Other)	11,232,810	10,538,140	694,670	6.6%
	Transportation Equipment - Allocation	426,000	388,300	37,700	9.7%
	Depreciation Total	**11,658,810**	**10,926,440**	**732,370**	**6.7%**
	Grand Total	**$173,631,684**	**$187,719,499**	**($14,087,815)**	**(7.5%)**

Comparative Broadband Budget
Public Utility District No. 1 of Benton County
2023 Budget

	2023 Budget [1]	2022 Original Budget	Increase/ (Decrease)	% Change
Revenue	$2,910,308	$3,082,142	($171,834)	(5.6%)
Operating Expenses	(1,192,566)	(1,205,854)	13,287	(1.1%)
Net Income (Loss)	**1,717,742**	**1,876,288**	**(158,547)**	**(8.5%)**
Broadband Capital:				
Base Capital Expenditures	1,051,200	1,195,231	(144,031)	(12.1%)
Small Cell	724,013	673,500	50,513	7.5%
Capital Contributions	(58,800)	(58,800)	-	0.0%
Net Capital Expenditures	**1,716,413**	**1,809,931**	**(93,518)**	**(5.2%)**
Net Cash from / (to) Broadband	**$1,329**	**$66,357**	**($65,029)**	**(98.0%)**

	Future 5 Years (2023-2027)[1]	Previous 5 Years (2018-2022)
Five Year Rolling Net Cash Test[2]	$3,679,308	$2,762,407

1) Includes small cell estimated cost, revenue, and capital contributions
2) Resolution 2432: Broadband Strategy states "… maintain net positive cash flows over rolling five-year period, both looking back and forward. Net cash flow may be negative in individual years provided that the amount is offset by positive net cash flow in other years."

Summary of Revenues

Tab 4

Comparative Revenues
Public Utility District No. 1 of Benton County
2023 Budget

	2023 Budget	2022 Original Budget	Increase/ (Decrease)	% Change
Retail Power Sales	$137,198,444	$136,768,696	$429,748	0.3%
Wholesale Power Sales	11,644,608	22,218,273	(10,573,665)	(47.6%)
Broadband Revenues	2,910,308	3,082,142	(171,834)	(5.6%)
Interest Income and Other	936,486	470,448	466,038	99.1%
Other Electric Revenue	1,575,350	1,451,733	123,617	8.5%
Joint Use Cost Share	700,000	700,000	-	0.0%
Capital Contributions:				
Electric Facilities	3,054,666	2,540,737	513,929	20.2%
Broadband Facilities	58,800	58,800	-	0.0%
Total Revenue	**$158,078,662**	**$167,290,829**	**($9,212,167)**	**(5.5%)**

Comparative Revenues

Public Utility District No. 1 of Benton County

2023 Budget

	2023 Budget	2022 Original Budget	Increase/ (Decrease)	% Change
Finance and Customer Service				
Finance				
515 Interest Income	$600,000	$100,000	$500,000	n/a
151 BAB's Subsidy	336,486	370,448	(33,962)	(9.2%)
560 Insurance/Claims Reimbursements	100,000	141,750	(41,750)	(29.5%)
Total Finance	1,036,486	612,198	424,288	69.3%
Customer Service				
545 Other Electric Revenue	500,000	500,000	-	0.0%
Total Customer Service	500,000	500,000	-	0.0%
Total Finance and Customer Service	**1,536,486**	**1,112,198**	**424,288**	**38.1%**
Engineering				
523 Pole Contact Revenue				
Pole Contact Fees	500,000	450,000	50,000	11.1%
525 Capital Contributions				
Angus Franklin Transmission	43,550	21,775	21,775	100.0%
Joint Use Deficiency Correction CAIC	62,500	31,250	31,250	100.0%
Ridgeline Under Pass	-	-	-	n/a
Misc. Customer Fees (Primary, etc.)	2,948,616	2,487,712	460,904	18.5%
545 Other Electric Revenue	700,000	700,000	-	0.0%
Total Engineering	**4,254,666**	**3,690,737**	**563,929**	**15.3%**
Power Management				
505 Wholesale Power Sales Revenue				
Slice Power Sales for Resale	10,729,262	9,422,037	1,307,225	13.9%
Fredrickson Power Sales for Resale	-	11,696,236	(11,696,236)	n/a
Fredrickson Gas Sales for Resale	-	-	-	n/a
510 Wholesale Transmission Sales Revenue	915,346	1,100,000	(184,654)	(16.8%)
Total Power Management	**11,644,608**	**22,218,273**	**(10,573,665)**	**(47.6%)**
Broadband				
550 Products and Services Revenue				
Ethernet Revenue	1,657,008	1,700,602	(43,594)	(2.6%)
TDM Revenue	36,000	36,000	-	0.0%
Wireless Revenue	5,000	15,000	(10,000)	(66.7%)
Internet Transport Revenue	89,760	88,000	1,760	2.0%
Access Internet Revenue	524,000	488,000	36,000	7.4%
USC Cran	99,540	99,540	-	0.0%
Broadband Revenue-Other (Incl. Fiber Leases)	499,000	655,000	(156,000)	(23.8%)
525 Capital Contributions				
Advanced Wireless/Small Cell	58,800	58,800	-	0.0%
Total Broadband	**2,969,108**	**3,140,942**	**(171,834)**	**(5.5%)**
Operations				
Supt. of Transmission & Distribution				
550 Products and Services Revenue				
Pre-Notifier - Tree Trimming	43,300	53,830	(10,530)	(19.6%)
Safety Coordinator	123,000	-	123,000	n/a
Total Supt. of Transmission & Distribution	166,300	53,830	112,470	n/a
Supt. of Operations				
535 Microwave Site Rental	70,228	67,956	2,272	3.3%
Rattlesnake Site Rental	44,822	44,197	625	1.4%
545 Other Electric Revenue				
Windfarm Maintenance	114,000	114,000	-	0.0%

Comparative Revenues

Public Utility District No. 1 of Benton County

2023 Budget

	2023 Budget	2022 Original Budget	Increase/ (Decrease)	% Change
Total Supt. of Operations	229,050	226,153	2,897	1.3%
Total Operations	**395,350**	**279,983**	**115,367**	**41.2%**
Non-Departmental				
501 Retail Energy Sales Total	131,049,486	130,647,933	401,553	0.3%
503 Bad Debt Expense	(257,042)	(256,237)	(805)	0.3%
502 City Occupation Taxes Collected	6,406,000	6,377,000	29,000	0.5%
520 Temporary Service Revenue	80,000	80,000	-	0.0%
Total Non-Departmental	**137,278,444**	**136,848,696**	**429,748**	**0.3%**
Grand Total Revenue	**$158,078,662**	**$167,290,829**	**($9,212,167)**	**(5.5%)**

Labor Staffing

Tab 5

Public Utility District No. 1 of Benton County
2023 Labor & Benefits Budget

District Labor	2023 Budget	2022 Original Budget	Increase (Decrease)	% Change
Regular Labor - Activity 11	$16,226,341	$15,564,091	$662,250	4.3%
Overtime Labor - Activity 10	926,678	876,918	49,760	5.7%
Total Labor	**$17,153,019**	**$16,441,009**	**$712,010**	**4.3%**
District Labor Taxes & Benefits				
Payroll Taxes - Activity 88	$1,293,344	$1,241,105	$52,239	4.2%
Employee Benefits - Activity 101	5,717,541	5,403,233	314,308	5.8%
Total Labor Taxes & Benefits	**$7,010,885**	**$6,644,338**	**$366,547**	**5.5%**

District Staffing	2023 Budget	2022 Original Budget	Increase (Decrease)	% Change
Full Time Equivalent Positions (FTEs)	155.75	155.50	0.25	0.2%

Public Utility District No. 1 of Benton County
2023 Staffing Plan

Full Time Equivalent Positions (FTEs)

Directorate	2023 Budget	2022 Budget	Increase/ (Decrease)
Executive / Human Resources / Communications & Government	12.25	11.25	1.00
Finance & Customer Service	32.00	35.25	(3.25)
Engineering	17.25	16.25	1.00
Power Management	9.00	10.00	(1.00)
Operations	67.50	65.50	2.00
IT	17.75	17.25	0.50
Authorized District Positions	**155.75**	**155.50**	**0.25**
Less: FTEs utilized by other local utilities*	(1.10)	(0.50)	(0.60)
District Adjusted FTEs	**154.65**	**155.00**	**(0.35)**

*Positions that are shared with local utilities are the Safety Coordinator & Vegetation Management

	Change in FTEs	(0.35)
Dept. 1 - General Manager		**1.00**
Add - Administrative Assistant II - Transfer from Finance		1.00
Dept. 11 - Finance		**(1.00)**
Remove - Administrative Assistant II - Transfer to Executive		(1.00)
Dept. 44 - Customer Service		**(2.25)**
Remove - On Call Positions		(1.25)
Remove - Customer Service Representatives I (LA)		(1.00)
Dept. 45 - Energy Programs		**(1.00)**
Remove - Energy Efficiency Advisor II		(1.00)
Dept. 22 - Customer Engineering		**1.00**
Add - Engineering Technician		1.00
Dept. 31 - Operations		**1.00**
Add - Utility Safety Coordinator II - Shared position filled by Benton PUD		1.00
Dept. 32 - Superintendent Transmission & Distribution		**1.00**
Add - Journeyman Lineman		2.00
Remove - Journeyman Lineman (Retirement Overlap 2022)		(1.00)
Dept. 18 - IT System Applications		**0.50**
Add - Applications Analyst II/III - Retirement Overlap		0.50
FTEs utilized by other local utilities		**(0.60)**
Add - FTEs Utilized by Other Local Utilities - Utility Safety Coordinator II		(0.60)

Public Utility District No. 1 of Benton County
2023 Payroll Taxes and Employee Benefits Allocation Budget

Overview

The District allocates the cost of payroll taxes, employee benefits (including paid time off) over actual regular productive work hours. Overtime hours receive an allocation of those payroll taxes and benefits that directly relate to overtime. Payroll taxes and employee benefit costs are distributed to applicable general ledger accounts via activity codes 88 and 101, respectively, by applying a percentage rate to overtime and regular labor (activity codes 10 and 11, respectively). Calculation of the percentage rate is provided below.

Labor Breakdown	2023 Budget	2022 Original Budget	Increase/ (Decrease)	Notes
Labor charged to Expense	$10,744,171	$10,072,215	$671,956	
Labor charged to Capital	2,565,829	2,731,175	(165,346)	
Labor charged to Warehouse & Equipment Maintenance	632,757	569,829	62,928	
Total Productive Labor	$13,942,757	$13,373,219	$569,538	
Paid Leave - Includes Holidays and Personal Leave	$2,283,589	$2,190,872	$92,717	
Total Regular Labor	**$16,226,346**	**$15,564,091**	**$662,255**	
Benefits/Taxes				
Social Security	$1,044,625	$1,002,710	$41,915	
Medicare	248,719	238,395	10,324	
State Industrial	124,800	138,382	(13,582)	This represents 80% of the employer portion of the total L&I charges with a 3% increase assumption. The District's experience rating is factored into the premiums.
Unemployment	10,000	12,000	(2,000)	The District does not pay unemployment tax but instead reimburses the State for benefits paid to former employees.
PERS	1,725,993	1,632,836	93,157	According to the Collective Bargaining Agreement, the District provides a deferred compensation match of 3%. In addition, there is a $50 per month contribution to a VEBA account along with an additional $150 per month contribution which is dependent on the employee's participation in a wellness program. As of 9/1/2022, the employer rate for PERS was set at 10.39%, an increase of 0.14% from the previous rate (2021/2022). The 2023 projected rate is expected to stay at 10.39%.
Deferred Compensation	473,920	448,988	24,932	
VEBA Contribution	366,000	360,000	6,000	
Medical Insurance	2,517,588	2,315,442	202,146	The 2022 budget assumes a 10% increase for medical and a minor increase for dental and vision insurance on 1/1/2023. A shift in employee enrollment to the CDHP Plan has mitigated the increase in medical.
Dental Insurance	211,434	209,951	1,483	
Vision Insurance	37,805	37,633	172	
Life Insurance	47,000	45,000	2,000	Updated budget based on estimated rates from new provider.
STD Admin Fee	3,000	3,000	-	
Total Benefits/Taxes	$6,810,885	$6,444,337	$366,548	
Leave				
Change PL Liability	$200,000	$200,000	$0	
Paid Time Off	2,283,589	2,190,872	92,717	
Leave Subtotal	$2,483,589	$2,390,872	$92,717	
Total Benefits/Taxes and Leave	**$9,294,474**	**$8,835,209**	**$459,265**	

Allocation Rate - Regular and Overtime	
Total Regular Benefits/Taxes and Leave	$9,294,474
Total Regular Productive Labor	$13,942,757
Allocation Rate - Regular Time	**66.66%**

Budget by Directorate

Tab 6

Revenue and Expense Summary by Department
Public Utility District No. 1 of Benton County
2023 Budget

	2023 Budget	2022 Original Budget	Increase/ (Decrease)	% Change
REVENUE				
Finance and Customer Service	$1,536,486	$1,112,198	$424,288	38.1%
Broadband	2,969,108	3,140,942	(171,834)	(5.5%)
Engineering	4,254,666	3,690,737	563,929	15.3%
Power Management	11,644,608	22,218,273	(10,573,665)	(47.6%)
Operations	395,350	279,983	115,367	41.2%
Non-Departmental	137,278,444	136,848,696	429,748	0.3%
Total Revenue	**$158,078,662**	**$167,290,830**	**($9,212,168)**	**(5.5%)**
EXPENSES				
Executive Administration	$3,231,846	$3,110,533	$121,313	3.9%
Finance & Customer Service	4,823,113	4,764,408	58,705	1.2%
Information Technology	5,347,233	5,806,563	(459,330)	(7.9%)
Broadband	2,876,641	2,983,020	(106,379)	(3.6%)
Engineering	21,216,366	17,556,237	3,660,129	20.8%
Power Mangement	82,441,471	101,780,674	(19,339,203)	(19.0%)
Operations	15,365,637	14,388,072	977,565	6.8%
Non-Departmental	38,329,378	37,329,992	999,386	2.7%
Total Expenses	**$173,631,685**	**$187,719,499**	**($14,087,814)**	**(7.5%)**

Executive

Tab 6

PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY
2023 Budget
Summary of Expense by Directorate

Executive Administration

Department(s)		Totals
01	General Manager, Commission	2,249,836
02	Human Resources	363,400
03	Security	64,850
12	Communications & Government	553,760
Grand Total Expenses	**Executive Administration**	$3,231,846

Directorate Budget by Department and Activity
2023 Budget Compared to 2022 Original Budget

Directorate	Executive

Department	Activity	2023 Budget	2022 Original Budget	Increase / (Decrease)	% Increase / (Decrease)
1 - General Manager, Commission	11 - All Other District Labor	1,544,398	1,385,866	158,532	11.4%
	33 - Office Supplies & Expenses	14,200	14,200	0	0.0%
	42 - Business Expense & Travel	75,000	76,300	(1,300)	(1.7%)
	43 - Training Expense & Travel	15,500	9,900	5,600	56.6%
	44 - Other General Expenses	45,000	35,000	10,000	28.6%
	45 - Subscriptions & Publications	11,018	10,536	482	4.6%
	61 - Professional Services	85,000	85,000	0	0.0%
	72 - Industry Assoc Assessments	459,720	530,969	(71,249)	(13.4%)
1 - General Manager, Commission Total		**2,249,836**	**2,147,771**	**102,065**	**4.8%**
2 - Human Resources	42 - Business Expense & Travel	13,050	11,450	1,600	14.0%
	43 - Training Expense & Travel	3,800	3,800	0	0.0%
	44 - Other General Expenses	47,750	43,250	4,500	10.4%
	45 - Subscriptions & Publications	5,800	5,500	300	5.5%
	61 - Professional Services	95,250	161,000	(65,750)	(40.8%)
	72 - Industry Assoc Assessments	31,750	36,687	(4,937)	(13.5%)
	104 - Other Employee Costs	166,000	150,500	15,500	10.3%
2 - Human Resources Total		**363,400**	**412,187**	**(48,787)**	**(11.8%)**
3 - Security	33 - Office Supplies & Expenses	2,000		2,000	N/A
	38 - Maint of Bldg & Improvements	26,600		26,600	N/A
	42 - Business Expense & Travel	1,000		1,000	N/A
	43 - Training Expense & Travel	4,000		4,000	N/A
	61 - Professional Services	31,000		31,000	N/A
	72 - Industry Assoc Assessments	250		250	N/A
3 - Security Total		**64,850**		**64,850**	**N/A**
12 - Communications & Government	42 - Business Expense & Travel	13,200	23,000	(9,800)	(42.6%)
	45 - Subscriptions & Publications	1,000	800	200	25.0%
	61 - Professional Services	189,000	189,000	0	0.0%
	70 - Civic & Service Organizations	17,450	16,265	1,185	7.3%
	72 - Industry Assoc Assessments	1,500	4,050	(2,550)	(63.0%)
	119 - Public Information Expenses	331,610	317,460	14,150	4.5%
12 - Communications & Government Total		**553,760**	**550,575**	**3,185**	**0.6%**
Grand Total		**$3,231,846**	**$3,110,533**	**$121,313**	**3.9%**

Department 01 General Manager, Commission

Activity	Description	GL/FERC	BU Project	Amount
011	**All Other District Labor**			**$1,544,398**
	Labor - Admin General	920.00		$1,179,357
	Labor - Customer Accounting	903.00		$119,331
	Labor - Leave	184.30		$216,216
	Labor - Power	557.00		$29,494
033	**Office Supplies & Expenses**			**$14,200**
	Misc Office Supplies (Exec, HR & Communications)	921.00		$8,000
	Off-Site Storage of Permanent Records (Vital Record Holdings)	921.00		$1,200
	Records Mgmt - Shredding Services (CI Shred)	921.00		$5,000
042	**Business Expense and Travel**			**$75,000**
	Commission Travel	930.20		$53,000
	General Manager	921.00		$22,000
043	**Training Expense & Travel**			**$15,500**
	ARMA Local/In-State Trainings (Records Administrator)	921.00		$700
	Misc Training/Conferences (Local or Regional Seminars/Trainings)	921.00		$1,900
	NWPPA Admin Assistants Conference (Administrative Assistant)	921.00		$3,000
	NWPPA Washington Utilities Records Mgmt Meeting (Records Administratior)	921.00		$3,000
	WAPRO Bi-Annual Training (Director/ Supv. / Records Administrator)	921.00		$2,500
	WMCA Annual Conference & 3 Exec Committee Mtgs (supv. Exec. Administration)	921.00		$1,400
	WPUDA Bi-Annual Assistants Meeting (Administrative Assistant)	921.00		$1,500
	WPUDA Bi-Annual Records Roundtable (Records Administrator)	921.00		$1,500
044	**Other General Expenses**			**$45,000**
	Election Costs	930.20		$45,000
045	**Subscriptions & Publications**			**$11,018**
	Clearing Up (NewsData)	930.20		$9,185
	Doodle Poll	930.20		$83
	Energy GPS Newsletter	930.20		$1,600
	Wall Street Journal	930.20		$150
061	**Professional Services**			**$85,000**
	Contract Attorney	930.20		$75,000
	Misc. Legal (Gordon Thomas Honeywell)	930.20		$10,000

Department 01 General Manager, Commission

Activity	Description	GL/FERC	BU Project	Amount
072	**Industry Association Assessment**			**$459,720**
	APPA	930.20		$49,330
	ARMA Membership - Includes Local Chapter (Records Administrator)	921.00		$200
	Benton/Franklin Council of Governments	930.20		$0
	IEEE (General Manager)	921.00		$245
	International Institute of Municipal Clerks (Supv. Exec. Administration)	921.00		$215
	NAGARA Membership (Records Administrator)	921.00		$89
	Notary (Supv. Exec. Administration/ Administrative Assistant)	921.00		$90
	NW River Partners	557.00		$58,220
	NW River Partners Media Campaign Ask	557.00		$44,000
	NWPPA	930.20		$30,000
	PNUCC	557.00		$11,752
	PNUCC Columbia River Treaty Dues	557.00		$3,150
	PNWA Includes Association, PNWA River Values Campaign & PNWA Inland Ports & Nav	557.00		$22,952
	Professional Engineers License (General Manager)	921.00		$116
	Public Generating Pool (PGP)	557.00		$0
	Public Power Council (PPC)	557.00		$62,265
	Rotary Club of Tri Cities Sunrise (Commission)	930.20		$1,000
	SHRM (Administrative Assistant/ Communications Specialist)	921.00		$458
	South Central WMCA (Supv. Exec. Administration)	921.00		$50
	TRIDEC	930.20		$21,000
	WA Municipal Clerk Association (Supv. Exec. Administration)	921.00		$75
	WA Public Records Officer Association (Director /Supv. Exec. Administration/ Records Adm	921.00		$75
	WPUDA	930.20		$154,438

TOTAL EXPENSE General Manager, Commission **$2,249,836**

Department 02 Human Resources

Activity	Description	GL/FERC	BU Project	Amount
042	**Business Expense and Travel**			**$13,050**
	CWPU Meetings	921.00		$1,000
	Executive - Leadership Planning Workshop	921.00		$500
	HR - Affiliate Conferences	921.00		$6,000
	HR - AWC Labor Relations Institute	921.00		$1,750
	HR - Business Travel	921.00		$500
	HR - LERG Meetings	921.00		$3,300
043	**Training Expense & Travel**			**$3,800**
	District - Misc. Leadership & Developmental Training Expenses	921.00		$1,900
	HR - Misc. Training	921.00		$1,900
044	**Other General Expenses**			**$47,750**
	Driver Abstracts & Clearinghouse Queries	921.00		$2,500
	Employee Recognition & Programs	921.00		$8,000
	Energy Northwest Internship Program	921.00		$5,000
	General Expenses - Misc.	921.00		$250
	Recruitment - Advertising	921.00		$20,000
	Recruitment - Background Screening	921.00		$2,000
	Recruitment - Interview/Travel Expenses	921.00		$5,000
	Recruitment - Physicals & DOT Screens	921.00		$3,000
	Recruitment & Community Outreach	921.00		$500
	Trucking Consortium - Collections	921.00		$1,500
045	**Subscriptions & Publications**			**$5,800**
	Labor Law Poster Updates	921.00		$300
	Salary Surveys	921.00		$5,500
061	**Professional Services**			**$95,250**
	Consultant - Affirmative Action	921.00		$1,750
	Consultant - Policy Development	921.00		$2,000
	District - EmPOWERed Training	921.00		$25,000
	District - Respectful Workforce Training	921.00		$11,500
	District - SHL Kenexa Access Testing Administration (Employee or Candidate)	921.00		$3,000
	Leadership Training	921.00		$40,000
	Legal Services	921.00		$10,000
	Trucking Consortium (Service Fee & Training)	923.00		$2,000

Department 02 Human Resources

Activity	Description	GL/FERC	BU Project	Amount
072	**Industry Association Assessment**			**$31,750**
	CWPU Membership Assessments	921.00		$30,000
	District - Assoc. of WA Cities Membership	921.00		$500
	HR Staff - SHRM Professional Memberships (3)	921.00		$700
	HR Staff - World at Work Memberships (2)	921.00		$550
104	**Other Employee Costs**			**$166,000**
	360 Wellbeing Incentive	926.10		$40,000
	Assessments - ADA, Ergonomic & Fitness For Duty	926.10		$1,000
	Assessments - CDL Medical Certifications	926.10		$3,000
	COBRA Administration	926.10		$2,000
	CWPU Wellness Program/Catapult	926.10		$4,000
	District - Annual Employee Event	926.10		$10,000
	District - Employee Logo Clothing	926.10		$10,000
	Employee Assistance Program (EAP) Mediation	926.10		$500
	Flex 125 Plan Administration	926.10		$2,500
	HealthInvest Administration Fee	926.10		$1,500
	Local Wellness Activities & Events	926.10		$15,000
	Professional Certifications	926.10		$5,000
	Safety Program - Supplies & Administration	926.10		$1,500
	Safety Incentive	926.10		$40,000
	Tuition Reimbursement	926.10		$30,000
TOTAL EXPENSE Human Resources				**$363,400**

PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY
2023 Budget

Department 03 Security

Activity	Description	GL/FERC	BU Project	Amount
033	**Office Supplies & Expenses**			**$2,000**
	Security Program Expenses	921.00		$2,000
038	**Maint of Bldg & Improvements - General**			**$26,600**
	Administration Bldg Security	935.00		$1,800
	Broadband Facility Security	588.00		$600
	Jump Off Joe Security	935.02		$1,000
	Maintenance and Equipment	598.10		$10,000
	Operations Facility Security	598.10		$3,200
	Patrol Services of Operations	598.10		$6,000
	Prosser Butte Security	935.03		$1,000
	Prosser Facility Security	935.04		$2,000
	Umatilla Ridge Security	935.01		$1,000
042	**Business Expense and Travel**			**$1,000**
	Misc. Meetings, Scheduled Speaker Costs	921.00		$1,000
043	**Training Expense & Travel**			**$4,000**
	Security Conference, Misc. Webinars	921.00		$4,000
061	**Professional Services**			**$31,000**
	Consulting for Admin Fence and Ops Gate	923.00		$30,000
	Emergency Services Agency (KPD, KFD, etc) Fees for False Alarms	923.00		$1,000
072	**Industry Association Assessment**			**$250**
	ASIS International - Security Manager	921.00		$250
TOTAL EXPENSE Security				**$64,850**

Department 12 Communications & Government

Activity	Description	GL/FERC	BU Project	Amount
042	**Business Expense and Travel**			**$13,200**
	NWPPA, PPC, WPUDA (Henderson)	921.00		$8,800
	NWPPA, ProTrain, WPUDA (Sidwell)	921.00		$4,400
045	**Subscriptions & Publications**			**$1,000**
	Canva, Prosser Record Bulletin, Seattle Times, Shutterstock, Survey Monkey, Tri-City Heral	921.00		$1,000
061	**Professional Services**			**$189,000**
	Customer Survey - Satisfaction	910.00		$53,000
	Customer Survey - Transactional	910.00		$23,000
	Governmental Relations	910.00		$78,000
	Production, Graphics	910.00		$35,000
070	**Civic & Service Organizations**			**$17,450**
	Tri-Cities Hispanic Chamber of Commerce	921.00		$450
	Tri-Cities Regional Chamber of Commerce	921.00		$12,000
	Visit Tri-Cities	921.00		$5,000
072	**Industry Association Assessment**			**$1,500**
	Foundation for Water & Energy Education	910.00		$500
	TC Public Relations Society of America (Mgr. of Cummunication / Communication Specialis	910.00		$1,000
119	**Public Information Expenses**			**$331,610**
	Advertising (Print & Online)	910.00		$24,460
	Printing (Newsletter, Brochures, Inserts, Direct Mail, etc.)	910.00		$100,900
	Public Education/Community Outreach	910.00		$62,250
	TV/Radio	910.00		$144,000

TOTAL EXPENSE Communications & Government **$553,760**

Finance & Customer Service

Tab 6

PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY
2023 Budget
Summary of Expense by Directorate

Finance & Customer Service

Department(s)		Totals
11	Finance & Business Services	778,569
14	General Accounting	621,571
16	Risk Management & Treasury	1,472,775
17	Contracts & Purchasing	19,915
43	Marketing & Key Accounts	295,140
44	Customer Service	1,635,143
Grand Total Expenses	**Finance & Customer Service**	$4,823,113

Directorate Budget by Department and Activity
2023 Budget Compared to 2022 Original Budget

Directorate	Finance & Customer Services

Department	Activity	2023 Budget	2022 Original Budget	Increase / (Decrease)	% Increase / (Decrease)
11 - Finance & Business Services	10 - District Overtime Labor	$1,000	$2,000	($1,000)	(50.0%)
	11 - All Other District Labor	768,237	803,151	(34,914)	(4.3%)
	33 - Office Supplies & Expenses	5,000	5,000	-	0.0%
	42 - Business Expense & Travel	1,300	1,300	-	0.0%
	43 - Training Expense & Travel	1,600	2,600	(1,000)	(38.5%)
	45 - Subscriptions & Publications	200	200	-	0.0%
	72 - Industry Assoc Assessments	1,232	1,217	15	1.2%
11 - Finance & Business Services Total		**778,569**	**815,468**	**(36,899)**	**(4.5%)**
14 - General Accounting	10 - District Overtime Labor	1,000	1,000	-	0.0%
	11 - All Other District Labor	528,733	521,748	6,985	1.3%
	43 - Training Expense & Travel	4,000	4,000	-	0.0%
	45 - Subscriptions & Publications	1,920	2,220	(300)	(13.5%)
	60 - Audit Examination - State	84,500	79,500	5,000	6.3%
	72 - Industry Assoc Assessments	1,418	1,418	-	0.0%
14 - General Accounting Total		**621,571**	**609,886**	**11,685**	**1.9%**
16 - Treasurer	34 - Insurance	924,295	817,950	106,345	13.0%
	41 - Insurance Damages & Other Reim	10,000	10,000	-	0.0%
	42 - Business Expense & Travel	1,300	1,300	-	0.0%
	43 - Training Expense & Travel	3,600	3,600	-	0.0%
	46 - Treasurer Expenses	501,000	491,000	10,000	2.0%
	61 - Professional Services	32,500	32,500	-	0.0%
	72 - Industry Assoc Assessments	80	80	-	0.0%
16 - Treasurer Total		**1,472,775**	**1,356,430**	**116,345**	**8.6%**
17 - Purchasing	33 - Office Supplies & Expenses	11,000	11,000	-	0.0%
	42 - Business Expense & Travel	1,300	1,300	-	0.0%
	43 - Training Expense & Travel	4,500	4,500	-	0.0%
	44 - Other General Expenses	2,565	2,565	-	0.0%
	72 - Industry Assoc Assessments	550	430	120	27.9%
17 - Purchasing Total		**19,915**	**19,795**	**120**	**0.6%**
43 - Marketing & Key Accounts	11 - All Other District Labor	282,495	263,543	18,952	7.2%
	42 - Business Expense & Travel	1,500	1,500	-	0.0%
	43 - Training Expense & Travel	3,000	3,000	-	0.0%
	70 - Civic & Service Organizations	3,645	3,150	495	15.7%
	72 - Industry Assoc Assessments	4,500	4,500	-	0.0%
43 - Marketing & Key Accounts Total		**295,140**	**275,693**	**19,447**	**7.1%**
44 - Customer Service	10 - District Overtime Labor	20,479	21,868	(1,389)	(6.4%)
	11 - All Other District Labor	990,909	1,093,422	(102,513)	(9.4%)
	30 - Customer Service Expenses	566,855	515,046	51,809	10.1%
	33 - Office Supplies & Expenses	24,000	24,000	-	0.0%
	39 - Maint of Equipment	3,500	3,400	100	2.9%
	42 - Business Expense & Travel	7,200	7,200	-	0.0%
	43 - Training Expense & Travel	3,500	3,500	-	0.0%
	44 - Other General Expenses	5,000	5,000	-	0.0%
	45 - Subscriptions & Publications	200	200	-	0.0%
	61 - Professional Services	5,000	5,000	-	0.0%
	119 - Public Information Expenses	2,500	2,500	-	0.0%
	200 - New Services Expenses	2,500	2,500	-	0.0%
	201 - New Product Expenses	3,500	3,500	-	0.0%
44 - Customer Service Total		**1,635,143**	**1,687,136**	**(51,993)**	**(3.1%)**
Grand Total		**$4,823,113**	**$4,764,408**	**$58,705**	**1.2%**

Department 11 Finance & Business Services

Activity	Description	GL/FERC	BU Project	Amount
010	**District Overtime Labor**			**$1,000**
	Labor - Overtime - Admin General	920.00		$1,000
011	**All Other District Labor**			**$768,237**
	Labor - Admin General	920.00		$495,647
	Labor - Customer Accounting	903.00		$42,938
	Labor - Distribution	588.00		$84,027
	Labor - Leave	184.30		$107,553
	Labor - Purchased Power	557.00		$38,072
033	**Office Supplies & Expenses**			**$5,000**
	Misc Office Supplies	921.00		$5,000
042	**Business Expense and Travel**			**$1,300**
	Rating Agency Meeting	921.00		$700
	TEA/BPA/Other	921.00		$600
043	**Training Expense & Travel**			**$1,600**
	APPA/GFOA/Accounting/Auditing Standards Training (Director)	921.00		$1,000
	WPUDA (Director)	921.00		$600
045	**Subscriptions & Publications**			**$200**
	Miscellaneous Publications	921.00		$200
072	**Industry Association Assessment**			**$1,232**
	AICPA (American Institute of CPA's) Membership (Director)	921.00		$295
	CMA License - IMA (Inst of Mgmt Accountants) (Director)	921.00		$275
	CPA License - WA ST Board of Accountancy (Director)	921.00		$77
	GFOA (Government Finance Officers Assoc) Membership (Director)	921.00		$280
	WSCPA (WA State Board of CPA's) Membership (Director)	921.00		$305

TOTAL EXPENSE Finance & Business Services **$778,569**

Department 14 General Accounting

Activity	Description	GL/FERC	BU Project	Amount
010	**District Overtime Labor**			**$1,000**
	Labor - Overtime - Admin General	920.00		$1,000
011	**All Other District Labor**			**$528,733**
	Labor - Admin General	920.00		$454,710
	Labor - Leave	184.30		$74,023
043	**Training Expense & Travel**			**$4,000**
	Training (Manager)	921.00		$1,000
	Training (Analyst/Specialist)	921.00		$1,500
	Training (AP/Payroll)	921.00		$500
	WPUDA Finance Meetings	921.00		$1,000
045	**Subscriptions & Publications**			**$1,920**
	Accounting Publications	921.00		$200
	GFOA Fee - CAFR Excellence in Reporting program	921.00		$460
	Governmental GAAP (Various)	921.00		$610
	Keep Up to Date on A/P	921.00		$325
	Keep Up to Date on Payroll	921.00		$325
060	**Audit Examination - State**			**$84,500**
	Financial Statement External Audit	923.00		$62,500
	State Auditor's Office	923.00		$22,000
072	**Industry Association Assessment**			**$1,418**
	AICPA (American Institute of CPAs) (Manager/Analyst)	921.00		$295
	APA (American Payroll Assoc) (Specialist)	921.00		$265
	CPA License - WA State Board of Accountancy (Manager/Analyst)	921.00		$153
	Notary (Specialist)	921.00		$45
	WSCPA (Wash. Society of CPAs) (Manager/Analyst)	921.00		$660
TOTAL EXPENSE General Accounting				**$621,571**

Department 16 Risk Management & Treasury

Activity	Description	GL/FERC	BU Project	Amount
034	**Insurance**			**$924,295**
	Crime Policy	925.00		$4,891
	Cyber Security Insurance	925.00		$48,000
	Fiduciary Liability Policy	925.00		$17,000
	Liability, Directors & Officers	925.00		$22,500
	Liability, Excess $65 million, EIM	925.00		$87,870
	Liability, Excess General & Professional, AEGIS	925.00		$312,995
	Liability, General Assessment	925.00		$150,000
	Other Insurance Policies (Flood, Bonds, Fronting, etc)	925.00		$1,100
	Property, Excess, National Union Fire	925.00		$195,500
	Property, General Assessment	925.00		$80,000
	Railroad	925.00		$3,000
	Special Trips	925.00		$539
	Storage Tank Pollution Liability, WA. State	925.00		$900
041	**Insurance Damages & Other Reimbursable**			**$10,000**
	Direct Payment of Damages and Other Reimbursements	925.00		$10,000
042	**Business Expense and Travel**			**$1,300**
	PURMS (Manager)	921.00		$1,300
043	**Training Expense & Travel**			**$3,600**
	NWPPA / APPA / Rates (Manager/Analyst)	921.00		$1,900
	Training (Analyst/Specialist)	921.00		$1,000
	WPTA (Analyst)	921.00		$400
	WPUDA Finance Officers (Manage/Analyst)	921.00		$300
046	**Treasurer Expenses**			**$501,000**
	Bank Service Fees (Bank of America)	921.00		$25,000
	Credit Card Processor Fees (NISC)	903.00		$410,000
	Fiscal Agent Fees (US Bank)	921.00		$1,500
	Investment Custody Fees (US Bank)	921.00		$3,000
	Line of Credit Fee (Bank of America)	431.00		$40,000
	NISC Banking Fees (Citi Bank First Data/Jack Henry)	903.00		$11,500
	US Payments (Kiosk Transaction/Processing Fees)	903.00		$10,000
061	**Professional Services**			**$32,500**

Department 16 Risk Management & Treasury

Activity	Description	GL/FERC	BU Project	Amount
	Bond Counsel/Financial Advisor	923.00		$8,500
	Fitch Ratings	923.00		$7,500
	Moody's Investors Service	923.00		$1,500
	Retail Rate Design Consultant	916.00		$10,000
	Standard & Poors	923.00		$5,000
072	**Industry Association Assessment**			**$80**
	WPTA	921.00		$80
TOTAL EXPENSE	**Risk Management & Treasury**			**$1,472,775**

Department 17 Contracts & Purchasing

Activity	Description	GL/FERC	BU Project	Amount
033	**Office Supplies & Expenses**			**$11,000**
	Misc Office Supplies	588.00		$1,000
	Paper, Envelopes, Mailing Labels, Letterhead	588.00		$10,000
042	**Business Expense and Travel**			**$1,300**
	Plant Tour (Manager)	588.00		$1,300
043	**Training Expense & Travel**			**$4,500**
	Contracts & Purchasing Training State DES (Manager/Buyer/Coordinator)	921.00		$2,000
	ISM Seminar (Local) (Manager/Buyer)	921.00		$300
	L & I Training (Manager/Buyer/Coordinator)	921.00		$300
	NIGP - Contract Training (Manager)	921.00		$1,900
044	**Other General Expenses**			**$2,565**
	Advertising (A & E Notice, Vendor Notice, Bids, & RFPs)	921.00		$2,000
	Costco Membership	921.00		$165
	Small Works Administrative Fee	921.00		$400
072	**Industry Association Assessment**			**$550**
	ISM Membership Dues (Manager)	588.00		$300
	NIGP Membership Dues (Base Agency Fee) (Manager)	588.00		$190
	NIGP Membership Dues (Buyer)	588.00		$60
TOTAL EXPENSE Contracts & Purchasing				**$19,915**

Department 43 Marketing & Key Accounts

Activity	Description	GL/FERC	BU Project	Amount
011	**All Other District Labor**			**$282,495**
	Labor - Customer Accounting	903.00		$242,946
	Labor - Leave	184.30		$39,549
042	**Business Expense and Travel**			**$1,500**
	Business Travel & Expense	903.00		$1,500
043	**Training Expense & Travel**			**$3,000**
	Staff & Management Training (APPA, NWPPA, MIC)	903.00		$3,000
070	**Civic & Service Organizations**			**$3,645**
	Benton City Chamber of Commerce	903.00		$330
	Prosser Chamber of Commerce	903.00		$315
	Prosser Economic Development Assoc Dues	903.00		$3,000
072	**Industry Association Assessment**			**$4,500**
	Columbia Snake River Irrigators Association Dues	903.00		$4,500
TOTAL EXPENSE Marketing & Key Accounts				**$295,140**

Department 44 Customer Service

Activity	Description	GL/FERC	BU Project	Amount
010	**District Overtime Labor**			**$20,479**
	Labor - Overtime - Customer Accounting	903.00		$20,479
011	**All Other District Labor**			**$990,909**
	Labor - Admin General	920.00		$1,373
	Labor - Customer Accounting	903.00		$850,809
	Labor - Leave	184.30		$138,727
030	**Customer Service Expenditures**			**$566,855**
	Application Processing Fees (Helping Hands/Disabled Disc Programs)	903.00		$9,800
	Armored Car, Kennewick & Prosser Kiosks, Dropbox	903.00		$39,000
	Bill Image Storage Fee	903.00		$5,000
	Cash Vault Services	903.00		$20,255
	Identity Verifications and Adverse Action Letters	903.00		$16,700
	Interpretation Services	903.00		$3,600
	Mail Machine Rental Fee	903.00		$3,500
	NISC - Messenger Letters, Urgent Notices, LL, Autopay, Budget Plan	903.00		$70,000
	NISC - Print & Mail Services (forms,envelopes, data)	903.00		$365,000
	NISC - Special Handle Bill Postage/Online Payments RPPS/Fiserv	903.00		$9,000
	Non-Bill District Postage Costs	903.00		$22,000
	Wireless Telephone Headsets	903.00		$3,000
033	**Office Supplies & Expenses**			**$24,000**
	Misc Office Supplies	903.00		$24,000
039	**Maintenance of Equipment**			**$3,500**
	Postage Meter & Mail Insert Machine Expenses	903.00		$3,500
042	**Business Expense and Travel**			**$7,200**
	CS Week/NWPPA	903.00		$1,500
	NISC MIC	903.00		$4,000
	NISC/WPUDA users Groups	903.00		$1,700
043	**Training Expense & Travel**			**$3,500**
	CSR Training Off Site/QA Program	903.00		$3,500
044	**Other General Expenses**			**$5,000**

Department 44 Customer Service

Activity	Description	GL/FERC	BU Project	Amount
	Other Expenses	903.00		$5,000
045	**Subscriptions & Publications**			**$200**
	Dues and Subscriptions	903.00		$200
061	**Professional Services**			**$5,000**
	Professional Services	903.00		$5,000
119	**Public Information Expenses**			**$2,500**
	Public Info / Communication	903.00		$2,500
200	**New Services Expenses**			**$2,500**
	Demos of New Services	903.00		$2,500
201	**New Product Expenses**			**$3,500**
	Demos of New Products	903.00		$3,500
TOTAL EXPENSE Customer Service				**$1,635,143**

Information Technology / Broadband

Tab 6

PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY
2023 Budget
Summary of Expense by Directorate

Information Technology (IT)

Department(s)		Totals
15	IT Infrastructure	2,656,141
18	IT Applications	2,691,092
Grand Total Expenses	**Information Technology (IT)**	$5,347,233

Directorate Budget by Department and Activity
2023 Budget Compared to 2022 Original Budget

Directorate	Information Technology

Department	Activity	2023 Budget	2022 Original Budget	Increase / (Decrease)	% Increase / (Decrease)
15 - IT Infrastructure	10 - District Overtime Labor	$2,000	$2,000	$0	0.0%
	11 - All Other District Labor	736,841	729,058	7,783	1.1%
	25 - Maintenance of Software	360,050	340,950	19,100	5.6%
	26 - Computer Hardware & Equip Exp	83,500	123,000	(39,500)	(32.1%)
	27 - Personal Computer Software	133,300	128,000	5,300	4.1%
	28 - Personal Computer O&M Costs	151,700	146,700	5,000	3.4%
	29 - Personal Computer Supplies&Exp	9,000	9,000	-	0.0%
	33 - Office Supplies & Expenses	17,000	14,000	3,000	21.4%
	42 - Business Expense & Travel	9,000	18,000	(9,000)	(50.0%)
	43 - Training Expense & Travel	19,500	19,500	-	0.0%
	45 - Subscriptions & Publications	250	250	-	0.0%
	50 - Telephone & Answering Services	151,500	146,500	5,000	3.4%
	61 - Professional Services	107,500	110,000	(2,500)	(2.3%)
	137 - Capitalized Computer Software	25,000	55,000	(30,000)	(54.5%)
	138 - Computer Equipment	850,000	720,000	130,000	18.1%
15 - IT Infrastructure Total		**2,656,141**	**2,561,958**	**94,183**	**3.7%**
18 - IT Applications	11 - All Other District Labor	1,288,973	1,160,781	128,192	11.0%
	17 - Operation & Maintenance Exp	73,900	68,400	5,500	8.0%
	25 - Maintenance of Software	793,369	920,099	(126,730)	(13.8%)
	26 - Computer Hardware & Equip Exp	17,500	17,500	-	0.0%
	27 - Personal Computer Software	7,300	10,000	(2,700)	(27.0%)
	33 - Office Supplies & Expenses	1,500	1,500	-	0.0%
	42 - Business Expense & Travel	28,000	27,500	500	1.8%
	43 - Training Expense & Travel	12,500	14,225	(1,725)	(12.1%)
	45 - Subscriptions & Publications	250	250	-	0.0%
	61 - Professional Services	311,000	576,350	(265,350)	(46.0%)
	72 - Industry Assoc Assessments	8,000	8,000	-	0.0%
	137 - Capitalized Computer Software	148,800	440,000	(291,200)	(66.2%)
18 - IT Applications Total		**2,691,092**	**3,244,605**	**(553,513)**	**(17.1%)**
Grand Total		**$5,347,233**	**$5,806,563**	**($459,330)**	**(7.9%)**

Department 15 IT Infrastructure

Activity	Description	GL/FERC	BU Project	Amount
010	**District Overtime Labor**			**$2,000**
	Labor - Overtime - Admin General	920.00		$2,000
011	**All Other District Labor**			**$736,841**
	Enterprise Security System	391.00	222	$5,000
	Fiber to H2F2 Reservior Sub	380.00	202	$500
	Labor - Admin General	920.00		$439,728
	Labor - Customer Accounting	903.00		$62,818
	Labor - Distribution	588.00		$125,637
	Labor - Leave	184.30		$103,158
025	**Maintenance of Software**			**$360,050**
	1Password	921.00		$5,200
	Accellion (FTP Software)	921.00		$8,600
	Acronis (Desktop/Server Imaging)	921.00		$2,300
	Archive Social	921.00		$3,000
	Azure ID Badging Software	921.00		$1,000
	Brava Reader	921.00		$500
	Cyber Security Training	921.00		$2,000
	Fax Server	921.00		$1,300
	FortiSiem	921.00		$17,500
	FoxIT	921.00		$5,500
	Manager Engine	921.00		$8,000
	Microcall (Phone Call Logging)	921.00		$1,200
	Microsoft System Center	921.00		$10,000
	Mobile Device Management	921.00		$5,000
	Nessus (Network Analysis)	921.00		$26,500
	NetScaler	921.00		$10,000
	OATI Certificate	921.00		$1,100
	OEL for Existing	921.00		$5,000
	Phone Q/A Software	903.00		$3,500
	Power Broker (Desktop Security)	921.00		$1,650
	Room Tech Monitoring	921.00		$500
	RSA (Network Authentication)	921.00		$3,500
	Secret Server	921.00		$2,200
	SmartNet (Ironport, Firepower)	921.00		$36,500
	SmartNet (Phone)	921.00		$22,500

Department 15 IT Infrastructure

Activity	Description	GL/FERC	BU Project	Amount
	Solar Winds (Network Monitoring)	921.00		$26,500
	Solar Winds (Storage, VM)	921.00		$7,500
	SpecOPS Password Enforcer	921.00		$2,500
	Storage System maint/support	921.00		$37,500
	Third Tier Backup Software (Veeam)	921.00		$32,000
	Trackit (Help Desk Ticket Tracker)	921.00		$6,700
	VMWare (Server Virtualization)	921.00		$45,000
	VMWare (VDI)	921.00		$16,500
	Wallboard	903.00		$1,800
026	**Computer Hardware & Equip Exp**			**$83,500**
	Commission Technology	921.00		$1,500
	General PC needs (HD, Mouse, DVD Burner, Cables, etc)	921.00		$10,000
	Printers for Labels @ Desktops	588.00		$1,500
	Replacement Desktop (8)	921.00		$30,000
	Replacement Laptops (3)	921.00		$12,500
	Replacement laptops (autoshop)	588.00		$7,500
	Replacement Monitors (20)	921.00		$6,000
	Replacement projectors - (Conference Room)	921.00		$3,000
	Standard Printer	588.00		$3,000
	Tablets - iPads (60)	588.00		$5,000
	Zero Clients (10)	921.00		$3,500
027	**Personal Computer Software**			**$133,300**
	Affiliations	921.00		$300
	Barco Datawell Support	588.00		$10,000
	Misc Upgrades and Software	921.00		$6,000
	MSDN (Support Specialist (2), System Administrator)	921.00		$2,000
	Office 365	921.00		$115,000
028	**Personal Computer O&M Costs**			**$151,700**
	Cisco SmartNets	921.00		$105,000
	MFP Maintenance - Engineering	588.00		$9,000
	MFP Maintenance - Executive	921.00		$1,500
	MFP Maintenance - Finance/CS	921.00		$10,000
	MFP Maintenance - Operations	588.00		$7,000
	MFP Maintenance - Power Mgmt	921.00		$5,000
	MFP Maintenance - Prosser	921.00		$1,000

Department 15 IT Infrastructure

Activity	Description	GL/FERC	BU Project	Amount
	Printer Maintenance - Engineering	588.00		$2,200
	Printer Maintenance - Executive	921.00		$500
	Printer Maintenance - Finance/CS	921.00		$500
	Printer Maintenance - IT	921.00		$2,500
	Printer Maintenance - Operations	588.00		$2,000
	Printer Maintenance - Power Mgmt	921.00		$500
	Printer Maintenance - Prosser	921.00		$1,000
	Records Scanner	921.00		$1,000
	UPS Maintenance	921.00		$3,000
029	**Personal Computer Supplies & Expenses**			**$9,000**
	Engineering	588.00		$3,000
	Executive	921.00		$1,000
	Finance/CS	921.00		$650
	IT	921.00		$250
	Operations	588.00		$3,500
	Power Mgmt	921.00		$300
	Prosser	921.00		$300
033	**Office Supplies & Expenses**			**$17,000**
	Cisco Phones	921.00		$15,000
	CyberSecurity Materials	921.00		$2,000
042	**Business Expense and Travel**			**$9,000**
	IT Management/Strategic Planing (Manager)	921.00		$2,000
	SAN/VMWare Conference (Administrator)	921.00		$2,500
	Security Conference (Network Engineer)	921.00		$2,000
	TechMentor (Support Specialist)	921.00		$2,500
043	**Training Expense & Travel**			**$19,500**
	IT Management Training (Supervisor)	921.00		$2,500
	Microsoft (Support Specialist)	921.00		$2,500
	Security/Network Training (Network Engineer)	921.00		$7,500
	Storage/VMWare Training (System Administrator)	921.00		$7,000
045	**Subscriptions & Publications**			**$250**
	Subscription & Publications	921.00		$250

Department 15 IT Infrastructure

Activity	Description	GL/FERC	BU Project	Amount
050	**Telephone & Answering Services**			**$151,500**
	Aircards - Operations (Cradlepoint)	588.00		$11,500
	Aircards (iPads)	588.00		$6,000
	AVL - Operations - 85	588.00		$23,000
	Charter (Internet Service)	921.00		$2,000
	Frontier (includes all Non-Wireless Services)	921.00		$33,500
	Local Cloud Call Prompter	921.00		$50,000
	Verizon Wireless	921.00		$25,500
061	**Professional Services**			**$107,500**
	Consulting for External Network Audit	921.00		$25,000
	Datacenter redesign	391.00	269	$20,000
	Exchange Support	921.00		$5,000
	Infrastructure Support	921.00		$10,000
	Phone System Support	921.00		$10,000
	Phone System Upgrade	391.00	394	$30,000
	Storage Replacment Consulting	921.00		$7,500
137	**Capitalized Computer Software**			**$25,000**
	Windows Datacenter Licenses	391.00	38	$25,000
138	**Computer Equipment**			**$850,000**
	Cisco Blade Server	391.00	44	$175,000
	Enterprise Security System	391.00	222	$250,000
	Multi-Function Printer	391.00	302	$15,000
	Network Switch purchase	391.00	33	$40,000
	Phone System Upgrade	391.00	394	$50,000
	Storage Area Network (SAN) Upgrade	391.00	267	$300,000
	Video Conference Room Upgrades	391.00	24	$20,000
TOTAL EXPENSE IT Infrastructure				**$2,656,141**

Department 18 IT Applications

Activity	Description	GL/FERC	BU Project	Amount
011	**All Other District Labor**			**$1,288,973**
	Doble Test Assistant License & Implementation	391.00	383	$8,000
	Enterprise Security System	391.00	222	$10,000
	iVUE Enhancements	391.00	31	$10,000
	Labor - Admin General	920.00		$480,583
	Labor - Broadband	935.20		$5,973
	Labor - Customer Accounting	903.00		$224,296
	Labor - Distribution	588.00		$343,764
	Labor - Leave	184.30		$180,456
	Labor - Transmission	566.00		$3,981
	NoaNET NCS and District Labor	397.20	22	$15,600
	Survalent ICCP Software Plug-In	391.00	408	$4,320
	WindMil Upgrade	391.00	268	$2,000
017	**Operation & Maintenance Expense**			**$73,900**
	Benton County Aerial Imagery (Orthophotos)	588.00		$6,000
	Benton County Plat Imagery	588.00		$900
	Sensus Flexnet Meter Reading Fee	902.00		$67,000
025	**Maintenance of Software**			**$793,369**
	Adobe Creative Cloud	921.00		$1,010
	Alden	588.00		$4,048
	AutoCAD Network License	588.00		$4,400
	Cascade (Asset Management)	588.00		$22,500
	CrisisGo	921.00		$3,000
	DevArt SQL Complete (2)	921.00		$600
	Doble Software Maintenance	588.00		$3,800
	DocuSign	921.00		$3,350
	Erwin	921.00		$2,500
	ESRI (GIS)	588.00		$27,200
	Foglight	920.00		$27,000
	Google Translate Servcie (Website)	921.00		$1,000
	Hoodsuite	921.00		$640
	IKE GPS Software Services	588.00		$5,681
	Kapish EasyLink	921.00		$900
	Kentico License (Website)	921.00		$1,350
	MilSoft (Analysis)	588.00		$12,600

Department 18 IT Applications

Activity	Description	GL/FERC	BU Project	Amount
	NeoGov	921.00		$35,500
	NISC Monthly Recurring Costs	921.00		$371,000
	Osmose Ocalc Licenses (8)	588.00		$3,300
	PI Historian Annual Maintenance	588.00		$12,100
	PowerWorld Transmission Software	588.00		$3,990
	Reporting Workflow Software (Tableau?)	921.00		$2,000
	Sag10	588.00		$1,300
	SEL DMA	588.00		$3,375
	Sensus Alarm Manager	902.00		$7,000
	Sensus RNI	902.00		$92,000
	SentryOne Annual Maintenance (SSIS)	921.00		$3,500
	SQL Server SA	921.00		$20,000
	SSIS Additional Add-on's (CozyRoc)	921.00		$2,000
	Survalent (SCADA)	592.30		$28,750
	Tableau Business Intelligence Software	921.00		$38,000
	Toad Data Point	921.00		$2,200
	Toad for Oracle Base Edition (3 perpetual)	921.00		$850
	Toad for SQL Server Professional Edition (3)	921.00		$750
	Toad for SQL Server Xpert Edition (1)	921.00		$600
	TRIM	921.00		$29,000
	Vehicle Management System Maintenance	588.00		$6,200
	Watt-Net Express	588.00		$1,500
	Website Hosting Fees	921.00		$6,875
026	**Computer Hardware & Equip Exp**			**$17,500**
	Kiosks (2) - Lease Kennewick & Prosser	903.00		$17,500
027	**Personal Computer Software**			**$7,300**
	Misc Upgrades and Software	921.00		$2,500
	MSDN Licenses (4)	921.00		$4,800
033	**Office Supplies & Expenses**			**$1,500**
	Misc Office Supplies	921.00		$1,500
042	**Business Expense and Travel**			**$28,000**
	Business Intelligence Conference	921.00		$6,000
	Data Integration & DBA Conferences	921.00		$6,000
	IT Management/Strategic Planning (Director)	921.00		$3,000

Department 18 IT Applications

Activity	Description	GL/FERC	BU Project	Amount
	IT Mgmt/Strategic Planning (Manager)	921.00		$2,500
	NISC User Group (Analyst)	921.00		$7,500
	Sensus User Conference (1)	902.00		$3,000
043	**Training Expense & Travel**			**$12,500**
	Business Intelligence and Database Training	921.00		$10,000
	CBT Nuggets Training (Annual Subscription)	921.00		$2,500
045	**Subscriptions & Publications**			**$250**
	Subscription & Publications	921.00		$250
061	**Professional Services**			**$311,000**
	AMI Enhanced Support	902.00		$42,000
	BI Consulting	921.00		$15,000
	Doble Test Assistant License & Implementation	391.00	383	$35,000
	Intranet Redesign Study	921.00		$10,000
	iVUE Enhancements	391.00	31	$102,000
	NISC Programming (Expense)	921.00		$5,000
	TRIM Maintenance/Consulting	921.00		$24,000
	Website Annual Upgrades & Misc Programming	921.00		$10,000
	Website Redesign	921.00		$50,000
	Website Support & Maintenance	921.00		$18,000
072	**Industry Association Assessment**			**$8,000**
	Utility Analytics Membership	921.00		$8,000
137	**Capitalized Computer Software**			**$148,800**
	Doble Test Assistant License & Implementation	391.00	383	$11,800
	Enterprise Security System	391.00	222	$100,000
	Survalent ICCP Software Plug-In	391.00	408	$37,000
TOTAL EXPENSE IT Applications				**$2,691,092**

PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY
2023 Budget
Summary of Expense by Directorate

Broadband

Department(s)		Totals
46	Broadband	2,876,641
Grand Total Expenses	**Broadband**	$2,876,641

Directorate Budget by Department and Activity
2023 Budget Compared to 2022 Original Budget

Directorate	Broadband

Department	Activity	2023 Budget	2022 Original Budget	Increase / (Decrease)	% Increase / (Decrease)
46 - Broadband	12 - Materials & Supplies	$425,550	$495,550	($70,000)	(14.1%)
	17 - Operation & Maintenance Exp	57,900	46,500	11,400	24.5%
	18 - Misc Construction Expense	20,000	20,000	-	0.0%
	20 - Off-the-Dock Labor	1,005,950	942,950	63,000	6.7%
	28 - Personal Computer O&M Costs	65,000	59,000	6,000	10.2%
	38 - Maint of Bldg & Improvements	2,500	3,500	(1,000)	(28.6%)
	40 - Rents	178,408	157,766	20,642	13.1%
	44 - Other General Expenses	996,333	1,057,754	(61,421)	(5.8%)
	136 - Communication Equipment	125,000	200,000	(75,000)	(37.5%)
46 - Broadband Total		**2,876,641**	**2,983,020**	**(106,379)**	**(3.6%)**
Grand Total		**$2,876,641**	**$2,983,020**	**($106,379)**	**(3.6%)**

Department 46 Broadband

Activity	Description	GL/FERC	BU Project	Amount
012	**Materials & Supplies**			**$425,550**
	Advanced Wireless/Small Cell	397.30	214	$202,050
	Fiber Backbone & Laterals	397.30	134	$30,000
	Fiber Backbone to Carma	380.00	144	$30,000
	Fiber Conduit	397.20	19	$6,000
	Fiber Customer Connects - LEC	397.20	135	$127,500
	System Improvement Projects	397.20	349	$30,000
017	**Operation & Maintenance Expense**			**$57,900**
	21-46-01 NCS - Fiber Replacement and Restoration	935.30		$50,400
	Fiber Reel Testing	935.20		$7,500
018	**Miscellaneous Construction Expense**			**$20,000**
	Franchise BB Facility Relocations	397.30	252	$20,000
020	**Off-the-Dock Labor**			**$1,005,950**
	Advanced Wireless/Small Cell	397.30	214	$464,450
	Fiber Backbone & Laterals	397.30	134	$70,000
	Fiber Backbone to Carma	380.00	144	$70,000
	Fiber Conduit	397.20	19	$14,000
	Fiber Customer Connects - LEC	397.20	135	$297,500
	Joint Use Audit Corrective Actions	935.30		$20,000
	System Improvement Projects	397.20	349	$70,000
028	**Personal Computer O&M Costs**			**$65,000**
	Curvature Cisco Equipment Maintenance	935.20		$25,000
	Nokia - MPLS Equipment M&S	935.20		$40,000
038	**Maint of Bldg & Improvements - General**			**$2,500**
	Maintenance Expense (Nodes and Building)	935.20		$2,500
040	**Rents**			**$178,408**
	10-46-07 Energy NW - (2) Dark Fiber-Ashe Facility to POS, Line #1	935.20		$5,040
	10-46-12 Verizon Colocation Space and DC Power	935.20		$17,520
	19-46-03 COR - Dark Fiber Lease - RSD	935.20		$1,620
	19-46-04 COR - Dark Fiber Lease - MSA	935.20		$1,620
	19-46-05 COR - Dark Fiber Lease - WalMart Duportail	935.20		$1,620

Department 46 Broadband

Activity	Description	GL/FERC	BU Project	Amount
	19-46-06 COR - Dark Fiber Lease - BIPIN	935.20		$3,240
	19-46-10 COR - Dark Fiber Lease - MSA	935.20		$1,620
	19-46-11 COR - Dark Fiber Lease - Umpqua Bank	935.20		$1,620
	20-46-02 COR - Dark Fiber Lease - T-Mobile	935.20		$1,620
	20-46-03 COR - Dark Fiber Lease - Parsec Computers	935.20		$1,620
	20-46-04 COR - Dark Fiber Lease - Fowler St	935.20		$1,620
	20-46-05 BPA - License Agreement (CRC,#19TX-16737)	935.20		$12,225
	20-46-06 COR - Dark Fiber Lease - Richland Public Library	935.20		$1
	20-46-10 COR - DFL - Bellerive, Steptoe	935.20		$3,240
	20-46-11 COR - Fiber Lease - 4 Towers (13-46-02)	935.20		$12,960
	20-46-12 COR - DFL - Jericho, Keene	935.20		$3,240
	20-46-13 COR - Fiber Lease - Fowler St	935.20		$1,620
	20-46-14 COR - Fiber Lease - LW Campus	935.20		$3,240
	20-46-15 COR - DFL - Stevens, Mansfield	935.20		$1,620
	20-46-16 COR - Fiber Lease - GWW & Knight St.	935.20		$3,240
	20-46-17 COR - Dark Fiber Lease	935.20		$6,480
	20-46-18 COR - Fiber Lease - 5 Towers	935.20		$16,200
	20-46-19 COR - Fiber Lease - Williams Blvd	935.20		$3,240
	20-46-20 COR - Dark Fiber Lease - MSA Steptoe/Knight	935.20		$1,620
	20-46-23 COR - Dark Fiber Lease - Utility Trailer Sales	935.20		$1,620
	21-46-03 COR - Dark Fiber Lease - Community First Bank	935.20		$3,240
	21-46-04 - FPUD Dark Fiber Lease	935.20		$15,480
	21-46-05 COR - Dark Fiber Lease - Inline Computers	935.20		$3,240
	21-46-06 COR - Dark Fiber Lease - Tmobile Jericho Rd	935.20		$1,620
	21-46-07 COR - Fiber Lease - Duportail St	935.20		$1,620
	21-46-08 COR - DFL - 651 Truman (was 18-46-06)	935.20		$1,620
	21-46-10 COR - DFL - T-Mobile, 514 Warehous St	935.20		$1,620
	21-46-11 Spectrum - DFL - W Richland PD	935.20		$12,000
	22-46-01 FPUD - BB Services Agreement	935.20		$1,800
	22-46-02 COR - Dark Fiber Lease - Columbia REA (was 19-46-07)	935.20		$1,620
	22-46-03 COR - Dark Fiber Lease - Preferred Freezer (was 19-46-08)	935.20		$1,620
	BPA Dark Fiber Lease (BPA 01TX-10704/BPUD #01-41-05)	935.20		$4,000
	Permits (2) with Tri-City Railroad	935.20		$1,000
	Pole Contact Fees (COR, FPUD, LSN, & BREA)	935.20		$18,622
044	**Other General Expenses**			**$996,333**
	10-46-13 NoaNet - Internet Access via Franklin POP ($1,260 x 12 plus bursting @ $3.6 per	935.20		$25,000
	14-46-02 NoaNET - CALEA Hosted Services (closed out)	935.20		$0

Department 46 Broadband

Activity	Description	GL/FERC	BU Project	Amount
	21-46-01 NCS; NoaNet Labor Allocation to O&M	935.20		$775,306
	Franklin PUD Recurring Transport Charges	935.20		$2,200
	NoaNET NCS and District Labor	397.20	22	$193,827
136	**Communication Equipment**			**$125,000**
	Backbone System Electronics	397.40	133	$75,000
	Premise Electronics	397.25	136	$50,000
TOTAL EXPENSE Broadband				**$2,876,641**

Engineering

Tab 6

PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY
2023 Budget
Summary of Expense by Directorate

Engineering

Department(s)		Totals
21	Engineering	19,926,700
22	Customer Engineering	1,289,666
Grand Total Expenses	**Engineering**	$21,216,366

Directorate Budget by Department and Activity
2023 Budget Compared to 2022 Original Budget

Directorate	Engineering

Department	Activity	2023 Budget	2022 Original Budget	Increase / (Decrease)	% Increase / (Decrease)
21 - Engineering	11 - All Other District Labor	$775,906	$704,467	$71,439	10.1%
	12 - Materials & Supplies	4,396,241	6,494,124	(2,097,883)	(32.3%)
	18 - Misc Construction Expense	157,994	190,660	(32,666)	(17.1%)
	20 - Off-the-Dock Labor	160,180	2,500	157,680	6307.2%
	21 - Elec Construction Contracts	9,747,981	5,307,448	4,440,533	83.7%
	33 - Office Supplies & Expenses	4,000	4,000	-	0.0%
	42 - Business Expense & Travel	1,000	1,000	-	0.0%
	43 - Training Expense & Travel	10,500	10,400	100	1.0%
	45 - Subscriptions & Publications	2,500	2,500	-	0.0%
	61 - Professional Services	397,500	325,602	71,898	22.1%
	72 - Industry Assoc Assessments	15,154	10,154	5,000	49.2%
	120 - Substation Xfrs & Regulators	627,527	345,000	282,527	81.9%
	121 - Substation Equip & Materials	1,556,784	1,195,511	361,272	30.2%
	122 - Line Devices	444,387	379,600	64,787	17.1%
	123 - Transformers & Related Items	1,500,000	1,500,000	-	0.0%
	125 - Land & Land Rights - Electric	66,667	-	66,667	N/A
	127 - SCADA Communications Equipment	36,250	33,059	3,191	9.7%
	128 - SCADA Substation Equipment	25,130	26,739	(1,609)	(6.0%)
	132 - Office Equipment	1,000	1,000	-	0.0%
21 - Engineering Total		**19,926,700**	**16,533,765**	**3,392,935**	**20.5%**
22 - Customer Engineering	10 - District Overtime Labor	25,750	25,000	750	3.0%
	11 - All Other District Labor	831,708	726,265	105,443	14.5%
	14 - Small Tools & Materials	1,250	850	400	47.1%
	17 - Operation & Maintenance Exp	3,600	3,600	-	0.0%
	18 - Misc Construction Expense	16,457	16,457	-	0.0%
	29 - Personal Computer Supplies&Exp	3,000	1,500	1,500	100.0%
	33 - Office Supplies & Expenses	2,000	1,000	1,000	100.0%
	40 - Rents	25,000	15,000	10,000	66.7%
	42 - Business Expense & Travel	11,600	5,900	5,700	96.6%
	43 - Training Expense & Travel	23,800	17,800	6,000	33.7%
	61 - Professional Services	190,000	175,000	15,000	8.6%
	125 - Land & Land Rights - Electric	72,500	27,500	45,000	163.6%
	132 - Office Equipment	2,000	1,000	1,000	100.0%
	134 - Tools, Shop & Stores Equipment	81,000	5,600	75,400	1346.4%
22 - Customer Engineering Total		**1,289,666**	**1,022,472**	**267,193**	**26.1%**
Grand Total		**$21,216,366**	**$17,556,237**	**$3,660,129**	**20.8%**

Department 21 Engineering

Activity	Description	GL/FERC	BU Project	Amount
011	**All Other District Labor**			**$775,906**
	Angus Bay #3 Feeder Breaker & Relay Replacement	362.01	402	$17,311
	Fiber to H2F2 Reservior Sub	380.00	202	$3,530
	Highlands Sub SCADA Upgrades	380.00	202	$4,500
	Labor - Admin General	920.00		$2,480
	Labor - Broadband	935.20		$25,323
	Labor - Customer Accounting	903.00		$4,178
	Labor - Distribution	588.00		$486,131
	Labor - Leave	184.30		$108,627
	Labor - Transmission	566.00		$47,536
	McNary POD	355.00	300	$3,750
	Prosser Bay #2 Voltage Reg Replacement	362.01	373	$3,742
	Repair & Replacement - Cable	367.00	147	$2,400
	Services, Set Xfmrs, Run Secondary	369.10	94	$4,988
	Spaw Phillips 115kV Breaker	355.00	334	$8,000
	Switch Upgrade/Additions	355.00	137	$17,910
	Transmission Line-Sunset Rd to Dallas Rd	355.00	77	$3,750
	Vista Bay #1 Metalclad Switchgear Replacement	362.01	375	$27,250
	Vista Substation Scada Ugrades	380.00	202	$4,500
012	**Materials & Supplies**			**$4,396,241**
	Angus Bay #3 Feeder Breaker & Relay Replacement	362.01	402	$123,503
	Dist Base Growth	366.00	140	$1,047,354
	Dist Base Growth	365.00	140	$707,161
	Dist System Improvements	366.00	141	$165,488
	Distribution Line Equipment SCADA	380.00	143	$20,000
	Distribution Pole Replacement	364.00	160	$5,136
	Distribution-Inventory Issued for O&M	588.00		$100,000
	Fiber Backbone to Carma	380.00	144	$57,973
	Fiber to H2F2 Reservior Sub	380.00	202	$10,676
	Fiber to Substations & Line Devices	380.00	144	$25,000
	Highlands Sub SCADA Upgrades	380.00	202	$2,500
	JU - NESC Compliance Program	365.00	145	$95,000
	McNary POD	355.00	300	$275,040
	Poles & Fixtures, Misc Repairs	355.00	75	$100,000
	POS#11 - GUM - 4, HED-3, recond. 3/0, Bowles Rd.	365.00	331	$112,000
	POS#12 - GUM - 4 Reconductor #4 ACSR, Oak St.	365.00	362	$125,000

Department 21 Engineering

Activity	Description	GL/FERC	BU Project	Amount
	POS#13 - GUM - 4 Reconductor #4 ACSR, Game Farm Rd.	364.00	369	$134,492
	POS#36A - SSR - 3 Reconducctor (DNR Land) WEST	365.00	395	$80,333
	POS#58 - BEC - 3 New feeder to east to tie with SSR-1	365.00	205	$397,333
	Prosser Bay #2 Voltage Reg Replacement	362.01	373	$2,588
	Repair & Replacement - Cable	367.00	147	$215,000
	Repair & Replacement - Other	367.00	92	$106,000
	Repair & Replacement - Other	365.00	92	$159,000
	Service Poles	365.00	93	$30,000
	Services, Set Xfmrs, Run Secondary	369.10	94	$107,507
	Services, Set Xfmrs, Run Secondary	369.20	94	$107,507
	Spaw Phillips 115kV Breaker	355.00	334	$20,000
	Switch Upgrade/Additions	355.00	137	$10,000
	Vista Bay #1 Metalclad Switchgear Replacement	362.01	375	$48,400
	Vista Substation Scada Ugrades	380.00	202	$6,250
018	**Miscellaneous Construction Expense**			**$157,994**
	Distribution Pole Replacement	364.00	160	$2,660
	Hedges 115kV Metering Point	355.00	169	$30,000
	Prosser Bay #2 Voltage Reg Replacement	362.01	373	$22,000
	Transmission Line-Phillips to Spaw	355.00	212	$83,334
	Transmission Line-Sunset Rd to Dallas Rd	355.00	77	$20,000
020	**Off-the-Dock Labor**			**$160,180**
	Fiber Backbone to Carma	380.00	144	$135,271
	Fiber to H2F2 Reservior Sub	380.00	202	$24,910
021	**Electric Construction Contracts**			**$9,747,981**
	Dock Crew Joint Use Deficiency Corrections	590.10		$1,035,609
	Hedges 115kV Metering Point	355.00	169	$23,020
	McNary POD	355.00	300	$50,000
	POS#11 - GUM-4, HED-3, recond. 3/0, Bowles Rd.	365.00	331	$66,667
	POS#36A - SSR-3 Reconducctor (DNR Land) WEST	365.00	395	$40,000
	POS#58 - BEC-3, new feeder to east to tie with SSR-1	365.00	205	$400,000
	Repair & Replacement - Cable	367.00	147	$1,140,108
	Spaw Phillips 115kV Breaker	355.00	334	$250,000
	Transmission Line-Phillips to Spaw	355.00	212	$5,242,577
	Transmission Line-Sunset Rd to Dallas Rd	355.00	77	$1,500,000

Department 21 Engineering

Activity	Description	GL/FERC	BU Project	Amount
033	**Office Supplies & Expenses**			**$4,000**
	Misc Office Supplies	588.00		$4,000
042	**Business Expense and Travel**			**$1,000**
	Cascade Users Conference (Senior Engineer)	588.00		$1,000
043	**Training Expense & Travel**			**$10,500**
	Technical Training (Assistant)	588.00		$1,000
	Technical Training (Manager)	588.00		$1,900
	Technical Training (Engineer)	588.00		$1,900
	Technical Training (Engineer)	557.00		$1,900
	Technical Training (Senior Engineer)	588.00		$1,900
	Technical Training (Senior Engineer)	588.00		$1,900
045	**Subscriptions & Publications**			**$2,500**
	Subscription & Publications (IEEE, ANSI stds, etc.)	588.00		$2,500
061	**Professional Services**			**$397,500**
	Distribution - Joint Use Pole Contact Consulting	590.10		$47,000
	Distribution - Unanticipated Consulting Engineering Support	588.00		$25,000
	Hedges 115kV Metering Point	355.00	169	$5,000
	McNary POD	355.00	300	$15,500
	NERC/WECC Consulting - GDS #10-51-06	560.01		$30,000
	SCADA Communications Network Study	380.00	333	$150,000
	Transmission Line-Sunset Rd to Dallas Rd	355.00	77	$125,000
072	**Industry Association Assessment**			**$15,154**
	IEEE Membership (Manager/Senior Engineer/Engineer (5)	588.00		$1,200
	Miscellaneous	588.00		$100
	Notary Renewals	588.00		$250
	PE Licenses & Renewals (3) $201 every 2 yrs ea	588.00		$604
	Smart Electric Power Alliance (SEPA)	588.00		$5,000
	WSU Power Engineering Program	588.00		$8,000
120	**Substation Transformers & Regulators**			**$627,527**
	Prosser Bay #2 Voltage Reg Replacement	362.01	373	$627,527

Department 21 Engineering

Activity	Description	GL/FERC	BU Project	Amount
121	**Substation Equipment & Materials**			**$1,556,784**
	Angus Bay #3 Feeder Breaker & Relay Replacement	362.01	402	$9,054
	Fire Mitigation - OH Line Reconstruction	365.00	312	$250,000
	Hedges 115kV Metering Point	355.00	169	$100,000
	Prosser Bay #2 Voltage Reg Replacement	362.01	373	$12,075
	Spaw Phillips 115kV Breaker	355.00	334	$245,000
	Substation Inventory Issued for O&M	592.00		$100,000
	Substation Misc. Aux Equip, Relays/Controls	362.01	148	$25,000
	Vista Bay #1 Metalclad Switchgear Replacement	362.01	375	$815,655
122	**Line Devices**			**$444,387**
	Distribution - Inventory Issued for O&M	595.00		$100,000
	Distribution Regulators	368.20	323	$75,000
	McNary POD	355.00	300	$40,000
	POS#12 - GUM - 4 Reconductor #4 ACSR, Oak St.	365.00	362	$80,000
	POS#36A - SSR - 3 Reconducctor (DNR Land) WEST	365.00	395	$9,387
	Switch Upgrade/Additions	355.00	137	$40,000
	Transmission Line-Sunset Rd to Dallas Rd	355.00	77	$100,000
123	**Transformers & Related Items**			**$1,500,000**
	Services, Set Xfmrs, Run Secondary	368.10	94	$1,500,000
125	**Land & Land Rights - Electric**			**$66,667**
	Fiber Backbone to Carma	380.00	144	$16,667
	Transmission Line-Sunset Rd to Dallas Rd	355.00	77	$50,000
127	**SCADA Communications Equipment**			**$36,250**
	Fiber to H2F2 Reservior Sub	380.00	202	$6,250
	Hedges 115kV Metering Point	355.00	169	$30,000
128	**SCADA Substation Equipment**			**$25,130**
	Fiber to H2F2 Reservior Sub	380.00	202	$9,375
	Highlands Sub SCADA Upgrades	380.00	202	$7,002
	Vista Substation Scada Upgrades	380.00	202	$8,753
132	**Office Equipment**			**$1,000**
	Miscellaneous Office Furniture	588.00		$1,000

Department 21 Engineering

Activity	Description	GL/FERC	BU Project	Amount
TOTAL EXPENSE	**Engineering**			**$19,926,700**

Department 22 Customer Engineering

Activity	Description	GL/FERC	BU Project	Amount
010	**District Overtime Labor**			**$25,750**
	Labor - Overtime - Distribution	588.00		$25,750
011	**All Other District Labor**			**$831,708**
	Dist Base Growth	365.00	140	$97,402
	Dist Base Growth	366.00	140	$103,544
	Dist System Improvements	365.00	141	$150,000
	Dist System Improvements	366.00	141	$150,000
	Distribution Pole Replacement	364.00	160	$1,536
	Fiber Backbone to Carma	380.00	144	$4,699
	Labor - Customer Accounting	903.00		$1,913
	Labor - Distribution	588.00		$71,917
	Labor - Leave	184.30		$116,439
	POS#11 - GUM - 4, HED-3, recond. 3/0, Bowles Rd.	365.00	331	$1,667
	POS#12 - GUM - 4 Reconductor #4 ACSR, Oak St.	365.00	362	$4,000
	POS#13 - GUM - 4 Reconductor #4 ACSR, Game Farm Rd.	365.00	369	$760
	POS#58 - BEC - 3 New feeder to east to tie with SSR-1	365.00	205	$4,500
	Repair & Replacement - Cable	367.00	147	$51,747
	Services, Set Xfmrs, Run Secondary	369.10	94	$71,585
014	**Small Tools & Materials**			**$1,250**
	GPS Batteries - Replacement/Purchase	588.00		$400
	GPS Cables - Replacement/Purchase	588.00		$400
	Training/Instructional Manuals & Publications	588.00		$450
017	**Operation & Maintenance Expense**			**$3,600**
	Equipment Maintenance/Repair	588.00		$500
	Miscellaneous Form Printing	588.00		$500
	O&M Related Permit Fees	588.00		$500
	Scanning Services	588.00		$1,000
	Unplanned O&M Expenses	588.00		$500
	WA State Ref. Network - Annual Maint. for VRS Net (GPS Signals)	588.00		$600
018	**Miscellaneous Construction Expense**			**$16,457**
	Dist Base Growth	361.00	140	$16,457
029	**Personal Computer Supplies & Expenses**			**$3,000**

Department 22 Customer Engineering

Activity	Description	GL/FERC	BU Project	Amount
	Printer / Plotter Paper	588.00		$3,000
033	**Office Supplies & Expenses**			**$2,000**
	Labeling / Binding Supplies	588.00		$2,000
040	**Rents**			**$25,000**
	Maintenance Crossing Permits (Railroad, DOT, etc)	588.00		$20,000
	Pole Contact Fee (us on their poles)	588.00		$5,000
042	**Business Expense and Travel**			**$11,600**
	Design Software User Group (Distribution Design Technician)	588.00		$6,000
	NISC MIC Conference (Supervisor)	588.00		$2,600
	NWPPA E&O (Supervisor/ Distribution Designer)	588.00		$3,000
043	**Training Expense & Travel**			**$23,800**
	NESC Code Update or Other Advanced Tech Training (3) (Distribution Designer)	588.00		$5,000
	NWPPA Staking Certification Courses (2) (Technician)	588.00		$9,000
	Technical Training (3) (Engineering Technician)	588.00		$3,000
	Technical Training (Distribution Designer)	588.00		$1,000
	Technical Training Class (Distribution Designer)	588.00		$2,000
	Training Admin Staff (2) (Assistant)	588.00		$3,800
061	**Professional Services**			**$190,000**
	JU-NESC Consultant for Field Work	590.10		$60,000
	JU-NESC Consultant for Work Order Prep	590.10		$120,000
	Surveying for O&M Support	588.00		$10,000
125	**Land & Land Rights - Electric**			**$72,500**
	County Recording Fees - Easements	360.10	140	$30,000
	New Permits (Crossing, Etc.)	360.10	140	$40,000
	Title Reports for Construction Projects	360.10	140	$2,500
132	**Office Equipment**			**$2,000**
	Office Furniture	588.00		$2,000
134	**Tools, Shop & Stores Equipment**			**$81,000**
	GPS, Staking or Other Related Tools and Equipment	588.00		$80,000
	Survey Supplies (Stakes, Flags, etc)	588.00		$1,000

Department 22 Customer Engineering

Activity	Description	GL/FERC	BU Project	Amount
TOTAL EXPENSE	**Customer Engineering**			**$1,289,666**

Power Management

Tab 6

PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY
2023 Budget
Summary of Expense by Directorate

Power Management

Department(s)		Totals
45	Energy Programs	352,195
51	Power Management	82,089,276
Grand Total Expenses	**Power Management**	$82,441,471

Directorate Budget by Department and Activity
2023 Budget Compared to 2022 Original Budget

Directorate	Power Management

Department	Activity	2023 Budget	2022 Original Budget	Increase / (Decrease)	% Increase / (Decrease)
45 - Energy Programs	9 - Purchased Power	($1,763,524)	($2,196,000)	$432,476	(19.7%)
	11 - All Other District Labor	434,489	559,493	(125,004)	(22.3%)
	33 - Office Supplies & Expenses	5,000	5,000	-	0.0%
	42 - Business Expense & Travel	9,800	9,800	-	0.0%
	43 - Training Expense & Travel	6,600	6,600	-	0.0%
	45 - Subscriptions & Publications	150	150	-	0.0%
	60 - Audit Examination - State	29,000	34,000	(5,000)	(14.7%)
	61 - Professional Services	100,000	15,000	85,000	566.7%
	72 - Industry Assoc Assessments	10,680	10,375	305	2.9%
	111 - Electric Vehicle	5,000	5,000	-	0.0%
	112 - Residential Conservation Exp	475,000	481,000	(6,000)	(1.2%)
	113 - Commercial Conservation Exp	220,000	330,000	(110,000)	(33.3%)
	114 - Industrial Conservation Expense	320,000	480,000	(160,000)	(33.3%)
	115 - Agriculture Conservation Expense	175,000	170,000	5,000	2.9%
	117 - Residential Appliance & Lighting Program		19,000	(19,000)	(100.0%)
	118 - Low Income Conservation	325,000	300,000	25,000	8.3%
45 - Energy Programs Total		**352,195**	**229,418**	**122,777**	**53.5%**
51 - Power Management	9 - Purchased Power	81,493,877	100,887,958	(19,394,081)	(19.2%)
	11 - All Other District Labor	459,104	427,271	31,833	7.5%
	33 - Office Supplies & Expenses	1,500	1,500	-	0.0%
	42 - Business Expense & Travel	12,000	19,000	(7,000)	(36.8%)
	43 - Training Expense & Travel	3,000	6,000	(3,000)	(50.0%)
	45 - Subscriptions & Publications	15,600	-	15,600	N/A
	60 - Audit Examination - State	40,000	-	40,000	N/A
	61 - Professional Services	55,600	201,200	(145,600)	(72.4%)
	72 - Industry Assoc Assessments	8,595	8,327	268	3.2%
51 - Power Management Total		**82,089,276**	**101,551,256**	**(19,461,980)**	**(19.2%)**
Grand Total		**$82,441,471**	**$101,780,674**	**($19,339,203)**	**(19.0%)**

Department 45 Energy Programs

Activity	Description	GL/FERC	BU Project	Amount
009	**Purchased Power**			**($1,763,524)**
	EEI Reimbursement - Rebates	555.71		($1,763,524)
011	**All Other District Labor**			**$434,489**
	Labor - Conservation Program	908.30		$291,455
	Labor - EV	908.60		$29,893
	Labor - Leave	184.30		$60,828
	Labor - Purchased Power	557.00		$29,893
	Labor - Solar Connections	908.97		$22,420
033	**Office Supplies & Expenses**			**$5,000**
	Audit Field Materials (Flow Meter, Camera, Protective Clothing, Customer Materials)	908.30		$5,000
042	**Business Expense and Travel**			**$9,800**
	BPA/PNWCC Conservation Mtgs (Manager/Analyst)	908.30		$3,300
	EV (Manager)	908.60		$1,600
	Renewable meetings (White Creek, Nine Canyon, Packwood)	557.00		$3,300
	Solar (Manager)	908.97		$1,600
043	**Training Expense & Travel**			**$6,600**
	BPA Annual Conservation Mtgs (Advisor (2)/Analyst (2)/Specialist)	908.30		$4,000
	Misc. Training - (Advisor (3)/Analyst (2)/ Specialist)	908.30		$2,600
045	**Subscriptions & Publications**			**$150**
	Subscription & Publications (Home Energy Mag.)	908.30		$150
060	**Audit Examination - State**			**$29,000**
	CETA SAO Audit Examination Fees	557.00		$5,000
	I-937 SAO Audit Examination (Fees Conservation)	557.00		$16,000
	I-937 SAO Audit Examination Fees (REC)	557.00		$8,000
061	**Professional Services**			**$100,000**
	CETA Low-Income Assessment	908.35		$25,000
	Conservation Potential Assessment (CPA) and Demand Response Potential Assessment (	908.30		$60,000
	Legal Expense- K&L Gates, EES CPA Audit Support	557.00		$15,000
072	**Industry Association Assessment**			**$10,680**

Department 45 Energy Programs

Activity	Description	GL/FERC	BU Project	Amount
	APPA - DEED Program	921.00		$5,200
	Home Builders Association Dues	908.30		$450
	White Creek Cash Call	557.00		$4,000
	WREGIS Annual Dues & Fees	555.52		$1,030
111	**Electric Vehicle**			**$5,000**
	Electric Vehicle Rebate	908.60		$5,000
112	**Residential Conservation Expenses**			**$475,000**
	Residential Conservation Expenses	908.30		$475,000
113	**Commercial Conservation Expenses**			**$220,000**
	Commercial Conservation Expenses	908.32		$220,000
114	**Industrial Conservation Expenses**			**$320,000**
	Industrial Conservation Expenses	908.31		$320,000
115	**Irrigation Conservation Expenses**			**$175,000**
	Agriculture /Irrigation Conservation Expenses	908.33		$175,000
118	**Low Income Conservation Expenses**			**$325,000**
	Residential CAC Low Income Program	908.34		$225,000
	Residential District Low Income Program	908.30		$100,000
TOTAL EXPENSE	**Energy Programs**			**$352,195**

Department 51 Power Management

Activity	Description	GL/FERC	BU Project	Amount
009	**Purchased Power**			**$81,493,877**
	Ancillary Services (includes TEA Scheduling & Risk Management)	557.00		$1,468,858
	BPA Demand	555.05		$1,302,747
	BPA Prepay Credit	555.72		($161,256)
	BPA Reserve Distribution Clause (RDC)	555.09		($6,104,878)
	BPA Tier 2	555.06		$1,314,646
	BPA Transmission	565.05		$9,314,054
	BPA Transmission Ancillary Costs	565.05		$0
	Composite Charge (% of System) - LF	555.03		$17,591,588
	Energy Imbalance	557.00		$192,000
	GTA Delivery Charge	557.00		$12,623
	Irrigation Mitigation	555.03		($3,403,407)
	Load Regulation/Reg Freq Response	557.00		$812,679
	Load Shaping	555.03		($1,925,536)
	Non-Slice (Block)	555.03		($4,392,881)
	Non-Slice Charge LF	555.03		($2,950,464)
	Other Purchases - Options Premium	555.50		$2,518,750
	Other Purchases - Power	555.50		$8,302,332
	Packwood	555.50		$474,548
	PEAK/CAISO/WECC Dues	557.00		$147,760
	Renewable Energy Credit Purchases	555.52		$1,213,530
	Renewables (Nine Canyon, White Creek)	555.50		$3,463,784
	Resource Related Charges (RSS, GMS, TSS, etc.)	555.00		$1,644
	Short Term PTP	557.00		$58,482
	Spinning Reserves	557.00		$624,267
	Supplemental Reserves	557.00		$407,892
	Tier 1 Composite Block	555.03		$26,607,044
	Tier 1 Composite Slice	555.00		$24,603,071
011	**All Other District Labor**			**$459,104**
	Labor - Leave	184.30		$64,275
	Labor - Purchased Power	557.00		$394,829
033	**Office Supplies & Expenses**			**$1,500**
	Misc Office Supplies	557.00		$1,500
042	**Business Expense and Travel**			**$12,000**

Department 51 Power Management

Activity	Description	GL/FERC	BU Project	Amount
	BPA, PPC, TEA, PNUCC (Director/Senior Engineer/ Analyst)	557.00		$10,000
	Utility Analytics Institute (Director/Senior Engineer/Analyst)	557.00		$2,000
043	**Training Expense & Travel**			**$3,000**
	NWPPA, APPA, AMA (Director/Senior Engineer/Analyst/Specialist)	557.00		$3,000
045	**Subscriptions & Publications**			**$15,600**
	OATI WebGHG Service Product	557.00		$15,600
060	**Audit Examination - State**			**$40,000**
	3rd Party Verification - GHG Reporting Ecology	557.00		$40,000
061	**Professional Services**			**$55,600**
	Slice Implementation Group Assessment via PPC	557.00		$3,000
	TEA Consulting	557.00		$52,600
072	**Industry Association Assessment**			**$8,595**
	GMEI Maintenance Fee	557.00		$125
	IEEE (Senior Engineer)	557.00		$125
	Notary (Specialist)	557.00		$45
	OATI Web Registry Fee	557.00		$350
	PE License (Senior Engineer)	557.00		$250
	Peak Load Management Alliance (PLMA)	557.00		$2,700
	PPC Slice Assessment Cash Call	557.00		$5,000

TOTAL EXPENSE Power Management **$82,089,276**

Operations

Tab 6

PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY
2023 Budget
Summary of Expense by Directorate

Operations

Department(s)		Totals
31	Operations	1,185,000
32	Supt. of Transmission & Distribution	6,305,634
33	Supt. of Operations	624,820
34	Meter Shop	1,545,679
35	Transformer Shop	1,007,295
37	Automotive Shop	993,056
38	Support Services	3,243,853
39	Warehouse	460,300
Grand Total Expenses	**Operations**	$15,365,637

Directorate Budget by Department and Activity
2023 Budget Compared to 2022 Original Budget

Directorate	Operations

Department	Activity	2023 Budget	2022 Original Budget	Increase / (Decrease)	% Increase / (Decrease)
31 - Operations	11 - All Other District Labor	1,143,655	951,880	191,776	20.1%
	33 - Office Supplies & Expenses	4,000	4,000	0	0.0%
	42 - Business Expense & Travel	8,500	1,900	6,600	347.4%
	43 - Training Expense & Travel	4,500	2,000	2,500	125.0%
	45 - Subscriptions & Publications	500	500	0	0.0%
	61 - Professional Services	10,000	106,000	(96,000)	(90.6%)
	72 - Industry Assoc Assessments	845	845	0	0.0%
	104 - Other Employee Costs	13,000	13,724	(724)	(5.3%)
	132 - Office Equipment		5,000	(5,000)	(100.0%)
31 - Operations Total		**1,185,000**	**1,085,849**	**99,152**	**9.1%**
32 - Supt of Transm & Distribtution	10 - District Overtime Labor	719,565	680,000	39,565	5.8%
	11 - All Other District Labor	4,124,864	3,994,092	130,772	3.3%
	12 - Materials & Supplies		190,000	(190,000)	(100.0%)
	14 - Small Tools & Materials	75,000	71,500	3,500	4.9%
	17 - Operation & Maintenance Exp	50,000	30,000	20,000	66.7%
	18 - Misc Construction Expense	205,344	67,500	137,844	204.2%
	19 - Tree Trimming - Contract	734,000	866,000	(132,000)	(15.2%)
	20 - Off-the-Dock Labor	10,000	10,000	0	0.0%
	21 - Elec Construction Contracts	220,000	222,000	(2,000)	(0.9%)
	39 - Maint of Equipment	15,000	15,000	0	0.0%
	42 - Business Expense & Travel	10,000	7,100	2,900	40.8%
	43 - Training Expense & Travel	34,361	33,001	1,360	4.1%
	50 - Telephone & Answering Services	12,000	12,000	0	0.0%
	61 - Professional Services	10,000	10,000	0	0.0%
	104 - Other Employee Costs	47,500	48,050	(550)	(1.1%)
	131 - Structures & Improvements	30,000		30,000	N/A
	134 - Tools, Shop & Stores Equipment	8,000	12,500	(4,500)	(36.0%)
32 - Supt of Transm & Distribtution Total		**6,305,634**	**6,268,743**	**36,891**	**0.6%**
33 - Supt of Operations	10 - District Overtime Labor	26,624	25,600	1,024	4.0%
	11 - All Other District Labor	182,556	177,236	5,320	3.0%
	17 - Operation & Maintenance Exp	52,500	52,500	0	0.0%
	40 - Rents	179,140	177,550	1,590	0.9%
	42 - Business Expense & Travel	3,500	3,500	0	0.0%
	43 - Training Expense & Travel	12,000	10,500	1,500	14.3%
	50 - Telephone & Answering Services	115,000	115,000	0	0.0%
	61 - Professional Services	53,000	133,000	(80,000)	(60.2%)
	72 - Industry Assoc Assessments	500	500	0	0.0%
33 - Supt of Operations Total		**624,820**	**695,386**	**(70,566)**	**(10.1%)**
34 - Meter Shop	10 - District Overtime Labor	41,200	35,600	5,600	15.7%
	11 - All Other District Labor	713,879	680,340	33,539	4.9%
	14 - Small Tools & Materials	6,000	4,000	2,000	50.0%
	17 - Operation & Maintenance Exp	7,500	7,500	0	0.0%
	39 - Maint of Equipment	10,000	10,000	0	0.0%
	42 - Business Expense & Travel	1,500	1,500	0	0.0%
	43 - Training Expense & Travel	11,300	12,780	(1,480)	(11.6%)
	45 - Subscriptions & Publications	500	500	0	0.0%
	61 - Professional Services	80,000		80,000	N/A
	124 - Meters & Related Items	600,000	550,000	50,000	9.1%
	127 - SCADA Communications Equipment	5,000	5,000	0	0.0%
	128 - SCADA Substation Equipment	5,000	5,000	0	0.0%
	135 - Laboratory & Test Equipment	58,800	49,000	9,800	20.0%
	136 - Communication Equipment	5,000	5,000	0	0.0%
34 - Meter Shop Total		**1,545,679**	**1,366,220**	**179,459**	**13.1%**
35 - Transformer Shop	10 - District Overtime Labor	48,360	46,500	1,860	4.0%
	11 - All Other District Labor	664,813	682,724	(17,911)	(2.6%)
	14 - Small Tools & Materials	12,200	10,500	1,700	16.2%
	17 - Operation & Maintenance Exp	133,922	133,922	0	0.0%
	18 - Misc Construction Expense	10,000	10,000	0	0.0%
	42 - Business Expense & Travel	4,300	4,300	0	0.0%
	43 - Training Expense & Travel	8,200	8,200	0	0.0%
	45 - Subscriptions & Publications	500	500	0	0.0%
	135 - Laboratory & Test Equipment	125,000	110,000	15,000	13.6%
35 - Transformer Shop Total		**1,007,295**	**1,006,646**	**649**	**0.1%**
37 - Automotive Shop	10 - District Overtime Labor	10,300	9,350	950	10.2%
	11 - All Other District Labor	378,556	367,622	10,934	3.0%

Department	Activity	2023 Budget	2022 Original Budget	Increase / (Decrease)	% Increase / (Decrease)
	14 - Small Tools & Materials	12,100	12,100	0	0.0%
	15 - Transportation Expense-Gas&Oil	380,000	225,000	155,000	68.9%
	16 - Transportation Exp-Repair&Main	200,000	192,000	8,000	4.2%
	17 - Operation & Maintenance Exp	1,000	1,000	0	0.0%
	39 - Maint of Equipment	6,000	6,000	0	0.0%
	42 - Business Expense & Travel	1,200	1,200	0	0.0%
	43 - Training Expense & Travel	3,900	3,900	0	0.0%
37 - Automotive Shop Total		**993,056**	**818,172**	**174,884**	**21.4%**
38 - Support Services	10 - District Overtime Labor	30,400	28,000	2,400	8.6%
	11 - All Other District Labor	476,229	435,133	41,096	9.4%
	14 - Small Tools & Materials	3,000	3,000	0	0.0%
	17 - Operation & Maintenance Exp	17,500	17,500	0	0.0%
	23 - Environmental	26,000	26,000	0	0.0%
	27 - Personal Computer Software	3,500	3,500	0	0.0%
	37 - Grounds Care	94,524	94,524	0	0.0%
	38 - Maint of Bldg & Improvements	333,500	307,400	26,100	8.5%
	39 - Maint of Equipment	5,000	5,000	0	0.0%
	42 - Business Expense & Travel	4,900	2,400	2,500	104.2%
	43 - Training Expense & Travel	7,500	7,500	0	0.0%
	45 - Subscriptions & Publications	500	500	0	0.0%
	51 - Water,Garbage,Irrigation&Other	79,000	79,000	0	0.0%
	61 - Professional Services	16,500	16,500	0	0.0%
	104 - Other Employee Costs	1,800	1,800	0	0.0%
	131 - Structures & Improvements	1,064,000	552,000	512,000	92.8%
	133 - Transportation Equipment	1,080,000	1,107,000	(27,000)	(2.4%)
38 - Support Services Total		**3,243,853**	**2,686,757**	**557,096**	**20.7%**
39 - Warehouse	13 - Store Expense - Non Labor	25,000	25,000	0	0.0%
	14 - Small Tools & Materials	4,000	4,000	0	0.0%
	17 - Operation & Maintenance Exp	398,000	398,000	0	0.0%
	42 - Business Expense & Travel	1,000	1,000	0	0.0%
	43 - Training Expense & Travel	3,300	3,300	0	0.0%
	104 - Other Employee Costs	29,000	29,000	0	0.0%
39 - Warehouse Total		**460,300**	**460,300**	**0**	**0.0%**
Grand Total		**$15,365,637**	**$14,388,072**	**$977,565**	**6.8%**

Department 31 Operations

Activity	Description	GL/FERC	BU Project	Amount
011	**All Other District Labor**			**$1,143,655**
	Labor - Admin General	920.00		$116,115
	Labor - Automotive Shop	184.12		$36,892
	Labor - Customer Accounting	903.00		$19,271
	Labor - Distribution	588.00		$736,389
	Labor - Inventory	163.00		$34,970
	Labor - Leave	184.30		$160,112
	Services, Set Xfmrs, Run Secondary	369.10	94	$39,906
033	**Office Supplies & Expenses**			**$4,000**
	Misc Office Supplies	588.00		$4,000
042	**Business Expense and Travel**			**$8,500**
	Distributech (AGM/Senior Director)	588.00		$2,000
	E&O (Safety Coordinator)	588.00		$2,500
	EUSAC (Safety Coordinator)	588.00		$2,500
	Travel (Senior Director/Assistant)	588.00		$1,500
043	**Training Expense & Travel**			**$4,500**
	Safety Coordinator Training	588.00		$2,500
	Training (Senior Director/Executive Assistant)	588.00		$2,000
045	**Subscriptions & Publications**			**$500**
	Publications	588.00		$500
061	**Professional Services**			**$10,000**
	Safety Committee Consultant	588.00		$10,000
072	**Industry Association Assessment**			**$845**
	Admin Professionals (Executive Assistant)	588.00		$50
	IEEE (Senior Director)	588.00		$250
	ISA (Tree Coordinator)	588.00		$220
	National Arbor Day Foundation (Tree Coordinator)	588.00		$75
	Notary	588.00		$50
	PE License (Senior Director)	588.00		$150
	UDIG (Superintendent)	588.00		$50

Department 31 Operations

Activity	Description	GL/FERC	BU Project	Amount
104	**Other Employee Costs**			**$13,000**
	AED Batteries	588.00		$700
	CDL Endorsement Reimbursement - Ops	588.00		$1,300
	First Aid Cards	588.00		$2,000
	First Aid Training Supplies	588.00		$1,000
	Other Dist. Expense	588.00		$2,000
	Safety Lens Reimbursement Program	588.00		$3,000
	Safety Supplies	588.00		$1,000
	Special Safety Sessions	588.00		$2,000
TOTAL EXPENSE Operations				**$1,185,000**

Department 32 Supt. of Transmission & Distribution

Activity	Description	GL/FERC	BU Project	Amount
010	**District Overtime Labor**			**$719,565**
	Labor - Overtime - Distribution	588.00		$707,200
	Vista Bay #1 Metalclad Switchgear Replacement	362.01	375	$12,365
011	**All Other District Labor**			**$4,124,864**
	Dist Base Growth	365.00	140	$239,232
	Dist Base Growth	366.00	140	$352,568
	Distribution Pole Replacement	364.00	160	$13,828
	Labor - Admin General	920.00		$2,622
	Labor - Broadband	935.20		$7,678
	Labor - Customer Accounting	903.00		$92,490
	Labor - Distribution	588.00		$1,910,241
	Labor - Leave	184.30		$575,381
	Labor - Transmission	566.00		$15,378
	Meal Reimbursement	588.00		$15,000
	POS#12 - GUM - 4 Reconductor #4 ACSR, Oak St.	365.00	362	$66,000
	POS#13 - GUM - 4 Reconductor #4 ACSR, Game Farm Rd.	365.00	369	$201,738
	POS#36A - SSR - 3 Reconducctor (DNR Land) WEST	365.00	395	$1,667
	POS#58 - BEC - 3 New feeder to east to tie with SSR-1	365.00	205	$6,667
	Repair & Replacement - Cable	367.00	147	$34,050
	Services, Set Xfmrs, Run Secondary	369.10	94	$229,480
	Services, Set Xfmrs, Run Secondary	369.20	94	$149,671
	Transmission Line-Sunset Rd to Dallas Rd	355.00	77	$2,500
	Trouble Orders	365.00	149	$207,000
	Vista Bay #1 Metalclad Switchgear Replacement	362.01	375	$1,673
014	**Small Tools & Materials**			**$75,000**
	Small Tool Expense	588.00		$75,000
017	**Operation & Maintenance Expense**			**$50,000**
	Other Dist Exp	588.00		$30,000
	Trouble Orders - O&M	588.00	149	$20,000
018	**Miscellaneous Construction Expense**			**$205,344**
	Misc. Construction Capital Expense - Line Department	364.00	60	$67,500
	Trouble Orders	365.00	149	$137,844

Department 32 Supt. of Transmission & Distribution

Activity	Description	GL/FERC	BU Project	Amount
019	**Tree Trimming - Contract**			**$734,000**
	Herbicide	593.40		$1,000
	Tree Replacement	593.40		$20,000
	Tree Trimming-Contract	593.40		$713,000
020	**Off-the-Dock Labor**			**$10,000**
	Pole Stubbing	364.00	64	$10,000
021	**Electric Construction Contracts**			**$220,000**
	Pole Testing	593.10		$180,000
	Steel Pole Testing	593.10		$40,000
039	**Maintenance of Equipment**			**$15,000**
	Maint of Tools	588.00		$15,000
042	**Business Expense and Travel**			**$10,000**
	E&O (2)	588.00		$2,500
	ICUEE	588.00		$2,500
	Supt Business (2)	588.00		$2,500
	Tree Coordinator Business Exp	588.00		$2,500
043	**Training Expense & Travel**			**$34,361**
	Lineman Rodeo	588.00		$1
	Training	588.00		$20,000
	Training (Line Apprentices)	588.00		$14,360
050	**Telephone & Answering Services**			**$12,000**
	Locates	584.00		$12,000
061	**Professional Services**			**$10,000**
	Meter Repair /Coordinated Electrical Repair	597.00		$10,000
104	**Other Employee Costs**			**$47,500**
	FR Clothing (New Hires)	588.00		$1,500
	FR Clothing (Rain Gear)	588.00		$2,000
	FR Clothing and Gloves (Current Employees)	588.00		$42,000
	Hats	588.00		$2,000

Department 32 Supt. of Transmission & Distribution

Activity	Description	GL/FERC	BU Project	Amount
131	**Structures & Improvements**			**$30,000**
	Hot Arms (50)	390.00	390	$30,000
134	**Tools, Shop & Stores Equipment**			**$8,000**
	Loadblock	394.00	404	$8,000
TOTAL EXPENSE	**Supt. of Transmission & Distribution**			**$6,305,634**

Department 33 Supt. of Operations

Activity	Description	GL/FERC	BU Project	Amount
010	**District Overtime Labor**			**$26,624**
	Labor - Overtime - Distribution	588.00		$26,624
011	**All Other District Labor**			**$182,556**
	Labor - Customer Accounting	903.00		$1,391
	Labor - Distribution	588.00		$155,607
	Labor - Leave	184.30		$25,558
017	**Operation & Maintenance Expense**			**$52,500**
	Communication Expenses	588.00		$2,500
	Doble Lease - Power Factor Test Set (XFR Shop)	592.00		$32,000
	Doble Relay Test Set Maintenance/Calibration	592.00		$12,000
	Microwave Site/Umatilla Power Bill	935.01		$6,000
040	**Rents**			**$179,140**
	800 MHz Usage Fee - BCES	588.00		$40,000
	Badger Mtn Site AMI Fee	935.00		$4,000
	DNR Billing - Jump Off Joe	935.02		$44,240
	Microwave Circuit Billing - BCES	588.00		$32,000
	Prosser Tower Site	935.03		$3,000
	Rattlesnake Site Fee	588.00		$50,000
	Umatilla Ground Lease and Taxes	935.01		$5,900
042	**Business Expense and Travel**			**$3,500**
	Travel (Supt)	588.00		$3,500
043	**Training Expense & Travel**			**$12,000**
	Dept Asst. Training	588.00		$1,500
	Survalent Training/Training (Back Up Dispatcher)	588.00		$3,500
	Training (Supt)	588.00		$3,500
	Training (System Dispatcher)	588.00		$3,500
050	**Telephone & Answering Services**			**$115,000**
	Call Center	588.00		$115,000
061	**Professional Services**			**$53,000**
	Communications Contracting	588.00		$25,000

Department 33 Supt. of Operations

Activity	Description	GL/FERC	BU Project	Amount
	Meter Testing	586.10		$28,000
072	**Industry Association Assessment**			**$500**
	Electrician License Renewal	588.00		$500
TOTAL EXPENSE	**Supt. of Operations**			**$624,820**

Department 34 Meter Shop

Activity	Description	GL/FERC	BU Project	Amount
010	**District Overtime Labor**			**$41,200**
	Labor - Overtime - Distribution	588.00		$41,200
011	**All Other District Labor**			**$713,879**
	Angus Bay #3 Feeder Breaker & Relay Replacement	362.01	402	$7,609
	Fiber to H2F2 Reservior Sub	380.00	202	$12,500
	Hedges 115kV Metering Point	355.00	169	$5,000
	Highlands Sub SCADA Upgrades	380.00	202	$11,385
	Labor - Admin General	920.00		$553
	Labor - Distribution	588.00		$476,104
	Labor - Leave	184.30		$99,943
	Prosser Bay #2 Voltage Reg Replacement	362.01	373	$4,238
	Services, Set Xfmrs, Run Secondary	370.00	94	$56,127
	Vista Bay #1 Metalclad Switchgear Replacement	362.01	375	$24,570
	Vista Substation Scada Ugrades	380.00	202	$15,850
014	**Small Tools & Materials**			**$6,000**
	Small Tool Expense	597.00		$6,000
017	**Operation & Maintenance Expense**			**$7,500**
	Calibration of RFL and Weco Meter Test Boards	597.00		$2,000
	O&M Expenses	597.00		$5,000
	Support Package for RFL5800	597.00		$500
039	**Maintenance of Equipment**			**$10,000**
	Other Dist Exp	597.00		$10,000
042	**Business Expense and Travel**			**$1,500**
	NW Meter Group and Hands On Relay Planning	588.00		$1,500
043	**Training Expense & Travel**			**$11,300**
	NW Meter School	588.00		$1,500
	Power Quality	588.00		$1,400
	Relay School	588.00		$1,400
	SEL-2032 Communication Processor Training	588.00		$2,000
	Training	588.00		$5,000

Department 34 Meter Shop

Activity	Description	GL/FERC	BU Project	Amount
045	**Subscriptions & Publications**			**$500**
	Subscription & Publications	588.00		$500
061	**Professional Services**			**$80,000**
	Meter Change-outs	370.00	336	$80,000
124	**Meters & Related Items**			**$600,000**
	Meter Change-outs	370.00	336	$350,000
	Meters	370.00	86	$250,000
127	**SCADA Communications Equipment**			**$5,000**
	SCADA Radio	592.30		$5,000
128	**SCADA Substation Equipment**			**$5,000**
	SCADA Substation Equipment	592.00		$5,000
135	**Laboratory & Test Equipment**			**$58,800**
	Electronic Recloser Test simulator	395.00	385	$25,000
	Phenolic Label Maker	395.00	393	$10,000
	Power Quality Recorder/Meter Base Use	395.00	396	$5,800
	Single Polyphase Meter tester	395.00	399	$18,000
136	**Communication Equipment**			**$5,000**
	Communications Equipment/800 MHz Radios	397.00	49	$5,000
TOTAL EXPENSE Meter Shop				**$1,545,679**

Department 35 Transformer Shop

Activity	Description	GL/FERC	BU Project	Amount
010	**District Overtime Labor**			**$48,360**
	Labor - Overtime - Distribution	588.00		$48,360
011	**All Other District Labor**			**$664,813**
	Angus Bay #3 Feeder Breaker & Relay Replacement	362.01	402	$8,889
	Fiber to H2F2 Reservior Sub	380.00	202	$2,000
	Hedges 115kV Metering Point	355.00	169	$5,000
	Labor - Admin General	920.00		$2,568
	Labor - Broadband	935.20		$779
	Labor - Distribution	588.00		$484,313
	Labor - Leave	184.30		$93,074
	Prosser Bay #2 Voltage Reg Replacement	362.01	373	$13,018
	Vista Bay #1 Metalclad Switchgear Replacement	362.01	375	$48,932
	Vista Substation Scada Ugrades	380.00	202	$6,240
014	**Small Tools & Materials**			**$12,200**
	Handheld TTR	595.00		$4,200
	Small Tool Expense	595.00		$8,000
017	**Operation & Maintenance Expense**			**$133,922**
	Gloves, Mac's, Blankets, Rubber	595.00		$12,000
	O&M Expense	595.00		$81,922
	Oil Testing at Wind Farm (Reimbursable Job 19244)	595.00		$12,000
	SD Myer Oil Screening	595.00		$18,000
	Substation Sterilization	595.00		$10,000
018	**Miscellaneous Construction Expense**			**$10,000**
	Misc. Construction Capital Expense - Transformer Shop	361.00	61	$10,000
042	**Business Expense and Travel**			**$4,300**
	Cascade Conference	588.00		$1,000
	Codes Update (6) (Station Electrician)	588.00		$2,300
	E&O	588.00		$1,000
043	**Training Expense & Travel**			**$8,200**
	Cooper Reg Workshop	588.00		$1,600
	Doble Training Onsite	588.00		$1,600

Department 35 Transformer Shop

Activity	Description	GL/FERC	BU Project	Amount
	Pesticide License - Refresher	588.00		$200
	Recloser Training	588.00		$1,600
	Reinhausen Tap Changer Workshop	588.00		$1,600
	Waukesha Tap Changer Training	588.00		$1,600
045	**Subscriptions & Publications**			**$500**
	Subscription & Publications	588.00		$500
135	**Laboratory & Test Equipment**			**$125,000**
	Gas Analyzer	395.00	389	$10,000
	Infrared Camera - XFMR Shop	395.00	335	$25,000
	Mobile Spare Battery Bank/Trailer and Equipment	395.00	340	$64,000
	TTR and Winding Resistance Tester	395.00	276	$26,000
TOTAL EXPENSE Transformer Shop				**$1,007,295**

Department 37 Automotive Shop

Activity	Description	GL/FERC	BU Project	Amount
010	**District Overtime Labor**			**$10,300**
	Labor - Overtime - Transportation	184.11		$10,300
011	**All Other District Labor**			**$378,556**
	Labor - Automotive Shop	184.12		$317,737
	Labor - Distribution	588.00		$7,821
	Labor - Leave	184.30		$52,998
014	**Small Tools & Materials**			**$12,100**
	All Data	184.12		$2,100
	General Tools	184.12		$3,000
	Software Update	184.12		$7,000
015	**Transportation Expense - Gas & Oil**			**$380,000**
	Transportation Expense - Gas and Oil	184.11		$380,000
016	**Transportation Expense - Repair & Maintenance**			**$200,000**
	Fire Extinguishers on Vehicles	184.12		$2,000
	Transportation Expense	184.12		$180,000
	Vehicle Detailing	184.12		$18,000
017	**Operation & Maintenance Expense**			**$1,000**
	O&M Expense	588.00		$1,000
039	**Maintenance of Equipment**			**$6,000**
	Bio Digester (Filtration System for Wash Bay)	598.10		$2,500
	Maint Agrmts for Pressure Washer, Compressor and Water Filter	184.12		$2,500
	Transportation Expense - Other	184.12		$1,000
042	**Business Expense and Travel**			**$1,200**
	Business Travel & Expense (Foreman/Mechanic)	588.00		$1,200
043	**Training Expense & Travel**			**$3,900**
	Altec Aerial Training	588.00		$1,200
	Automotive Training Group (at CBC)	588.00		$700
	Cummings Training	588.00		$1,000
	Vehicle Motor Maint (1)	588.00		$1,000

Department 37 Automotive Shop

Activity	Description	GL/FERC	BU Project	Amount
TOTAL EXPENSE	**Automotive Shop**			**$993,056**

Department 38 Support Services

Activity	Description	GL/FERC	BU Project	Amount
010	**District Overtime Labor**			**$30,400**
	Labor - Overtime - Inventory	163.00		$30,400
011	**All Other District Labor**			**$476,229**
	Labor - Admin General	920.00		$56,881
	Labor - Distribution	588.00		$106,802
	Labor - Inventory	163.00		$243,158
	Labor - Leave	184.30		$66,672
	Labor - Transmission	566.00		$2,716
014	**Small Tools & Materials**			**$3,000**
	Small Tool Expense	588.00		$3,000
017	**Operation & Maintenance Expense**			**$17,500**
	O&M Expense	588.00		$2,500
	Pole Line Sterilization	571.20		$15,000
023	**Environmental**			**$26,000**
	Hazardous Waste Disposal	588.00		$6,000
	Transportation Expense - Oil Disposal	588.00		$10,000
	Universal Waste Disposal	588.00		$10,000
027	**Personal Computer Software**			**$3,500**
	SDS Online (MSDS)	588.00		$3,500
037	**Grounds Care**			**$94,524**
	General Expenses - Admin	921.00		$4,000
	General Expenses - Operations	598.10		$3,000
	Kennewick	921.00		$48,500
	Property Clean-Up	598.10		$4,000
	Prosser	935.04		$16,024
	Substations	598.10		$6,500
	Tree Maintenance	598.10		$12,500
038	**Maint of Bldg & Improvements - General**			**$333,500**
	Carpet Cleaning (Admin)	935.00		$5,000
	Carpet Cleaning (Operations)	598.10		$4,500

Department 38 Support Services

Activity	Description	GL/FERC	BU Project	Amount
	Fire Extinguishers	598.10		$3,000
	Floor Mats (Admin)	935.00		$4,000
	Floor Mats (Operations)	598.10		$10,000
	General Maintenance (Admin)	935.00		$22,000
	General Maintenance (Operations)	598.10		$22,000
	General Maintenance (Prosser)	935.04		$20,000
	Graffiti Removal	598.10		$5,000
	HVAC (Admin)	935.00		$25,000
	HVAC (Operations)	598.10		$15,000
	HVAC (Prosser)	935.04		$2,000
	Janitorial - Extra work as needed	598.10		$5,000
	Janitorial Services (Admin)	935.00		$63,000
	Janitorial Services (Operations)	598.10		$51,000
	Janitorial Services (Prosser)	935.04		$19,000
	Painting (Admin)	935.00		$6,000
	Painting (Operations)	598.10		$6,000
	Security (Radio Sites)	598.10		$26,000
	Water Service Ops and Prosser	588.00		$10,000
	Water System Admin	935.00		$5,000
	Wireless Expansion (Operations)	598.10		$5,000
039	**Maintenance of Equipment**			**$5,000**
	Maintenance	935.00		$5,000
042	**Business Expense and Travel**			**$4,900**
	Audit Disposal Facility	588.00		$1,000
	Green House Gas Meeting	588.00		$300
	ICUEE	588.00		$2,500
	Maint. Dept Business Travel Exp	588.00		$400
	Supt of Support Svcs Business Travel (Includes: Fleet Managers Quarterly)	588.00		$700
043	**Training Expense & Travel**			**$7,500**
	Hazwopper Training	588.00		$1,200
	NWPPA Environmental Task Force (Quarterly)	588.00		$1,400
	PCB & XFR Oil Workshop (2)	588.00		$3,000
	Pesticide License Renewal and Testing	588.00		$1,200
	Washington Dept of Ecology (RCRA)	588.00		$700

Department 38 Support Services

Activity	Description	GL/FERC	BU Project	Amount
045	**Subscriptions & Publications**			**$500**
	Subscription & Publications	588.00		$500
051	**Water, Garbage, Irrigation & Other**			**$79,000**
	Benton County Property Tax	935.00		$2,000
	CID	935.00		$2,000
	KID	935.00		$9,000
	Prosser Utilities	598.10		$19,000
	Water, Garbage, Irrigation, Other	598.10		$47,000
061	**Professional Services**			**$16,500**
	General Expenses	921.00		$4,000
	Green House Gas	588.00		$3,000
	Mech Engr Drawings	588.00		$4,000
	Radio Tower Site Inspection	935.02		$5,500
104	**Other Employee Costs**			**$1,800**
	Clothing/Shoes/Gloves	588.00		$1,800
131	**Structures & Improvements**			**$1,064,000**
	Admin HVAC Controls	390.00	391	$300,000
	Admin Window Replacement	390.00	380	$40,000
	Ely Property Fence	390.00	386	$72,000
	Facility Fencing and Gates	390.00	326	$500,000
	Physical Key Lock Changes	390.00	305	$40,000
	Ultraviolet Lights (virus killer)	390.00	400	$5,000
	Wiring - Camera System	390.00	222	$100,000
	Zephyr Substation Gate	390.00	403	$7,000
133	**Transportation Equipment**			**$1,080,000**
	Back Hoe (Replaces #62)	392.00	381	$160,000
	Engineering Half ton Pick Up (Replaces #121)	392.00	387	$70,000
	Meter Shop Half Ton Pickup (Replace #58)	392.00	392	$70,000
	Service Truck - Kennewick (Replaces #184)	392.00	398	$180,000
	Vac Truck	392.00	401	$600,000
TOTAL EXPENSE Support Services				**$3,243,853**

PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY
2023 Budget

Department 39 Warehouse

Activity	Description	GL/FERC	BU Project	Amount
013	**Store Expense - Non Labor**			**$25,000**
	Stores Exp Undistributed	163.00		$25,000
014	**Small Tools & Materials**			**$4,000**
	Small Tool Expense	163.00		$4,000
017	**Operation & Maintenance Expense**			**$398,000**
	Exempt Inventory	163.00		$300,000
	Other Dist Exp	588.00		$30,400
	Stores Exp Undistributed	163.00		$67,600
042	**Business Expense and Travel**			**$1,000**
	Travel Expense (Foremen/Warehouseworker/Coordinator)	588.00		$1,000
043	**Training Expense & Travel**			**$3,300**
	NISC - ABS	588.00		$1,300
	NWPPA Material Management (1)	588.00		$700
	Warehouse Coordinator	588.00		$1,300
104	**Other Employee Costs**			**$29,000**
	A&G	921.00		$4,300
	Other Distribution Expense	588.00		$24,700
TOTAL EXPENSE Warehouse				**$460,300**

Non-Departmental

Tab 6

PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY
2023 Budget
Summary of Expense by Directorate

Non-Departmental

Department(s)		Totals
98	Non-Departmental Rev/Exp	37,629,378
Grand Total Expenses	**Non-Departmental**	$37,629,378

Directorate Budget by Department and Activity
2023 Budget Compared to 2022 Original Budget

Directorate	No Directorate

Department	Activity	2023 Budget	2022 Original Budget	Increase / (Decrease)	% Increase / (Decrease)
98 - Non-Departmental Rev/Exp	11 - All Other District Labor	($100,000.00)	($100,000.00)	$0.00	0.0%
	80 - Public Utility & Excise Tax	5,500,000	5,477,000	23,000	0.4%
	81 - State Privilege Tax	2,806,000	2,797,000	9,000	0.3%
	82 - City Occupation Taxes	6,406,000	6,377,000	29,000	0.5%
	88 - Payroll Taxes	1,293,344	1,241,105	52,239	4.2%
	101 - Employee Benefits	5,717,540	5,403,233	314,307	5.8%
	150 - Principal	3,130,000	3,195,000	(65,000)	(2.0%)
	151 - Interest	1,917,684	2,013,214	(95,530)	(4.7%)
	301 - Depreciation	11,658,810	10,926,440	732,370	6.7%
	545 - Other Electric Revenue	(700,000)	(700,000)	-	0.0%
98 - Non-Departmental Rev/Exp Total		**37,629,378**	**36,629,992**	**999,386**	**2.7%**
Grand Total		**$37,629,378**	**$36,629,992**	**$999,386**	**2.7%**

Department 98 Non-Departmental Rev/Exp

Activity	Description	GL/FERC	BU Project	Amount
011	**All Other District Labor**			**($100,000)**
	Labor Attrition	588.00		($100,000)
080	**State Public Utility Tax & Other Excise Taxes**			**$5,500,000**
	Other Excise Tax	408.08		$92,000
	Public Utility Tax	408.06		$5,408,000
081	**State Privelege Tax**			**$2,806,000**
	Privilege Tax	408.05		$2,806,000
082	**City Occupation Taxes**			**$6,406,000**
	City Occupation Tax	408.07		$6,406,000
088	**Payroll Taxes**			**$1,293,344**
	Medicare	184.34		$248,719
	Social Security	184.34		$1,044,625
101	**Employee Benefits**			**$5,717,540**
	Change in PL	184.30		$200,000
	Deferred Compensation	184.40		$473,920
	Dental	184.36		$211,434
	Life Insurance	184.32		$47,000
	Medical	184.33		$2,517,588
	PERS	184.35		$1,725,993
	State Industrial (L&I)	184.31		$124,800
	STD Admin Fee	184.39		$3,000
	Unemployment	184.38		$10,000
	VEBA Wellness ($200 per employee per month)	184.40		$366,000
	Vision	184.44		$37,805
150	**Principal**			**$3,130,000**
	Debt Service - Principal	125.00		$3,130,000
151	**Interest**			**$1,917,684**
	Amortization of Bond Loss/Gain on Defeasance	428.00		($3,231)
	Amortization of Bond Premium	429.00		($419,666)
	BABs Subsidy for 2010 Bonds	427.01		($336,486)

Department 98 Non-Departmental Rev/Exp

Activity	Description	GL/FERC	BU Project	Amount
	Bond Interest Expense	427.00		$2,677,067
301	**Depreciation Expense**			**$11,658,810**
	Depr - Broadband	403.61		$952,900
	Depr - Distribution	403.60		$8,110,010
	Depr - General Plant	403.70		$1,799,700
	Depr - Generation	403.40		$63,000
	Depr - Transmission	403.50		$307,200
	Depr - Transportation Equipment	184.12		$426,000
545	**Other Electric Revenue**			**($700,000)**
	Joint Use Deficiency Corrections - Pole Attachment Reimbursements	590.10		($700,000)

TOTAL EXPENSE Non-Departmental Rev/Exp **$37,629,378**

Activity Codes

Tab 6

SYSTEM COSTS:

5 Construction Overhead Allocated
The allocation of overhead construction costs based on loaded construction payroll.

6 Warehouse & Small Tool Allocated
The allocation of expenses associated with the warehouse and purchasing functions based on inventory activity.

7 Transportation Expense Allocated
The allocation of expenses associated with the auto shop function to mileage.

8 Benefits & Payroll Taxes Allocated
The allocation of employee benefits and payroll taxes based on labor.

9 Purchased Power
Includes all expenses associated with the procurement of electric power and the associated transmission expense.

Some examples of power sources are included here:

*The Energy Authority (TEA)
*Bonneville Power Administration/Energy NW
*Market purchases and contracts for purchase
*Frederickson

10 District Overtime Labor
Includes all expenses for wages paid to District employees for overtime worked.

11 All Other District Labor
All expenses for wages, other than for overtime, including the following:

*Regular Pay (includes temporary upgrades, etc.)
*Standby Pay
*Duty Pay
*Vehicle Add Pay
*Other pay not covered elsewhere

12 Materials & Supplies
Includes all materials and supplies used which are kept in the District's inventories, except substation power transformers and regulators.

13 Stores Expense - Non Labor
Includes charges for the following:

*Cost of special forms for stores and purchasing use
*Miscellaneous general use materials and supplies of very low value such as miscellaneous screws, bolts, nuts, batteries, rags, nails, etc.

14 Small Tools & Materials

Includes expenses for tools and tool items having a unit cost of less than **$5,000**. Also includes such items as rope or chain used in conjunction with other tools even though purchased by the reel where the intent is to cut it into useable sizes.

Some examples of expenses included here are:

*Klien Chicago Grips
*Hot sticks
*High voltage gloves
*Shovels and handles
*Rope & chain
*Endless slings
*Saw blades and files
*Glass rangepoles
*String measuring devices
*Extending level rod
*Magnetic strobe lights
*Travellers
*Drill bits and braces
*Pull grips and clamp sticks
*Hoists-hotstick and lineman
*Cadweld molds
*Signs - men working, etc.
*Traffic cones
*Ground clamps
*Hot line jumpers
*Line guards
*Miscellaneous test meters
*Electric drills and saws
*Various small hand tools

15 Transportation Expense - Gas & Oil

Includes all expenses for gasoline, diesel fuel, propane and automotive oil and grease.

16 Transportation Expense - Repair & Maintenance

Includes all expenses for parts and labor purchased to repair and maintain all vehicles in good condition, including towing costs.

17 Operations & Maintenance Expense

Includes expenses pertinent to the operations and maintenance of the District's electrical systems.

Some examples of expenses included here are:

*Materials and supplies generally purchased to operations or maintenance expense accounts rather than to inventory.
*Special engineering supplies
*Drafting film (Mylar, etc.)
*White print material
*Reduction services
*Microfilming
*Special forms unique to operations or maintenance
*Equipment instructions, operating, maintenance and service manuals
*Blueprint machine maintenance and paper costs
*Pressure vacuum regulators and gauges
*Rubber padding
*Paving repairs (i.e. road crossings, etc.)
*Wildlife protective boots
*Posts with cable decals
*Hi-Line road work
*Fuse links and other small fuses including bayonet fuses for transformers
*Miscellaneous materials and services for operations or maintenance of electric systems

*Repairs to private property

Does not include materials and supplies normally purchased to District inventories or Off-the-Dock contract labor budgeted separately.

18 Miscellaneous Construction Expense

Includes costs charged to jobs for items of expense that do not become a part of a unit of property.

Some examples of expenses included here are:

*Benton County Engineer costs
*Purchases of sand, gravel and concrete for construction
*Rental costs necessary to job
*Service charges necessary to job
*Purchased labor other than bid by contract or quote (ex. payments to small contractor for road patching, trenching, blasting, digging pole holes, etc.)
*Payments to machine shops for making parts
*Purchased surveying costs incurred on specific jobs the construction of new transmission or distribution plant
*Miscellaneous Engineering or service labor for specific jobs
*Photography charged to jobs
*Miscellaneous small charges not readily identifiable
*Miscellaneous supplies for surveying such as stakes, flags etc.

19 Tree Trimming - Contract

Includes only those expenses for contracted tree trimming.

20 Off-the-Dock Labor

Includes only contracted Off-the-Dock labor.

21 Electric Construction Contracts

Includes contracts obtained by bid or quote to do a specific package of work such as build transmission or distribution line or a substation or part thereof.

Does not include contract costs for major maintenance of, or construction of, new general plant such as storage yards, service facilities and general office buildings. Such costs should be budgeted at items 038 - Maintenance of Buildings and Improvements or 131 – Structures and Improvements to differentiate them from electric plant costs.

22 Contract Temporary Labor

Includes contract labor on a temporary basis for existing labor positions. These are for people that are paid through a job agency and are not paid through the District's payroll system.

23 Environmental

Includes those costs associated with environmental compliance, waste minimization, handling, storage and disposal of hazardous material or dangerous waste.

Some examples of expenses included here are:

*Fees paid to disposal firms
*Transportation costs
*Test kits

*Testing of materials
*Cleanup media
*Drums

Does not include, cost to repair or replace real or personal property damaged by an environmental occurrence. Examples of these types of costs are blacktop replacement, concrete, gravel dirt or repairs to personal property.

GENERAL EXPENSES:

25 Maintenance of Software

26 Computer Hardware & Equipment Expense

27 Personal Computer Software

All personal computer software packages.

28 Personal Computer O & M Costs

Includes all expenses related to the operation and maintenance of hardware equipment.

Some examples of expenses included here are:

*Replacement of cables
*Switches
*Connectors
*Cards
*Disk drives with like kind
*Maintenance contracts
*Phone line costs

29 Personal Computer Supplies & Expenses

Includes all purchases of plotter paper, forms, diskettes, tapes, cartridges, ribbons, pens, and miscellaneous supplies used on the computer.

30 Customer Service Expenses

Includes expenses attributable to Customer Service

Some examples of costs included here are:

*Armored Car dispatch
*Payments to Collections Stations (drugstores, etc.)
*Payments to Collection Agencies
*Padlocks - (meter readers)
*Special Forms (Cust. Accounting, Credit and Meter Reading)
*All postage expense

33 Office Supplies & Expenses

Some examples of expenses included here are:

*Small items of office equipment - less than **$5,000** unit cost
*Paper and envelopes
*General use forms
*Pencils, pens, erasers, rulers and misc. scales

34 Insurance

Includes the cost of insurance premiums including "Self-Insurance Assessments". It does not include the employee insurance premiums.

37 Grounds Care

Includes expenses for care of lawns and shrubbery at all office and substation locations.

38 Maintenance of Building & Improvements - General

Includes janitorial service, maintenance of buildings, and certain improvements to general property such as graveled and/or paved areas and fences.

Some examples of expenses included here are:

*Janitorial Services
*Painting and repairs to buildings and structures
*Adding gravel to graveled areas
*Patching paved areas
*Repairs to heating, air conditioning, electrical and water systems.
*Contracts for major repairs, including labor contract.

39 Maintenance of Equipment - Communication, Office Equipment, General Property & Other

Some examples of expenses that may be included here are:

*Cost of Maintenance Agreements/Office equipment maintenance repair
*Maintenance/repair of vehicle radios
*Maintenance of telephones
*Maintenance/repair of other general property not budgeted elsewhere, i.e., tools.

40 Rents

Includes all expenses for use of property and equipment not budgeted elsewhere.

Some examples of expenses included here are:

*Poles contact rentals
*Permits for railway crossings

41 Insurance Damages & Other Reimbursable

Costs paid to be reimbursed by insurance for damages to District property.

42 Business Expense & Travel

Includes all costs of meetings and travel that are for general business-related purposes.

Some examples of expenses included here are:

*Chamber of Commerce
*TRIDEC
*Kiwanis
*Rotary Club
*NoaNet
*CWPU
*PURMS
*Foreman's dinner
*Travel costs related to the evaluation/investigation of products or equipment.

43 Training Expense & Travel

Includes all costs (travel, registration fees, materials, etc.) for meetings, conferences, and seminars that provide training or educational sessions or speakers in a learning or networking environment related to your work:

Some examples of expenses included here are:

*Conferences of professional associations with break-out training sessions
*Sessions offering continuing education credits or units
*Vendor conferences
*Meter school
*APPA or NWPPA courses or seminars

44 Other General Expenses

Miscellaneous general expenses not budgeted elsewhere, including but not limited to:

*Miscellaneous advertising for bids, rate studies, surplus property, call for bonds, etc.
*Employee service pins and awards
*Special survey costs

45 Subscriptions & Publications

Included here are <u>all</u> books, reference texts and manuals, newspapers, magazines and other general informational publications.

Some examples of expenses included here are:

*Special manuals
*Reference manuals and services (R.C.W.'s, National Public Employee Reports, etc.)
*Directories
*Computer Services
*Westlaw Legal Service
*Other miscellaneous publications such as:
Kiplinger Letter
Northwest Wage & Hours Subscription
N.A.D.A. Subscription
Electric Power & Light
Clearing Up
Energy Omnium

46 Treasurer Expenses

Bank fees, escrow fees, and other expenses directly related to the Treasurer.

<u>UTILITIES:</u>

50 Telephone & Answering Services

Includes all expenses for use of telephone lines and answering services except those for remote computer terminals

Some examples of expenses included here are:

*Frontier/Embarg - Prosser
*Verizon NW - Kennewick
*Kelley's Answering Service

*City of Prosser - Emergency Answering Service
*Washington State Central Stores - Scan lines
*Asplund - Utilities Underground Location Center

51 Water, Garbage, Irrigation & Other

Includes expenses for water, garbage and irrigation assessments at all District locations.

Some examples of expenses included here are:

*Kennewick Disposal - Garbage
*City of Kennewick - Water and Sewer
*City of Prosser - Water
*Culligan - Water conditioning
*Irrigation Districts - Annual Assessments
*Special Assessments

OUTSIDE SERVICES:

60 Audit Examination - State

61 Professional Services

Includes expenses for all professional services not budgeted elsewhere.

Some examples of expenses included here are:

*Engineering studies
*Other attorney fees
*District share of labor negotiations office
*Arbitration costs
*Purchased surveying costs not identified to other budget items. These would include surveying costs incurred in conjunction with feasibility studies and would not include survey cost for acquisition of land and land rights for general plant, or survey costs for power line design.

DUES & ASSESSMENTS:

70 Civic & Service Organizations

72 Industry Association Assessments

Includes all assessments paid for membership in various industry associations.

73 Other Assessments

Includes all other assessments not budgeted above or elsewhere in the budget.

TAXES:

80 State Public Utility Tax & Other Excise Taxes

81 State Privilege Tax

82 City Occupation Taxes

88 Payroll Taxes

EMPLOYEE BENEFITS:

101 Employee Benefits

102 GASB Pension Expense

104 Other Employee Costs
Includes expenses made for the benefit of employees.
Some examples of expenses included here are:
*Purchase of tools supplied to employees
*School Reimbursements
*Medical exams

106 Vacation Accrual

CONSERVATION:

107 Residential Loans

108 Non-Reimbursed Conservation Costs
Includes the commercial program, flow restrictors, outlet gaskets, etc.

109 Conservation Advertising
Includes all conservation advertising costs.

111 Electric Vehicle
Includes all expenses incurred under the Electrification of Transportation Plan which was adopted by the commission on November 12, 2019, resolution 2521.

112 Residential Conservation Expenses
Includes the Weatherization, Heat Pump, Water Heater and Duct Sealing Programs.

113 Commercial Conservation Expenses
Includes small and medium general service and multi-family residential common area lighting improvements and small and medium general service building and equipment improvements.

114 Industrial Conservation Expense
Includes reimbursable program expenses for industrial customers.

115 Agriculture Conservation Expenses
Includes reimbursable program expenses only for the Agriculture programs.

116 Non-Federally Funded Conservation
Includes non-BPA reimbursable program expenses only for Washington State licensed marijuana facility conservation projects.

117 Customer Installed Measures

Includes reimbursable program expenses for washer, dryers, water heaters, along with lighting.

118 Low Income Conservation

Includes the Weatherization, Heat Pump, Water Heater and Duct Sealing Programs.

PUBLIC INFORMATION:

119 Public Information Expenses

Includes safety and promotional expenses sponsored by the District, such as radio spots, demonstrations and newspaper ads.

PURCHASED ELECTRIC PLANT & EQUIPMENT:

120 Substation Transformers & Regulators

Purchase of substation power transformers and regulators only.

121 Substation Equipment & Materials

Since substations as such are actually large pieces of electric equipment, it is intended that all expenses incurred for the construction of substations including work in progress purchases, which are not specifically budgeted elsewhere, shall be collected here.

Some examples of expenses included here are:

*Miscellaneous purchased labor
*Fencing materials or installed fencing
*Materials used in construction of substations such as gravel, concrete, bar stock, wiring and other materials not budgeted elsewhere

Does not include power transformers and regulators, substation demand meters and other metering devices for substations, labor contracted to build substations per bid or quote and Off-the-Dock labor.

122 Line Devices

Includes all expenses for protective and operational line equipment for transmission and distribution systems other than those line items included in substations.

Some examples of expenses included here are:

*Switches - line type only, except regulator bypass switches
*Cutouts
*Lightning arrestors (not included in the substation inventories)

123 Transformers & Related Items

Include only those items included in the distribution lines.

Some examples of expenses included here are:

*Distribution transformers
*Fiberglass enclosures
*Transformer vaults and pads (flat and with box)
*Miscellaneous installation of low value materials, unique to the items above.

124 Meters & Related Items

All meters and metering devices purchased by the District including substation metering, and related items.

Some examples of expenses included here are:

*Single phase demand and no demand meters
*Three phase demand and no demand meters
*Current transformers - including substation type
*Potential transformers - including substation type
*Demand registers - including substation type
*kW demand registers
*Compensators
*Enclosures
*Test switches - meter maintenance
*Miscellaneous materials used only in the installation of metering devices

125 Land & Land Rights - Electric

Includes all expenses associated with the acquisition of land and land rights for construction of electric plant.

Some examples of expenses included here are:

*Purchase price
*Taxes and escrow fees
*Survey and legal costs associated with the purchase of the land or land rights
*Other costs deemed necessary to obtain the property or rights

126 SCADA Master Station Equipment

Computers, monitors, printers, furniture, UPS, spare equipment, vendor support, remodeling costs.

127 SCADA Communications Equipment

Master radio, repeater radio, RTU radios, antennas, coax cables, spares and test equipment.

128 SCADA Substation Equipment

RTU transducers, cable, auxiliary relays, control modifications, enclosures, RTU test equipment.

129 SCADA Travel & Non-District Labor

Consists of vendor training costs, travel expenses, consultants, BPA - metering modifications, contract labor.

PURCHASED GENERAL PLANT & EQUIPMENT:

130 Land & Land Rights - General

Includes all expenses for the acquisition of land and land rights for the construction of office and operations facilities.

Some examples of expenses included here are:

*Purchase price

*Taxes and escrow fees
*Survey and legal costs associated with the purchase of the property or rights
*Other costs deemed necessary to obtain the property or rights

131 Structures & Improvements

Include expenses for the construction of buildings and the improvement of lands, buildings or other structures.

Some examples of expenses included here are:

*Site improvement costs, such as grading, graveling, paving and landscaping
*Costs to build buildings or structures
*Improvements to buildings or structures
*Surveying costs associated with development of improvement

132 Office Equipment

Includes all expenses for office furniture and equipment with a value of $5,000 or more.

133 Transportation Equipment

Includes all expenses for motor driven or towed vehicles including any ancillary or auxiliary equipment attached to the vehicle with a value of $5,000 or more.

The term vehicle includes:

*Automobiles
*Trucks
*Trailers
*Backhoes
*Forklifts

134 Tools, Shop & Stores Equipment

Includes the cost of tools and equipment with a value of $5,000 or more and purchased to accounts 393.00 - Stores Equipment or 394.00 - Tools, Shop and Garage Equipment.

Some items included here are:

*Stores cabinets and bins
*Work benches
*Shelving
*Tools for use in the Auto Shop, Meter Shop, Transformer Shop, Warehouse, Line Crews, and equipment used by same, but not specialized calibration and test equipment included at 135 below

135 Laboratory & Test Equipment

Includes the cost of specialized tools and equipment purchased to account 395.00 - Laboratory Equipment having a unit value of $5,000 or more.

Tools and equipment included here are of a type used to calibrate and/or test other tools or equipment items of electric plant such as meters, transformers, etc.

136 Communication Equipment

Includes the expense of all types of communication equipment purchased to account 397.00 - Communications Equipment, having a value of $5,000 or more

Some items included here are:

*The telephone system
*Portable and mobile radios
*Radio base stations

Does not include communication equipment for linking information systems equipment together.

137 Capitalized Computer Software

138 Computer Equipment

Personal computers will be identified as a personal computer system and will normally include items such as keyboards, monitors, printers, modems, digitizers, plotters, etc.

All auxiliary equipment, such as that specified above, will be identified to a personal computer. If the total cost of the computer together with the auxiliary equipment identified to it costs or will cost $5,000 or more, this will constitute a capital purchase and the items will be capitalized in account 391.00. Items added after initial purchase of a computer will be capitalized with the computer for which they are acquired. This will include replacing a floppy disk drive with a hard drive, network cards, etc.

139 Miscellaneous General Plant

Includes the cost of equipment purchased to account 398.00 Miscellaneous Equipment, having a value of $5,000 or more. Equipment included here is usually not necessary to the operation of the business.

Some examples of expenses included here are:

*Cameras
*Other miscellaneous items

140 Generation Plant & Equipment

DEBT SERVICE:

150 Principal

Includes payment made to retire debt.

151 Interest

153 Provision for Bond Reserve

Includes monies set aside in special deposits or investments to insure payment of bond debts.

PRODUCTS & SERVICES EXPENSES:

200 New Services Expenses

Expenses related to providing services that the District offers customers. **These are services not related to the sale or delivery of energy.**

Some examples of expenses included here are:

*Postage for Mail Service for other companies
*Supplies for Glove Testing provided other utilities
*Supplies for Maintenance of Substations belonging to other utilities

*Home and Building Inspection expenses (non-Public Purpose)
*Advertising and Marketing expense including fees associated with “Home Shows” etc.

201 New Product Expenses

Expenses incurred in obtaining, selling, merchandising, and advertising products to consumers.

Some examples of expenses included here are:

*Purchase cost of light bulbs, appliances, surge suppressors, etc.
*Display booths
*Advertising and Marketing expense including fees associated with Home Show, Fair, etc.

202 Mutual Aid & Other Reimbursable Expenses

Non-labor expenses incurred by the District in providing mutual aid or maintenance and repair work to other utilities except for Maintenance of Substations (see 200).

Some examples of expenses included here are:

*Travel expenses
*Fuel
*Other miscellaneous costs

OTHER MISCELLANEOUS EXPENSES:

301 Depreciation Expense

302 Amortized Conservation

303 WCEF Expense

This is the expense for the one-time credit that residential customers will receive on their bill and the payment to the Housing Authority for weatherization.

304 Grant Expense

REVENUE:

501 Retail Energy Sales

502 City Occupation Taxes

503 Bad Debt Expense

505 Wholesale Power Sales Revenue

510 Wholesale Transmission & Wheeling Sales

515 Interest and Investment Income

520 Electric Services Installation Revenue

523 Pole Contact Rent Revenue

*Pole Contact Rental
*Pole Contact Application Fees

525 Capital Contributions

530 Property Rental Revenue

*Rent of Electric Property
*Auditorium Rent

535 Microwave Site Rental

545 Other Electric Revenue

*NSF check charges
*Electric account service charge
*Collection of write-offs

546 Miscellaneous Non-Electric Revenue

547 WCEF Settlement Revenue

This is the Washington Consumer Energy Fund settlement. A portion of the settlement will be given to the Housing Authority for weatherization. The remaining funds will be given back to residential customers as a one-time credit on their bill.

548 Grant Revenue

549 SWIFT Grant Revenue

550 Products & Services Revenue

*Substation Maintenance and Repair for other Utilities
*Meter Shop Revenue
*Glove Testing
*Mail Service
*Sale of Products (light bulbs, surge suppressors, etc.)
*Energy Service Revenue (building inspection fees, etc.)
*Block Heater Rental

560 Insurance Claim Revenue

570 Reserves (Gain or Loss)

ADDITIONS & USAGE OF INVENTORY: (for use in controlling the growth of Inventory)

994 Reel Deposits

996 CT Inventory

997 Substation Inventory

998 Fiber Optic Inventory

999 Non-Exempt Inventory

Financial Plan

Tab 7

2023 BUDGET
FINANCIAL PLAN - KEY ASSUMPTIONS

The Financial Plan for 2023 is based on these key assumptions:

GENERAL

- Conservative assumptions have been used in the development of the financial plan in accordance with the District's Financial Policies and prudent utility practice.
- The financial plan is based on accrued revenues and costs. To derive end-of-year cash balances, amounts are adjusted to remove non-cash items, to add non-cost cash items and to account for timing differences between accrued cost and cash.

REVENUES

- The 2023 Budget reflects no rate increase.
- Retail energy sales are based on the Retail Energy Load Ten-Year Forecast, which uses regression modeling to establish a relationship between annual load, weather, and economic variables. The most recent Ten-Year Load Forecast was approved by the Commission on April 26, 2022 (see Tab 8).
- Sales for Resale are consistent with the 2023 Power Supply Plan.

POWER & TRANSMISSION COSTS *(see Tab 10, 2023 Power Supply Plan, Section 4, for more details)*

- **Starting October 1, 2023, the District's contract with BPA will switch from a Block/Slice contract to a Load Following Contract.**
  - The District is making the change to a Load Following contract to mitigate the District's risk from increasing market prices, market price excursions that can cost millions of dollars over a multi-day period, and potential future shortages of physical power all caused by resource adequacy concerns.
- **The District's net power cost is estimated using a "Risk Model or Probability of Occurrence Forecast."**
  - The purpose of the Risk Model is to define the distribution of possible outcomes taking into account changes in power cost variables.
  - The model is run 1,000 times to produce a probability curve of net power cost.
  - A conservative assumption of the 25th percentile of probability is used for budgeting purposes. Thus 75% of the model's net power cost outcomes were equal to or less than the budgeted net power cost.
  - The net power cost budget details are developed by choosing a single model result of occurrence at the 25th percentile of probability point and using its detail information.

FINANCIAL PLAN - KEY ASSUMPTIONS
(CONTINUED)

- **Within the model, known variables were included as follows:**
  - Power costs reflect BPA's Tiered Rate Methodology.
  - The forecast includes an irrigation mitigation annual benefit of $3.4 million.
  - Net conservation program costs after reimbursement from BPA are expected to be $0.3 million.
  - No Cost Recovery Adjustment Clause (CRAC) is assumed.
  - Court ordered additional spill costs are included in BPA's rates for 2023.
  - No slice true-up credit is assumed.
  - BPA Reserves Distribution Clause credit of $6.1 million in CY 2023.
  - Power cost forecast includes the estimated cost to meet the requirements of the Energy Independence Act (EIA).
  - No carbon cap and trade impact included in power forecast.

FINANCING

- No debt issuance is assumed in this forecast.
- Short-term borrowing may be used, if needed, to maintain cash flow requirements, but none is projected.

CAPITAL

- Capital is based on the District's five-year Capital Requirement Plan (see Tab 9).

Comparative Operating Statement
Public Utility District No. 1 of Benton County
2023 Budget

	2021 Actual[1]	2022 Forecast	2023 Budget
Revenue Action Budget Assumption *For planning purposes only, any future rate action would require Commission approval*			**0.00%**
OPERATING REVENUES			
Energy Sales - Retail	$ 137,165,987	$ 136,838,961	$ 137,198,445
Energy Secondary Market Sales	32,552,734	30,514,599	10,729,262
Transmission of Power for Others	957,726	1,376,996	915,346
Broadband Revenue	2,914,271	2,844,142	2,910,308
Other Electric Revenue	1,243,439	1,409,982	1,575,349
TOTAL OPERATING REVENUES	174,834,157	172,984,680	153,328,710
OPERATING EXPENSES			
Purchased Power	102,522,650	95,776,506	60,312,594
Purchased Transmission & Ancillary Services	14,692,369	15,997,408	22,394,594
Conservation	(116,933)	252,810	373,452
Total Power Supply	117,098,086	112,026,724	83,080,640
Transmission Operation & Maintenance	101,234	176,185	168,909
Distribution Operation & Maintenance	9,200,423	12,310,648	13,371,383
Broadband Expense	1,115,157	1,256,736	1,192,566
Customer Accounting, Collections & Information	3,926,097	4,921,739	4,994,528
Administrative & General	6,880,784	8,556,230	9,222,397
Subtotal before Taxes & Depreciation	21,223,695	27,221,538	28,949,783
Taxes	14,316,277	14,741,000	14,712,000
Depreciation & Amortization	10,978,658	10,538,140	11,232,810
Total Other Operating Expenses	46,518,630	52,500,678	54,894,593
TOTAL OPERATING EXPENSES	163,616,716	164,527,402	137,975,233
OPERATING INCOME (LOSS)	11,217,441	8,457,278	15,353,477
NONOPERATING REVENUES & EXPENSES			
Interest Income	442,988	500,000	600,000
Unrealized Gain/(Loss) on Investments	-	-	-
Other Income (includes BABs subsidy)	377,715	412,198	336,486
Interest Expense	(2,929,065)	(2,826,486)	(2,717,067)
Debt Premium/Discount & Expense Amortization	342,996	402,824	422,897
TOTAL NONOPERATING REVENUES & EXPENSES	(1,765,366)	(1,511,464)	(1,357,684)
NET INCOME (LOSS) BEFORE CONTRIBUTIONS	9,452,075	6,945,814	13,995,793
CAPITAL CONTRIBUTIONS	2,145,749	3,429,102	3,113,466
CHANGE IN NET ASSETS	**$ 11,597,824**	**$ 10,374,916**	**$ 17,109,259**
CAPITAL REQUIREMENTS PLAN (Gross)	**$ 18,766,933**	**$ 22,433,814**	**$ 29,868,765**
UNRESTRICTED RESERVES (End of Year)	**$ 58,484,139**	**$ 53,965,342**	**$ 49,680,262**

Liquidity Measures
Public Utility District No. 1 of Benton County
2023 Budget

Unrestricted Reserves	2021 Actual1	2022 Forecast	2023 Budget
BEGINNING BALANCE	$ 60,051,016	$ 58,484,139	$ 53,965,342
Revenues (excluding sales for resale)	142,144,400	142,005,283	142,620,588
Capital Contributions	2,145,749	3,429,102	3,113,466
Operating Expenses*	(122,050,415)	(122,497,667)	(115,297,815)
Amortization of White Creek	578,400	578,400	578,400
Debt Service and LOC	(6,056,820)	(6,038,843)	(5,869,696)
Gross Capital	(18,766,933)	(22,433,814)	(29,868,765)
BPA Prepay	438,742	438,742	438,742
ENDING BALANCE	**$ 58,484,139**	**$ 53,965,342**	**$ 49,680,262**

** Operating expenses include gross power expense and exclude depreciation*

Days Cash on Hand	2021 Actual1	2022 Forecast	2023 Budget
Unrestricted Reserves	$ 58,484,139	$ 53,965,342	$ 49,680,262
Construction Account	-	-	-
Total Reserves	$ 58,484,139	$ 53,965,342	$ 49,680,262
Gross Power Expense	117,098,086	112,026,724	83,080,640
Non-Power Operating Expenses	46,518,630	52,500,678	54,894,593
Depreciation	(10,978,658)	(10,538,140)	(11,232,810)
Amortization of White Creek/BPA Prepay	(1,017,142)	(1,017,142)	(1,017,142)
Operating Expenses (cash basis)	$ 151,620,916	$ 152,972,120	$ 125,725,281
DAYS CASH ON HAND (Unrestricted Reserves)	**141**	**129**	**144**
DAYS CASH ON HAND (Construction Account)	**0**	**0**	**0**
TOTAL DAYS CASH ON HAND	**141**	**129**	**144**

Days Liquidity on Hand	2021 Actual1	2022 Forecast	2023 Budget
Unrestricted Reserves + $10M LOC	$ 68,484,139	$ 63,965,342	$ 59,680,262
Operating Expenses (cash basis)	$ 151,620,916	$ 152,972,120	$ 125,725,281
DAYS LIQUIDITY ON HAND	**165**	**153**	**173**

Debt Measures
Public Utility District No. 1 of Benton County
2023 Budget

Debt Service Coverage	2021 Actual1	2022 Forecast	2023 Budget
Change in Net Assets	$ 11,597,824	$ 10,374,916	$ 17,109,259
Depreciation	10,978,658	10,538,140	11,232,810
Amortization of White Creek	578,400	578,400	578,400
Amortization of BPA Prepay	438,742	438,742	438,742
GASB 68 Pension Expense	(3,711,285)	-	-
Interest Expense	2,586,069	2,423,662	2,294,170
Funds Available for Debt Service (FADS)	$ 22,468,408	$ 24,353,860	$ 31,653,381
Debt Service	$ 5,995,376	$ 5,998,843	$ 5,829,696
DSC with capital contributions (Target = 2.0)	**3.75**	**4.06**	**5.43**
DSC without capital contributions (Target = 1.75)	**3.39**	**3.49**	**4.90**

Fixed Charge Coverage	2021 Actual1	2022 Forecast	2023 Budget
Change in Net Assets	$ 11,597,824	$ 10,374,916	$ 17,109,259
Depreciation	10,978,658	10,538,140	11,232,810
Amortization of White Creek	578,400	578,400	578,400
Amortization of BPA Prepay	438,742	438,742	438,742
GASB 68 Pension Expense	(3,711,285)	-	-
Interest Expense	2,586,069	2,423,662	2,294,170
Frederickson Fixed Costs	7,546,273	5,282,821	-
33% of BPA Power & Transmission	25,815,619	23,242,726	21,137,185
Adjusted FADS	$ 55,830,300	$ 52,879,407	$ 52,790,566
Debt Service	$ 5,995,376	$ 5,998,843	$ 5,829,696
Frederickson Fixed Costs	7,546,273	5,282,821	-
33% of BPA Power & Transmission	25,815,619	23,242,726	21,137,185
Debt Service & Fixed Charges	$ 39,357,268	$ 34,524,390	$ 26,966,881
FCC Ratio (Target = 1.3)	**1.42**	**1.53**	**1.96**

Debt Ratio	2021 Actual1	2022 Forecast	2023 Budget
Revenue Bonds Outstanding	$ 60,195,000	$ 57,000,000	$ 53,870,000
Capitalization (bonds + net assets)	$ 216,106,609	$ 223,286,526	$ 237,320,398
Debt Ratio	**28%**	**26%**	**23%**

Public Utility District No. 1 Of Benton County, Washington
2022 - 2026 Retail Revenue and Kilowatt Hours (kWh) Forecast
(October 2022 Forecast)

Forecast - 2022	Revenues	kWh
Residential	$65,380,228	747,299,714
Small Gen. Service	9,055,734	118,486,980
Medium Gen. Service	13,220,369	183,157,363
Large Gen. Service	16,003,616	244,759,131
Large Industrial	3,479,088	65,386,996
Small Ag Irrigation	1,005,704	14,350,504
Large Ag. Irrigation	21,805,340	372,717,875
Street Lighting	219,079	2,536,787
Security Lighting	244,292	807,113
Unmetered Accounts	212,877	2,998,464
TOTAL	**$130,626,327**	**1,752,500,929**

Forecast - 2023	Revenues	kWh
Residential	$64,528,817	732,816,941
Small Gen. Service	9,027,988	117,553,248
Medium Gen. Service	13,185,463	183,900,894
Large Gen. Service	15,873,054	246,780,248
Large Industrial	3,425,550	64,298,493
Small Ag Irrigation	1,055,745	15,198,112
Large Ag. Irrigation	23,249,810	418,652,152
Street Lighting	219,864	2,391,508
Security Lighting	268,556	846,486
Unmetered Accounts	214,639	3,023,091
TOTAL	**$131,049,487**	**1,785,461,173**

Forecast - 2024	Revenues	kWh
Residential	$65,173,384	739,520,923
Small Gen. Service	9,004,887	117,077,533
Medium Gen. Service	13,182,910	184,025,965
Large Gen. Service	16,055,210	248,799,830
Large Industrial	3,434,666	64,470,318
Small Ag Irrigation	1,055,042	15,191,775
Large Ag. Irrigation	23,183,695	419,787,360
Street Lighting	219,864	2,544,538
Security Lighting	268,556	902,903
Unmetered Accounts	215,770	3,039,012
TOTAL	**$131,793,986**	**1,795,360,158**

Forecast - 2025	Revenues	kWh
Residential	$65,523,644	742,132,197
Small Gen. Service	8,939,940	115,969,153
Medium Gen. Service	13,236,461	184,890,344
Large Gen. Service	16,292,181	252,051,930
Large Industrial	3,425,454	64,296,684
Small Ag Irrigation	1,046,367	15,066,530
Large Ag. Irrigation	23,122,385	418,640,400
Street Lighting	219,864	2,544,538
Security Lighting	268,556	902,903
Unmetered Accounts	216,954	3,055,683
TOTAL	**$132,291,806**	**1,799,550,364**

Forecast - 2026	Revenues	kWh
Residential	$66,029,124	746,843,865
Small Gen. Service	8,896,247	115,181,363
Medium Gen. Service	13,184,724	184,032,915
Large Gen. Service	16,302,367	252,159,382
Large Industrial	3,425,638	64,300,159
Small Ag Irrigation	1,041,898	15,004,008
Large Ag. Irrigation	23,122,385	418,640,400
Street Lighting	219,864	2,391,508
Security Lighting	268,556	804,544
Unmetered Accounts	218,111	3,071,979
TOTAL	**$132,708,914**	**1,802,430,124**

Total kWh for 2022-2026

Actual (January - September 2022)

Total kWh 2022	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential	103,772,314	84,304,461	64,190,961	51,533,952	44,695,254	41,947,434	53,885,368	69,582,763	58,568,849	41,097,089	56,849,877	76,871,392	747,299,714
Small Gen. Service	12,125,142	10,914,625	9,434,791	8,345,107	8,218,371	8,581,198	9,995,985	12,194,996	11,123,372	8,396,326	8,891,501	10,265,566	118,486,980
Medium Gen. Service	16,950,481	15,635,650	14,465,577	13,376,411	13,439,843	14,103,903	15,207,437	17,711,611	17,036,093	14,897,132	15,139,991	15,193,235	183,157,363
Large Gen. Service	20,396,880	19,384,840	18,251,920	19,457,540	18,131,960	18,972,520	20,138,900	24,321,720	24,165,560	21,551,811	20,520,130	19,465,351	244,759,131
Large Industrial	5,532,240	5,068,560	5,216,720	5,242,840	5,388,920	5,058,960	5,790,440	5,764,360	5,532,360	5,769,810	5,318,612	5,703,175	65,386,996
Small Ag Irrigation	85,255	63,785	204,236	712,576	1,311,807	2,142,610	3,141,604	3,175,836	2,389,224	946,637	125,082	51,853	14,350,504
Large Ag. Irrigation	192,344	214,770	9,582,488	19,468,671	31,758,609	57,388,818	96,363,638	88,556,369	47,384,824	18,656,470	2,863,948	286,927	372,717,875
Street Lighting	211,859	211,849	211,005	211,005	211,030	210,995	210,995	210,980	210,892	212,053	212,058	212,067	2,536,787
Security Lighting	66,970	66,256	65,719	65,003	64,800	64,544	64,226	63,954	63,508	74,348	73,969	73,816	807,113
Unmetered Accounts	248,973	248,973	248,973	248,973	248,973	249,058	249,155	250,488	251,070	252,731	252,158	248,939	2,998,464
TOTAL Retail kWh SALES:	**159,582,458**	**136,113,769**	**121,872,390**	**118,662,078**	**123,469,567**	**148,720,040**	**205,047,748**	**221,833,077**	**166,725,752**	**111,854,406**	**110,247,324**	**128,372,320**	**1,752,500,929**

Total kWh 2023	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential	87,222,741	82,601,388	77,272,904	53,148,573	41,051,423	46,646,082	53,522,928	62,990,003	52,417,218	41,361,636	57,215,825	77,366,221	732,816,941
Small Gen. Service	10,899,035	10,730,358	9,877,553	8,574,967	8,455,399	9,536,201	10,232,914	11,483,314	10,384,195	8,343,279	8,835,325	10,200,709	117,553,248
Medium Gen. Service	15,714,354	15,224,674	14,458,031	13,892,546	14,150,159	15,436,080	15,783,358	17,292,106	16,327,556	15,026,133	15,271,095	15,324,800	183,900,894
Large Gen. Service	19,778,241	19,162,530	18,505,584	18,937,794	19,672,396	20,642,849	21,117,691	23,926,082	22,635,959	21,854,344	20,808,181	19,738,596	246,780,248
Large Industrial	5,529,771	5,097,441	5,738,641	5,373,619	4,466,197	5,342,412	4,871,525	5,692,409	5,393,973	5,770,122	5,318,899	5,703,483	64,298,493
Small Ag Irrigation	61,706	44,003	173,668	639,582	2,094,638	2,756,183	3,257,978	2,989,710	2,062,155	942,355	124,516	51,618	15,198,112
Large Ag. Irrigation	276,393	386,227	4,888,745	21,332,540	61,515,670	97,088,623	104,320,455	74,606,120	32,460,212	18,630,653	2,859,985	286,529	418,652,152
Street Lighting	199,090	199,263	199,379	199,290	199,288	199,299	199,298	199,344	199,341	199,300	199,304	199,313	2,391,508
Security Lighting	71,237	70,955	72,475	71,255	71,035	70,678	70,434	70,160	70,004	69,703	69,347	69,204	846,486
Unmetered Accounts	252,460	252,861	254,139	250,893	250,981	251,114	251,139	251,163	249,741	254,331	253,755	250,515	3,023,091
TOTAL Retail kWh SALES:	**140,005,028**	**133,769,699**	**131,441,120**	**122,421,059**	**151,927,186**	**197,969,519**	**213,627,720**	**199,500,412**	**142,200,354**	**112,451,855**	**110,956,232**	**129,190,989**	**1,785,461,173**

Total kWh 2024	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential	88,020,675	83,357,045	77,979,814	53,634,788	41,426,971	47,072,811	54,012,568	63,566,251	52,896,743	41,740,022	57,739,249	78,073,986	739,520,923
Small Gen. Service	10,854,929	10,686,934	9,837,580	8,540,266	8,421,182	9,497,610	10,191,503	11,436,844	10,342,172	8,309,515	8,799,570	10,159,429	117,077,533
Medium Gen. Service	15,725,042	15,235,028	14,467,864	13,901,994	14,159,783	15,446,578	15,794,092	17,303,866	16,338,660	15,036,353	15,281,481	15,335,223	184,025,965
Large Gen. Service	19,940,101	19,319,351	18,657,029	19,092,776	19,833,389	20,811,784	21,290,513	24,121,886	22,821,206	22,033,194	20,978,469	19,900,131	248,799,830
Large Industrial	5,544,549	5,111,063	5,753,977	5,387,979	4,478,132	5,356,689	4,884,543	5,707,621	5,408,388	5,785,541	5,333,113	5,718,725	64,470,318
Small Ag Irrigation	61,680	43,985	173,596	639,316	2,093,765	2,755,033	3,256,619	2,988,464	2,061,295	941,962	124,464	51,597	15,191,775
Large Ag. Irrigation	277,143	387,274	4,902,001	21,390,385	61,682,475	97,351,887	104,603,328	74,808,420	32,548,230	18,681,172	2,867,740	287,306	419,787,360
Street Lighting	211,829	212,014	212,137	212,042	212,040	212,052	212,051	212,100	212,097	212,053	212,058	212,067	2,544,538
Security Lighting	75,985	75,684	77,306	76,004	75,769	75,388	75,129	74,837	74,670	74,348	73,969	73,816	902,903
Unmetered Accounts	253,789	254,193	255,478	252,214	252,303	252,436	252,462	252,485	251,056	255,670	255,091	251,834	3,039,012
TOTAL Retail kWh SALES:	**140,965,721**	**134,682,570**	**132,316,782**	**123,127,765**	**152,635,808**	**198,832,267**	**214,572,808**	**200,472,774**	**142,954,516**	**113,069,829**	**111,665,204**	**130,064,113**	**1,795,360,158**

Total kWh 2025	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential	88,331,479	83,651,381	78,255,164	53,824,175	41,573,251	47,239,027	54,203,289	63,790,705	53,083,523	41,887,407	57,943,128	78,349,668	742,132,197
Small Gen. Service	10,752,165	10,585,760	9,744,447	8,459,415	8,341,458	9,407,695	10,095,019	11,328,570	10,244,262	8,230,848	8,716,264	10,063,249	115,969,153
Medium Gen. Service	15,798,903	15,306,588	14,535,821	13,967,293	14,226,292	15,519,132	15,868,278	17,385,144	16,415,404	15,106,979	15,353,259	15,407,253	184,890,344
Large Gen. Service	20,200,741	19,571,877	18,900,898	19,342,341	20,092,634	21,083,818	21,568,804	24,437,187	23,119,505	22,321,194	21,252,682	20,160,249	252,051,930
Large Industrial	5,529,616	5,097,298	5,738,480	5,373,468	4,466,071	5,342,262	4,871,388	5,692,249	5,393,821	5,769,959	5,318,750	5,703,323	64,296,684
Small Ag Irrigation	61,171	43,622	172,165	634,045	2,076,503	2,732,320	3,229,771	2,963,826	2,044,301	934,196	123,438	51,171	15,066,530
Large Ag. Irrigation	276,386	386,216	4,888,608	21,331,941	61,513,943	97,085,898	104,317,526	74,604,025	32,459,300	18,630,130	2,859,904	286,521	418,640,400
Street Lighting	211,829	212,014	212,137	212,042	212,040	212,052	212,051	212,100	212,097	212,053	212,058	212,067	2,544,538
Security Lighting	75,985	75,684	77,306	76,004	75,769	75,388	75,129	74,837	74,670	74,348	73,969	73,816	902,903
Unmetered Accounts	255,182	255,587	256,879	253,598	253,687	253,821	253,847	253,870	252,433	257,073	256,490	253,216	3,055,683
TOTAL Retail kWh SALES:	**141,493,456**	**135,186,027**	**132,781,903**	**123,474,321**	**152,831,649**	**198,951,412**	**214,695,101**	**200,742,514**	**143,299,317**	**113,424,187**	**112,109,943**	**130,560,532**	**1,799,550,364**

Total kWh 2026	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential	88,892,280	84,182,469	78,751,992	54,165,895	41,837,192	47,538,939	54,547,416	64,195,701	53,420,541	42,153,343	58,310,999	78,847,096	746,843,865
Small Gen. Service	10,679,124	10,513,850	9,678,252	8,401,949	8,284,794	9,343,788	10,026,443	11,251,614	10,174,672	8,174,935	8,657,053	9,994,888	115,181,363
Medium Gen. Service	15,725,635	15,235,603	14,468,411	13,902,519	14,160,318	15,447,162	15,794,689	17,304,520	16,339,277	15,036,921	15,282,059	15,335,802	184,032,915
Large Gen. Service	20,209,353	19,580,221	18,908,955	19,350,586	20,101,200	21,092,806	21,577,999	24,447,605	23,129,361	22,330,709	21,261,742	20,168,843	252,159,382
Large Industrial	5,529,915	5,097,573	5,738,790	5,373,758	4,466,313	5,342,550	4,871,651	5,692,557	5,394,113	5,770,271	5,319,037	5,703,631	64,300,159
Small Ag Irrigation	60,918	43,441	171,450	631,414	2,067,886	2,720,982	3,216,368	2,951,527	2,035,818	930,319	122,926	50,959	15,004,008
Large Ag. Irrigation	276,386	386,216	4,888,608	21,331,941	61,513,943	97,085,898	104,317,526	74,604,025	32,459,300	18,630,130	2,859,904	286,521	418,640,400
Street Lighting	199,090	199,263	199,379	199,290	199,288	199,299	199,298	199,344	199,341	199,300	199,304	199,313	2,391,508
Security Lighting	67,707	67,439	68,884	67,724	67,515	67,176	66,944	66,684	66,535	66,249	65,911	65,775	804,544
Unmetered Accounts	256,543	256,950	258,249	254,950	255,040	255,174	255,201	255,224	253,780	258,444	257,858	254,566	3,071,979
TOTAL Retail kWh SALES:	**141,896,950**	**135,563,027**	**133,132,971**	**123,680,028**	**152,953,489**	**199,093,774**	**214,873,535**	**200,968,803**	**143,472,739**	**113,550,621**	**112,336,794**	**130,907,395**	**1,802,430,124**

Total Revenue for 2022-2026

Actual (January - September 2022)

Total Revenue 2022	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential	$8,499,698	$7,056,337	$5,523,719	$4,667,268	$4,138,560	$3,969,588	$4,819,048	$6,001,432	$5,193,666	$3,911,393	$5,045,135	$6,554,384	$65,380,228
Small Gen. Service	906,953	825,599	697,687	649,042	646,554	674,216	763,514	912,736	842,274	661,693	690,366	785,099	9,055,734
Medium Gen. Service	1,204,343	1,109,450	1,066,316	931,261	973,003	1,019,735	1,108,400	1,274,399	1,268,908	1,092,141	1,090,200	1,082,213	13,220,369
Large Gen. Service	1,314,871	1,264,787	1,235,365	1,295,154	1,195,859	1,246,130	1,329,061	1,586,672	1,584,017	1,389,253	1,317,537	1,244,910	16,003,616
Large Industrial	296,050	274,295	280,544	277,283	288,196	274,765	304,153	301,833	295,797	302,750	283,698	299,724	3,479,088
Small Ag Irrigation	7,744	7,908	24,952	62,777	99,054	145,613	199,483	201,389	157,607	77,770	14,334	7,074	1,005,704
Large Ag. Irrigation	114,819	118,075	788,463	1,417,024	2,040,907	3,261,183	4,977,930	4,635,813	2,745,135	1,269,823	316,794	119,374	21,805,340
Street Lighting	18,273	18,272	18,204	18,224	18,226	18,223	18,224	18,228	18,239	18,322	18,322	18,322	219,079
Security Lighting	19,981	19,894	19,857	19,695	19,670	19,630	19,523	19,492	19,411	22,380	22,380	22,380	244,292
Unmetered Accounts	17,659	17,678	17,677	17,678	17,678	17,683	17,690	17,785	17,827	17,944	17,903	17,675	212,877
TOTAL REVENUE:	**$12,400,391**	**$10,712,295**	**$9,672,784**	**$9,355,406**	**$9,437,707**	**$10,646,766**	**$13,557,026**	**$14,969,779**	**$12,142,881**	**$8,763,467**	**$8,816,669**	**$10,151,155**	**$130,626,327**

Total Revenue 2023	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential	$7,323,306	$6,894,023	$6,585,221	$4,775,395	$3,913,730	$4,297,477	$4,839,035	$5,539,774	$4,729,844	$3,943,395	$5,084,223	$6,603,395	$64,528,817
Small Gen. Service	827,266	805,732	759,000	669,351	665,245	733,539	783,364	866,583	790,165	658,896	687,333	781,515	9,027,988
Medium Gen. Service	1,108,889	1,077,683	1,041,129	994,409	1,024,766	1,110,179	1,130,507	1,225,111	1,192,919	1,097,339	1,095,298	1,087,234	13,185,463
Large Gen. Service	1,251,497	1,225,485	1,189,589	1,216,453	1,277,910	1,340,801	1,364,534	1,533,533	1,465,734	1,408,871	1,336,145	1,262,503	15,873,054
Large Industrial	291,919	278,235	299,172	285,455	248,448	284,169	266,821	298,559	286,553	302,766	283,713	299,741	3,425,550
Small Ag Irrigation	7,703	6,489	20,108	59,717	143,592	179,800	206,898	192,426	140,312	77,409	14,260	7,032	1,055,745
Large Ag. Irrigation	120,584	142,465	488,787	1,386,215	3,343,753	4,995,081	5,299,709	3,982,084	1,894,695	1,239,092	277,752	79,595	23,249,810
Street Lighting	18,322	18,322	18,322	18,322	18,322	18,322	18,322	18,322	18,322	18,322	18,322	18,322	219,864
Security Lighting	22,380	22,380	22,380	22,380	22,380	22,380	22,380	22,380	22,380	22,380	22,380	22,380	268,556
Unmetered Accounts	17,925	17,953	18,044	17,813	17,820	17,829	17,831	17,833	17,732	18,057	18,017	17,787	214,639
TOTAL REVENUE:	**$10,989,789**	**$10,488,767**	**$10,441,751**	**$9,445,510**	**$10,675,965**	**$12,999,574**	**$13,949,401**	**$13,696,604**	**$10,558,655**	**$8,786,526**	**$8,837,442**	**$10,179,503**	**$131,049,487**

Total Revenue 2024	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential	$7,394,879	$6,961,285	$6,650,029	$4,823,528	$3,954,122	$4,341,249	$4,887,908	$5,595,063	$4,777,598	$3,984,088	$5,135,218	$6,668,419	$65,173,384
Small Gen. Service	825,057	803,498	757,061	667,740	663,692	731,673	781,336	864,222	788,075	657,380	685,657	779,498	9,004,887
Medium Gen. Service	1,108,654	1,077,419	1,040,970	994,256	1,024,629	1,109,952	1,130,281	1,224,802	1,192,664	1,097,173	1,095,082	1,087,027	13,182,910
Large Gen. Service	1,265,939	1,239,570	1,203,266	1,230,430	1,292,546	1,356,141	1,380,172	1,551,122	1,482,498	1,425,018	1,351,482	1,277,027	16,055,210
Large Industrial	292,695	278,975	299,968	286,215	249,109	284,925	267,531	299,354	287,316	303,572	284,468	300,538	3,434,666
Small Ag Irrigation	7,678	6,467	20,077	59,670	143,510	179,703	206,789	192,323	140,232	77,354	14,232	7,007	1,055,042
Large Ag. Irrigation	78,362	100,303	447,564	1,389,806	3,352,652	5,008,457	5,313,912	3,992,713	1,899,664	1,242,283	278,337	79,643	23,183,695
Street Lighting	18,322	18,322	18,322	18,322	18,322	18,322	18,322	18,322	18,322	18,322	18,322	18,322	219,864
Security Lighting	22,380	22,380	22,380	22,380	22,380	22,380	22,380	22,380	22,380	22,380	22,380	22,380	268,556
Unmetered Accounts	18,019	18,048	18,139	17,907	17,913	17,923	17,925	17,926	17,825	18,153	18,111	17,880	215,770
TOTAL REVENUE:	**$11,031,985**	**$10,526,266**	**$10,477,776**	**$9,510,254**	**$10,738,874**	**$13,070,724**	**$14,026,555**	**$13,778,227**	**$10,626,573**	**$8,845,723**	**$8,903,288**	**$10,257,741**	**$131,793,986**

Total Revenue 2025	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential	$7,431,141	$6,995,078	$6,683,631	$4,850,392	$3,978,261	$4,366,438	$4,915,384	$5,625,047	$4,804,391	$4,008,405	$5,163,270	$6,702,207	$65,523,644
Small Gen. Service	818,968	797,442	751,607	663,077	659,130	726,412	775,665	857,771	782,287	652,896	680,836	773,849	8,939,940
Medium Gen. Service	1,113,143	1,081,757	1,045,228	998,323	1,028,834	1,114,453	1,134,868	1,229,726	1,197,493	1,101,663	1,099,527	1,091,446	13,236,461
Large Gen. Service	1,284,668	1,257,877	1,221,044	1,248,603	1,311,612	1,376,132	1,400,531	1,574,005	1,504,344	1,446,038	1,371,430	1,295,897	16,292,181
Large Industrial	291,910	278,227	299,163	285,447	248,441	284,161	266,814	298,551	286,545	302,758	283,705	299,732	3,425,454
Small Ag Irrigation	7,616	6,415	19,914	59,180	142,328	178,223	205,086	190,740	139,078	76,718	14,117	6,951	1,046,367
Large Ag. Irrigation	78,318	100,198	446,510	1,386,178	3,343,661	4,994,942	5,299,562	3,981,974	1,894,643	1,239,058	277,745	79,595	23,122,385
Street Lighting	18,322	18,322	18,322	18,322	18,322	18,322	18,322	18,322	18,322	18,322	18,322	18,322	219,864
Security Lighting	22,380	22,380	22,380	22,380	22,380	22,380	22,380	22,380	22,380	22,380	22,380	22,380	268,556
Unmetered Accounts	18,118	18,147	18,238	18,005	18,012	18,021	18,023	18,025	17,923	18,252	18,211	17,978	216,954
TOTAL REVENUE:	**$11,084,584**	**$10,575,842**	**$10,526,039**	**$9,549,907**	**$10,770,981**	**$13,099,483**	**$14,056,634**	**$13,816,541**	**$10,667,405**	**$8,886,491**	**$8,949,543**	**$10,308,357**	**$132,291,806**

Total Revenue 2026	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential	$7,485,878	$7,046,367	$6,733,601	$4,888,513	$4,011,095	$4,401,507	$4,954,196	$5,668,374	$4,842,286	$4,041,483	$5,203,442	$6,752,381	$66,029,124
Small Gen. Service	814,849	793,327	747,939	659,964	656,097	722,876	771,844	853,397	778,376	649,920	677,613	770,044	8,896,247
Medium Gen. Service	1,108,799	1,077,478	1,041,194	994,480	1,024,879	1,110,074	1,130,424	1,224,847	1,192,736	1,097,383	1,095,222	1,087,208	13,184,724
Large Gen. Service	1,285,491	1,258,664	1,221,838	1,249,399	1,312,445	1,376,984	1,401,404	1,574,955	1,505,251	1,446,929	1,372,282	1,296,726	16,302,367
Large Industrial	291,926	278,242	299,179	285,463	248,455	284,176	266,828	298,567	286,560	302,774	283,720	299,748	3,425,638
Small Ag Irrigation	7,574	6,379	19,820	58,924	141,727	177,473	204,224	189,937	138,490	76,389	14,048	6,912	1,041,898
Large Ag. Irrigation	78,318	100,198	446,510	1,386,178	3,343,661	4,994,942	5,299,562	3,981,974	1,894,643	1,239,058	277,745	79,595	23,122,385
Street Lighting	18,322	18,322	18,322	18,322	18,322	18,322	18,322	18,322	18,322	18,322	18,322	18,322	219,864
Security Lighting	22,380	22,380	22,380	22,380	22,380	22,380	22,380	22,380	22,380	22,380	22,380	22,380	268,556
Unmetered Accounts	18,215	18,243	18,336	18,101	18,108	18,117	18,119	18,121	18,018	18,349	18,308	18,074	218,111
TOTAL REVENUE:	**$11,131,751**	**$10,619,599**	**$10,569,119**	**$9,581,725**	**$10,797,169**	**$13,126,851**	**$14,087,304**	**$13,850,874**	**$10,697,063**	**$8,912,988**	**$8,983,082**	**$10,351,390**	**$132,708,914**

Retail Energy Sales Forecast

Tab 8

Public Utility District No. 1 of Benton County

Ten-Year Load & Customer Forecast 2022-2031

Contributors

Paul Durham	Power and Energy Programs Analyst II	Benton PUD
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Yohan Sutjandra	Manager, Quantitative Analytics and Research	The Energy Authority

Tables

Figures

1. Executive Summary

The Ten-Year Load and Customer Forecast for 2022-2031 provides an estimate of the District's annual/monthly loads and customer counts for each customer class and the total system. The Forecast is developed annually and used as critical input to several analyses and processes including the Cost of Service Analysis (COSA), the Integrated Resource Plan (IRP), rate analysis, budgeting, power requirements planning, and the Five-Year Capital Plan.

The following are the key assumptions of the 2022-2031 Forecast:

1) Uses regression modeling to relate historical retail load/customers, economic, and weather variables to forecast future retail load/customers.
    a) 2021 Woods and Poole projections for county employment were used to forecast the number of customers
    b) Historical monthly load and customers are combined to find a historical usage per customer for each rate class
    c) Weather variables include the last 15-year average of heating degree days and cooling degree days
2) Includes 11.7 aMW of conservation achievements identified by the 2021 Conservation Potential Assessment's ten-year cost-effective potential.
3) Does not *explicitly* include electricity intensive loads (EIL) or electric vehicles (EV's) because each currently represents a relatively small component of the total system load for the District. The District did perform scenario analyses that consider electrification impacts of both EVs and Residential Natural Gas fuel switching. More detail of this can be found in **Section 4.0 Load Forecast Scenario Analyses.**

The Forecast expects the total system retail load to be 202.9 aMW in 2022 and the 5-year and 10-year annual average rates of growth to be 0.35% and 0.29%, respectively. These growth rates are lower than the previous forecast, primarily due to removing COVID recovery assumptions. For the previous forecast, the small general service load was assumed to be reduced in 2021, but then ramp back to normal, which resulted in artificially high 5-year and 10-year growth rates because of the first year being abnormally low. However, COVID-19 has continued to play a role in economic impacts to local small businesses and the future outlook will be difficult to project when this class returns to the pre-pandemic customer growth that was historically seen. Total system forecast for calendar year 2022 is about 0.1 aMW lower than was estimated by the 2021 forecast. The Forecast projects a total system retail load of 208.2 aMW in 2031, as shown below in **Figure 1-1.**

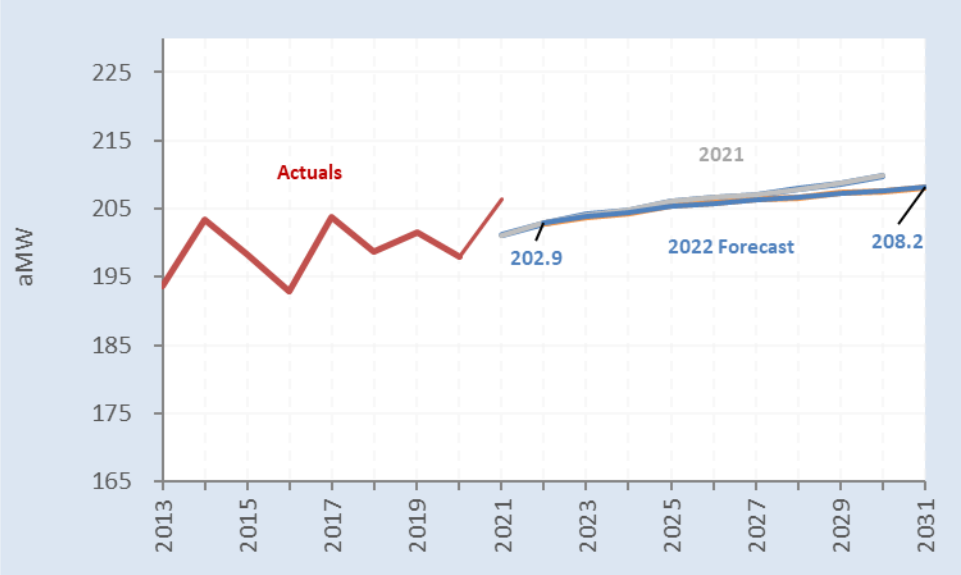


Figure 1-1 – Total system retail load comparison of 2022 Forecast to 2021 Forecast

The Forecast expects continued strong growth in the District's number of customers, with the total system number of customers forecast to increase by 709 customers in 2022. The dip in customers in 2023, as shown below, is due to an expected transfer of customers and load to the City of Richland and is anticipated to be completed in summer of 2023. Overall, the District is expecting to keep pace with recent historical annual growth in customers. The total system annual customer count increase is shown in Error! Reference source not found..

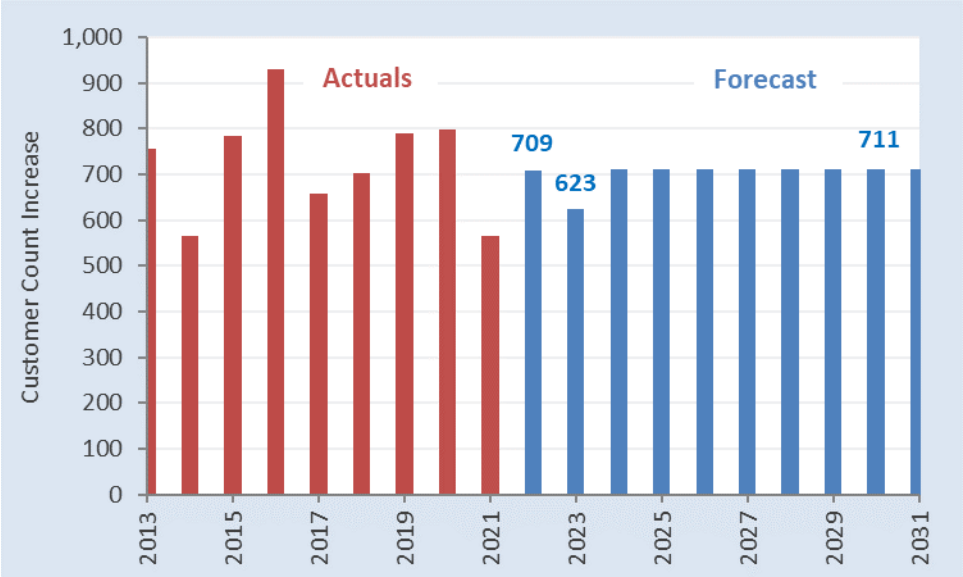


Figure 1-2 – Total system annual customer count increase

Overall, the Forecast reflects the continuing trend of the District having strong growth in our customer count, but a relatively low rate of retail load growth, primarily due to declining trends in energy usage per customer as a result of energy efficiency and conservation. The Forecast expects the total system annual usage per customer to decrease from 31.4 MWh/customer in 2022 to 29.0 MWh/customer in 2031, as shown below in **Figure 1-3**.

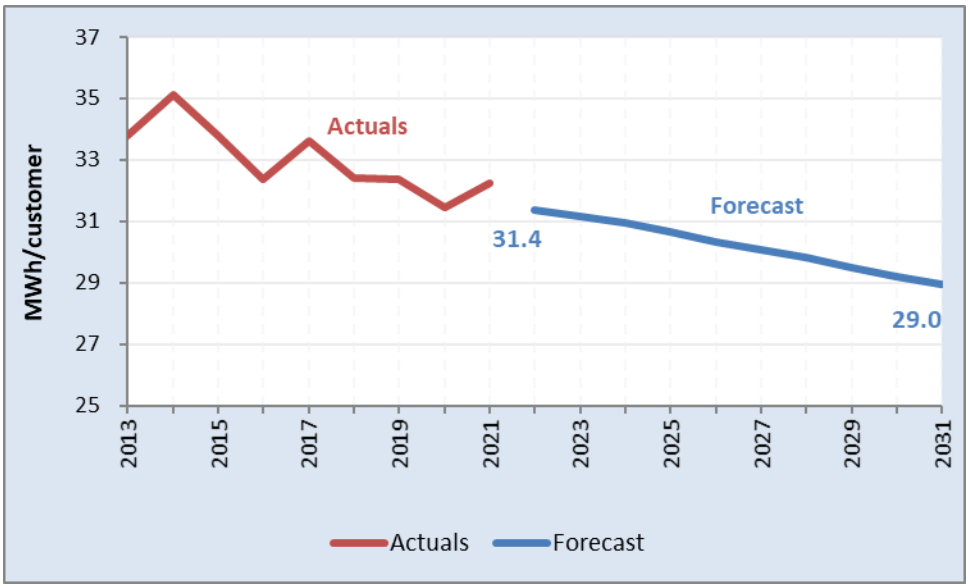


Figure 1-3 – Total system annual energy usage per customer

2. Forecast Methodology

2.1 Overview

The Ten-Year Load and Customer Forecast (Forecast) is a forecast of the District's total system and customer class annual and monthly energy (MWh), average demand (aMW), year-end number of customers, and average annual number of customers. The Forecast inputs include historical monthly loads and monthly customer counts by customer class, plus monthly historical and forecasted weather. The historical monthly load and customer counts are used to derive monthly usage per customer for each customer class. This historical usage per customer is then regressed against Heating-Degree Days (HDD) and Cooling-Degree Days (CDD) to account for weather's impact to loads. The District also produces an independent customer forecast driven by its relationship to Benton County total employment. The usage per customer and customer forecasts are combined to arrive at a class level forecast which is further aggregated to a total system forecast. Additionally, the conservation forecast and any manual adjustments as determined by District staff are also included. Additional details of the forecast methodology and assumptions are provided in the following sections.

2.2 Customer Classes

The Forecast results include a total system forecast that is a summation of the forecasts for each customer class. **Table 2-1** below summarizes the relationship of the District's customer classes (i.e. revenue classes) to its rate schedules and identifies the section of this report that discusses the Forecast results. Refer to the District's website for detailed descriptions of the rate schedules.

Table 2-1 – District customer class relationship to rate schedules

Customer Class	Rate Schedule(s)	Report Section
Total System	All	5.0
Residential	11, 12	6.1
Small General	21, 90, 95	6.2
Medium General	22	6.3
Large General	23, 24	6.4
Large Industrial	34	6.5
Small Irrigation	71	6.6
Large Irrigation	72, 73, 74, 75, 76	6.7
Street Lights	51	6.8
Security Lights	61	6.9
Unmetered Flats	85	6.10

2.3 Historical Data

Historical monthly retail energy sales (MWh) and monthly customer counts (i.e. number of active services), as reported by the District's monthly financial statements by customer class, are key inputs to the Forecast regression modeling. Additionally, the Forecast utilizes the historical monthly energy (MWh) and peak demand (MW) values reported by the Bonneville Power Administration (BPA) Meter Data Management Reporting (MDMR2) system for the District's total system load at the BPA point-of-delivery (Meter #8110).

2.4 Economic Data and COVID-19

Economic impacts are something that should be considered when forecasting future load and customer growth. The Energy Authority (TEA) subscribes to Woods & Poole Economics, a small independent firm in Washington DC that specializes in long-term county economic and demographic projections. Their forecasts, which are updated annually, provide some insight to potential growth for the future. The statements below from Woods & Poole provide a summary of their economic data, as described in *Technical Description of the Woods & Poole Economics, Inc. 2021 Regional Projections and Database:*

- "The Woods & Poole Economics, Inc. database contains more than 900 economic and demographic variables for every county in the United States for every year from 1970 to 2050. This comprehensive database includes detailed population data by age, sex, and race; employment and earnings by major industry; personal income by source of income; retail sales by kind of business; and data on the number of households, their size, and their income. All of these variables are projected for each year through 2050."
- "The Woods & Poole 2021 projections include historical data only through the year 2019, prior to the impact of the COVID-19 pandemic on U.S. population, employment, retail sales, and income. Data for the year 2020, the nadir of the COVID-19 impact, are forecast by Woods & Poole based on Bureau of Labor Statistics (BLS) total employment change 2019 to 2020 for all U.S. counties. Total U.S. retail sales data by kind of business from the Census Bureau for 2020 were used to adjust county forecasts for 2020 to reflect the COVID-19 impact. BEA Gross Domestic Product (GDP) and total personal income by source for the year 2020 were also used to adjust county forecasts for 2020 to reflect the COVID-19 impact. Data for personal current government transfer receipts for 2020 are from BEA National Income and Product Account (NIPA) estimates and were used to adjust county forecasts in 2020. BEA personal current government transfer receipts for 2020 were provided for unemployment benefits and all other transfers. Unemployment benefits transfers in 2020 were estimated based on BLS total number of people unemployed in 2020 by county."
- "The 2021 Woods & Poole projections do not show a significant long-term economic impact from COVID-19 beyond 2022."

TEA's general assessment was that Woods and Poole Economic data has proven to be a fairly reliable source of economic predictions for longer term projections and can be used as starting point to link to customer growth in multiple rate classes. For this reason, the Total Employment in Benton County was used in the creation of the customer forecast.

2.5 Weather Data

Weather data from the Tri-Cities Airport Pasco, WA weather station is a key input for the Forecast's regression modeling. **Table 2-2**Table 2-2 identifies the two key weather variables that are utilized.

Table 2-2 – Types of weather variables utilized for regression modeling

Weather Variable
Heating degree days (HDD)
Cooling degree days (CDD)

Heating degree days represent days where customers are forecasted to need heating services; whereas, cooling degree days represent days where customers are forecasted to need cooling services. As the need for heating and cooling services increases, the District's customers' energy usage increases as well. For each customer class, the regression analysis tested a range of base temperatures from 60 to 70 degrees Fahrenheit and selected the base temperature corresponding to the highest R^2 value. Monthly degree days were derived from hourly calculations aggregated for the month and then divided by 24.

In addition to the historical weather data being critical for the regression modeling, the data is also utilized to calculate a 15-year average for each weather variable to define the "normal weather" assumed for the base case forecast. **Figure 2-1**Figure 2-1 shows the annual historical values for degree days including the 15-year average at the 61-degree base. **Table 2-3** summarizes the 15-year minimum, average, and maximum values for the weather variables.

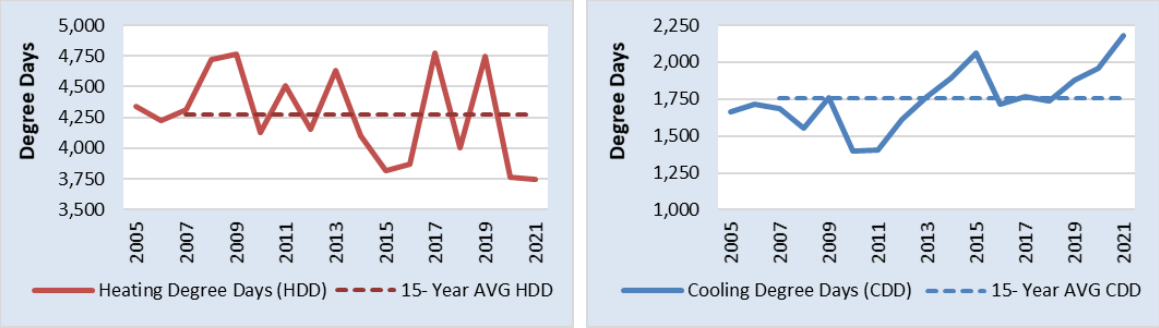


Figure 2-1 – Annual heating and cooling degree days from 2005-2021 at the Tri-Cities Airport

Table 2-3 – Weather variables 15-year min., avg. and max. values at Tri-Cities Airport

Weather Variable	Minimum	Average (Base Case)	Maximum
Heating degree days (HDD)	3748	4270	4775
Cooling degree days (CDD)	1397	1757	2177

2.6 Regression Modeling

The main component of the Forecast methodology is the regression modeling that determines the correlation, or relationship of historical loads and customers with historical weather and economic variables to produce a forecast. The District provides historical load and customer data to The Energy Authority (TEA), who the District has contracted with to perform regression modeling for the load forecast. For this year's forecast TEA has used *R-Programming Language* to perform statistical computing and creation of this year's load forecast model. R is often used among data experts and statisticians for data analysis and modeling.

TEA first separates the load forecast process into two sets of processes. The customer forecast portion must be completed first to use the output to assist with the second process. The customer forecast model starts by utilizing the historical number of customers for a given month and rate class utilizing data beginning in 2013. Customer data prior to 2013 showed several "step" changes which could make the regression provide an incorrect forecast or attempt to add additional step changes in the future.

Starting in 2013 helps eliminate counting errors or counting changes that impacted these historical values. TEA takes the provided data and runs a regression utilizing *Woods and Poole* economic data to establish a relationship between Total Employment in Benton County and customer growth. The output of this regression model is the initial customer forecast which is analyzed against recent customer growth trending for credibility.

The second process is creating the load forecast model which utilizes the customer forecast component from above to achieve the initial load results. The new modeling first takes both historical monthly load and customers by rate class to derive historical monthly usage (kWh/customer). A regression analysis on historical monthly usage is completed and plotted against historical monthly weather (HDD, CDD) to help build the model. **Figure 2-2** below represents the steps used in the load forecast process.

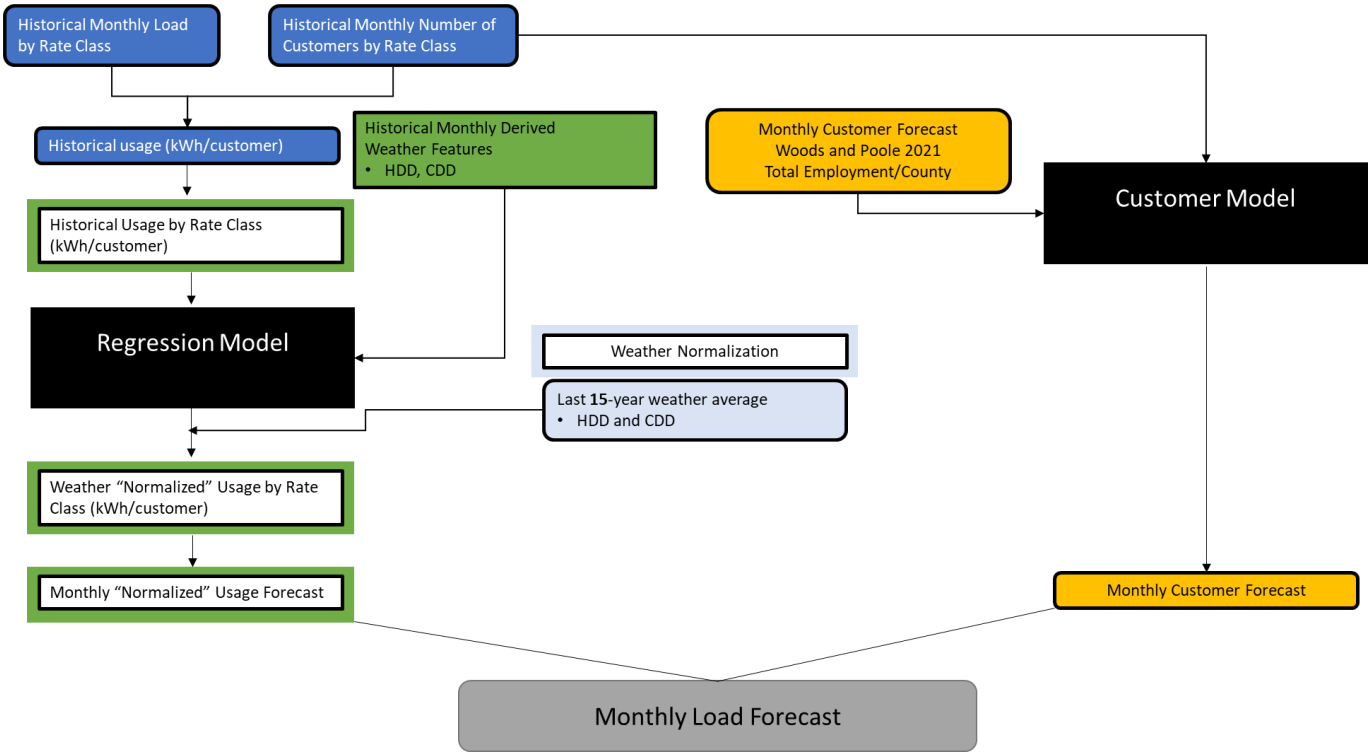


Figure 2-2 – Load Forecast Model

Weather variables from a monthly average of the last 15-years are used as input into the model for the assumed weather that will drive load going forward. This weather is the expected "normal" weather and helps establish a monthly usage per customer forecast by class. The last and final step is to apply this monthly normalized usage and multiply it by the monthly customer forecast to get the monthly load forecast. In some cases, District staff has overridden the model output (see Section 2.9 – Manual Adjustment); however, this section is intended to document the base TEA models as they evolve over time.

2.7 Monthly Shaping

The regression modeling uses historical monthly billing data and monthly weather variables to create a monthly forecast. After determining the monthly values, they are aggregated to annual forecast values where they are shaped using a 5-year average of the percentage of the month's billed retail load compared to the annual billed retail load. Monthly regression modeling on actual usage during a specific month would be preferred, but the District is currently limited to billing data. For example, a customer may be billed in February for usage that occurred from January 5 to February 5. Therefore, it would not be valid to find a correlation between the customers billed "February usage" and February weather, given that most of the usage occurred in January. The District is working on using advanced meter data combined with business intelligence analytics to overcome this limitation, which is expected to give better deliverables in the future.

2.8 Conservation Forecast

In addition to natural energy saving effects due to electricity rate inflation and economic conditions, the District has an established conservation program in place to proactively assist our customers with efforts to reduce their energy consumption. In order to account for these extra efforts, the District uses the latest Conservation Potential Assessment (CPA) report as an input to the Forecast. The CPA details recent historical conservation savings and provides a 2-year, 4-year, 10-year and 20-year forecast of conservation savings by customer sector. In October 2021, the District's Commission passed Resolution No. 2582 to adopt a new CPA, which is used as the input for the 2022 Forecast. CPA's are conducted every two years and this input is currently being updated in even years. **Figure 2-3** below shows the historical achieved conservation from 2013 to 2021 by customer sector.

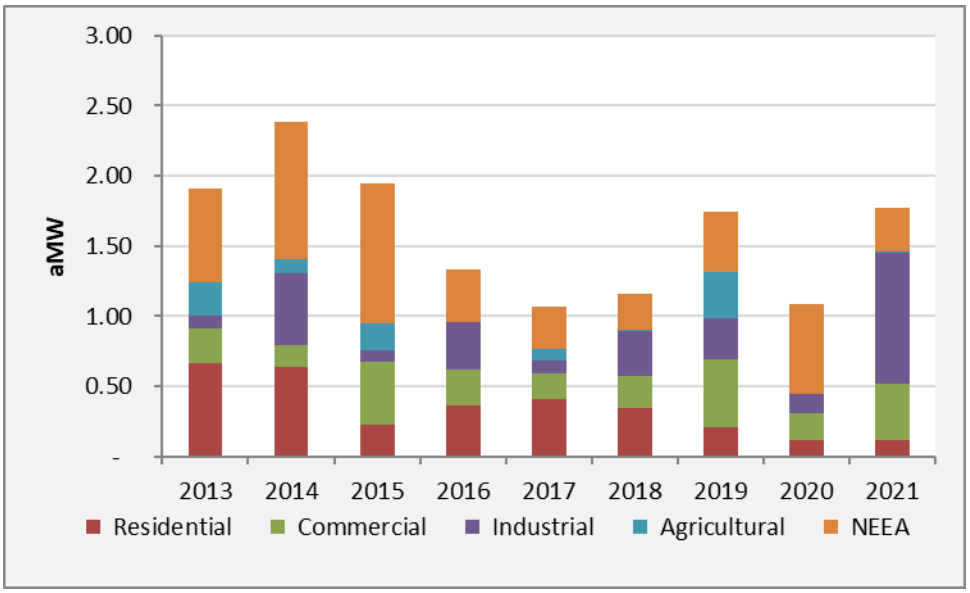


Figure 2-3 – Historical annual conservation by customer sector from 2013-2021

The CPA's forecasted conservation by customer sector is analyzed by staff, allocated to the District's customer classes and then subtracted from the forecasted loads to account for load reductions associated with conservation activities. District staff has observed that approximately 1.0 aMW of annual conservation has been consistently achieved since the year 2000. Although conservation achievements

were below historical levels in 2020 due to restrictions during the initial phases of the COVID-19 pandemic, the District is back on track with strong conservation achievements in 2021.

In order to account for the impact of historical conservation activities influencing the regression model's trend, District staff subtracts 1.0 aMW from the CPA's annual conservation projection. Therefore, the Forecast only includes the expected annual incremental conservation savings above or below 1.0 aMW.

The Forecast reflects the District's practice of targeting to achieve 60% of its 2-year target in the first year and 40% in the second year, as well as each customer class's changing percentage share of the total potential over time. The 10-year cumulative conservation potential is about 11.7 aMW. **Figure 2-4** shows the forecast of total annual cumulative conservation by customer class for the years 2022-2031.

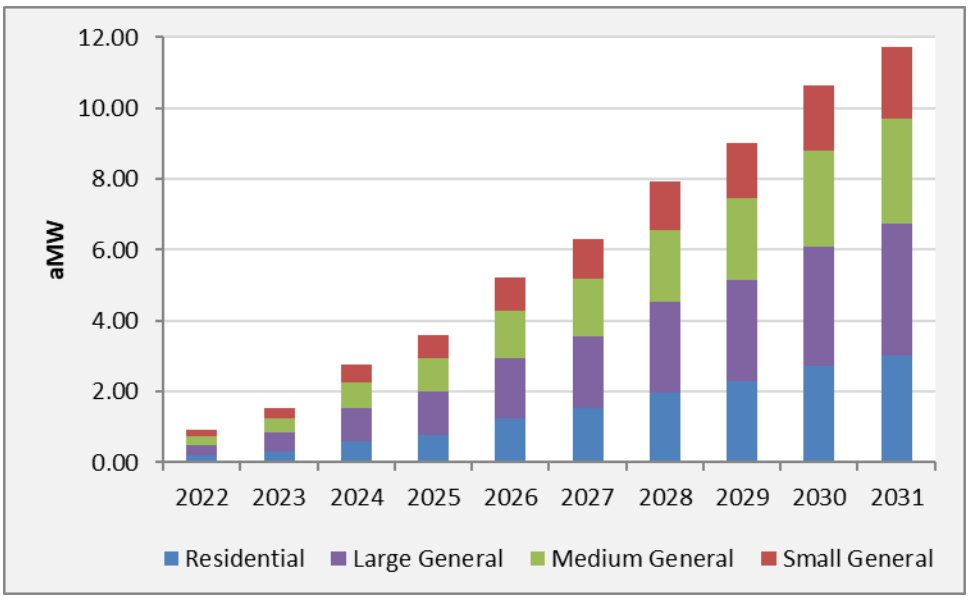


Figure 2-4 - Forecast of total cumulative conservation by customer class from 2022-2031

2.9 Manual Adjustment

Staff uses professional judgement to implement manual adjustments to the regression model's forecast, primarily for two reasons: 1) to adjust for step-changes or high growth in load or customers that the regression analysis trend would not be able to consider, and 2) to adjust for modeling results that do not reflect reasonable expectations. In general, it is preferred to make as few adjustments as possible and instead to focus on improving the modeling methodology.

The regression modeling attempts to minimize the forecast error such that the modeled values align closely with the historical actuals, but there is always some model error. At times there is a need to adjust the starting point for the first year of the forecast to account for the forecast error between the previous years modeled and actual value. Recent historical (2017-2021) load and customer trends also provided insights and known or upcoming impacts to specific rate classes. A combination of the initial model results and analysis of recent history were both utilized in the formulation of the 2022 load forecast.

Manual adjustments were also made for customer growth and loss of load due to transferring some customers to the City of Richland (COR) which is expected to occur in 2023. A complete list is shown in **Table 2-4** summarizing the manual adjustments that were utilized for the Forecast by rate class.

Table 2-4 – Manual adjustments applied to the forecast after regression modeling

Customer Class	Adjustment Type	Adjustment Description
Residential	Customer & Load	1) Increased customer growth to achieve about 57 cust./month 2) Removed customer first year forecast error 3) Adjusted customers down by 87 in 2023 due to expected transfer to COR. 4) Increased load results to linear trend since 2013
Small General	Customer & Load	5) Decreased customer growth to achieve about 3 cust./month 6) Removed customer first year forecast error 7) Adjusted customers down by 1 in 2023 due to an expected transfer to COR. 8) Increased load results to linear trend since 2013
Medium General	Customer	9) Removed customer first year forecast error
Large General	None	10) Acceptable model results
Large Industrial	Load	11) Increased load to trend 2019-2021, then held flat
Small Irrigation	Customer & Load	12) Decreased customer growth to show a decline of about 3 customers annually 13) Increased load to trend 2016-2021, then held flat
Large Irrigation	Customer & Load	14) Increased load to trend 2016-2021, then held flat 15) Adjusted customers down by 1 in 2023 due to an expected transfer to COR
Streetlights	Load	16) Acceptable. Held flat to 2021 load
Security Lights	Customer	17) Removed customer first year forecast error 18) Customer count declines at about 2 customers/month
Unmetered Flats	Load	19) Adjusted load down to start where 2021 ended

2.10 System Losses

The historical customer class load data used for the Forecast is based on the District's billed load, which includes both District metered and unmetered loads. The unmetered loads (street lighting, security lighting and flats) utilize estimates for monthly energy consumption. The aggregation of District billed load is referred to as "retail load" and this term implies the exclusion of losses associated with serving this load over the District's transmission and distribution system or the Bonneville Power Administration's (BPA's) system. Refer to the following paragraphs for additional background on system losses and to **Appendix A, Table** 7-1 for a summary of the how the losses impact the total system load.

The Bonneville Power Administration (BPA) separately meters the District's load. The District's contract with BPA defines both a "point-of-delivery" and a "point-of-metering". The aggregation of load measured by BPA's points-of-metering will include the District's entire retail load, as defined above, but only a portion of the losses associated with the District's transmission and distribution system, because not all of BPA's meters are physically positioned to measure 100% of the losses at their locations. For example, BPA metering is typically installed on the low voltage side of a substation power transformer and therefore does not measure the losses associated with the District's power transformer. Another

example is when BPA metering is installed at the substation, but the point-of-delivery is defined at a point upstream where the District's transmission line taps BPA's line. For billing, BPA estimates the losses associated with the difference between the point-of-metering and the point-of-delivery. BPA's billed aggregate load at the point-of-delivery, also referred to as the District's "wholesale load", is inclusive of the District's entire retail load and the District's entire transmission and distribution system losses.

The difference between BPA's billed total load at the point-of-delivery and the District's billed retail load is equal to the District's transmission and distribution system losses. These losses are typically represented as a percentage of the total point-of-delivery load. The Forecast assumes that the District's transmission and distribution system losses are 3.4%, which is the average of the last 10 years of historical annual losses.

The District is not only responsible for procuring the energy necessary to serve our customers' load and our system losses, but also the losses associated with the transport of electricity over BPA's equipment and transmission lines from regional generation resources to our points-of-delivery. BPA transmission customers are required to return real power losses to BPA. Schedule 11 of BPA's Open Access Transmission Tariff (OATT) sets the real power loss factor by season, at 1.95% of kWh delivered for the non-summer period and 2.31% for the summer period. The BPA summer period is identified as June 1, 12:00 AM to September 1, 12:00 AM.

2.11 Peak Forecast

To calculate a monthly peak forecast, a five year monthly average load factor was calculated using the historical relationship between the BPA point-of-delivery total system monthly average energy and monthly peak demand. The average load factor was then applied to the monthly load forecast to generate peak demands for every month. **Appendix A** – Summary Tables, **Table** 7-1 includes the historical and forecast of the system peak hourly demand.

3. Forecast Considerations

3.1 Forecast History

Figure 3-1 shows the past six years of ten-year forecasts of total system retail load, actual load and the current 2022 ten-year forecast. As seen in the graph, the District's retail load forecasts have continued to project a fractional growth rate with the most recent years being below 0.5%. The Forecasts' growth rates have maintained similar growth patterns the last several years.

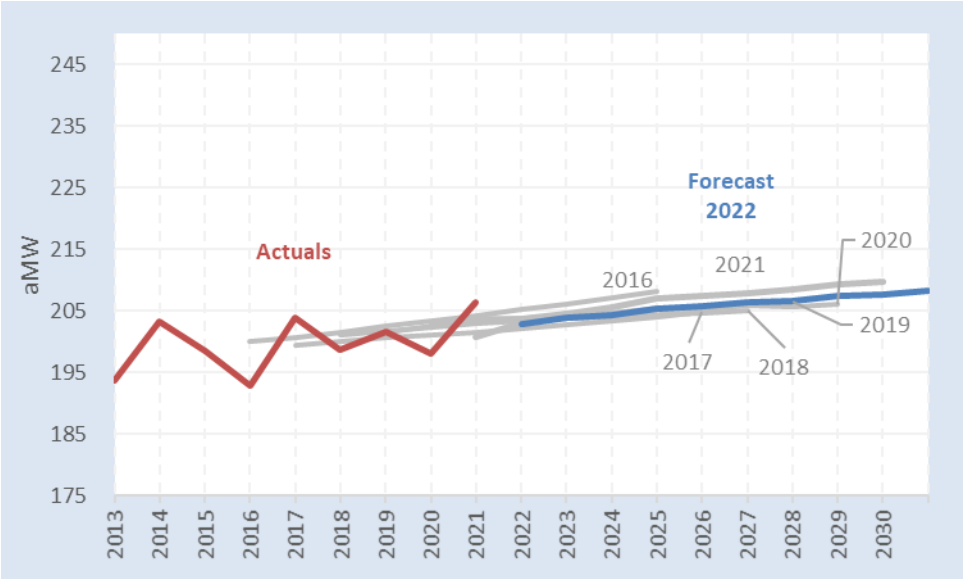


Figure 3-1 – Total system retail load ten-year forecasts from 2016 to 2022

3.2 Forecast Variances

Several factors can cause variations from the Forecast compared to actuals, including weather, large irrigation customer crop rotations, and unforeseen new loads or loss of loads. The most common driver of the variance is weather, given that the Forecast is based on average weather. **Figure 3-2** below shows that over the past 11 years the District's total system retail load forecast variance has ranged from +4.3% to -3.6%. For an annual forecast near 200 aMW, a 5% variance is equivalent to 10 aMW.

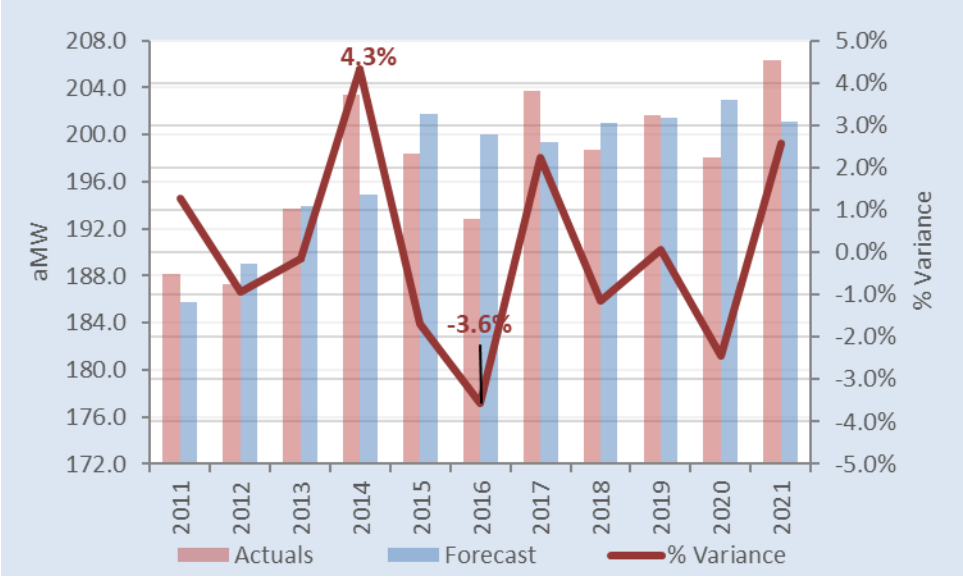


Figure 3-2 – Forecast vs. actuals variance of total system retail load from 2011 to 2021

In addition to the variance of the total system retail load, the District considers variances by customer class. In 2021, general service rate classes show mixed results after returning from pandemic level usage and irrigation loads increased due to extreme June 2021 temperatures and lack of precipitation. **Table 3-1** shows the variance by customer class for the 2021 forecast versus 2021 actuals.

Table 3-1 – Forecast vs actuals variance of retail load (aMW) by customer class for 2021

Customer Class	2021 Forecast	2021 Actual	2021 % Variance
Residential	83.08	81.26	-2.20%
Small General	13.78	13.27	-3.71%
Medium General	20.67	20.92	1.18%
Large General	26.21	27.62	5.41%
Large Industrial	7.29	7.43	1.93%
Small Irrigation	1.70	1.91	12.37%
Large Irrigation	47.66	53.19	11.61%
Street Lights	0.29	0.27	-5.95%
Security Lights	0.10	0.10	-6.23%
Unmetered Flats	0.35	0.34	-2.15%
Total System[1]	**201.13**	**206.31**	**2.58%**

1) Total of class amounts may differ from Total System due to rounding.

3.3 Forecast High & Low Cases

To account for some of the load uncertainties, the District's Forecast includes high and low cases, in addition to a base case load forecast. Similar to last year's forecast, the base case regression model output is adjusted up/down based on a statistical analysis of the historical percentage deviation from the average from 2002 to 2021 for each customer class. These historical deviations are representative of variances that can be expected going forward, including due to above or below average weather. For the 2022 Forecast, the high and low cases are ± 4.6% (± 9.2 aMW) in 2022 and ± 4.6% (± 9.5 aMW) in 2031. **Figure 3-3** shows graphically the historical annual variability along with the Forecast base, high, and low case forecasts.

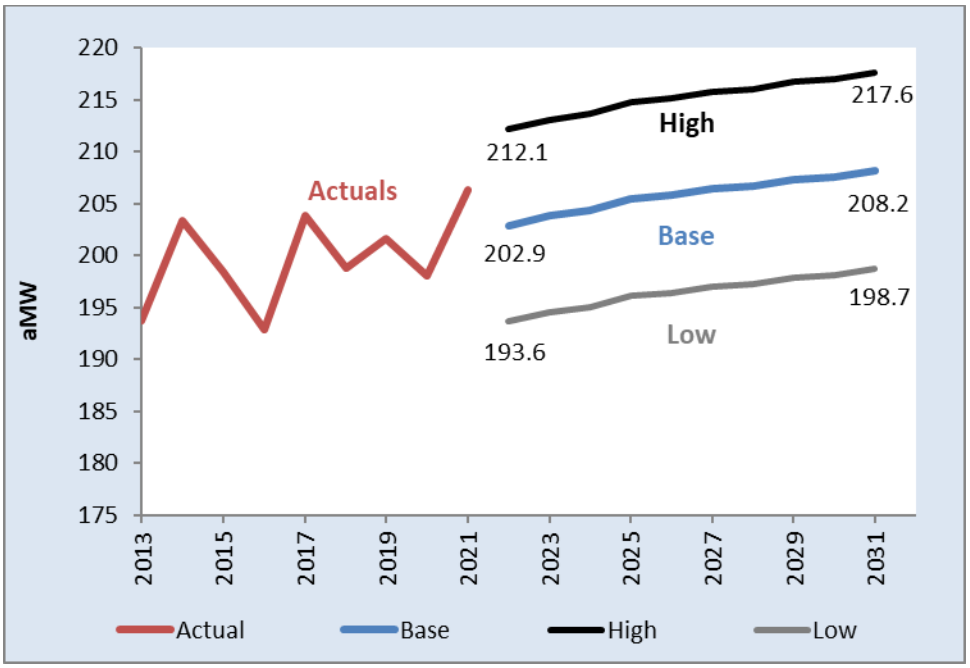


Figure 3-3 –Total system retail load historical and base forecast with high and low case

3.4 Load Preservation and Load Growth

Many utilities are experiencing lower retail sales growth due to several factors which may include general economic activity, energy efficiency programs, fuel-switching or customer generation from rooftop solar installations and community solar installations. Flattening or declining retail sales puts upward pressure on customer retail rates as general inflation causes costs to increase while sales remain stagnant. More importantly, about one-half of total utility costs are fixed costs such as poles, wires and substations required to safely and reliably serve customer loads. Fixed costs do not decrease as sales flatten or decrease.

In the current environment, it is important for the District to preserve existing load and continue to have positive load growth. The District has surplus energy above what is required to meet loads ("long on resources") on an annual average basis in an average water year and the excess energy from its resources is sold in the wholesale market. Wholesale market prices have declined significantly in recent years as a result of overbuilding of renewable generation due to state mandated renewable energy policies and because of large increases in natural gas supplies due to fracking technologies, which has kept natural gas prices low. By growing loads and selling the District's energy at retail rather than wholesale, it will decrease pressure on customer retail rates. The District has partnered with TRIDEC and other local agencies to market and highlight areas within the District's service territory that have excess capacity and are ready to interconnect new loads.

Over the last two years the market has seen a bounce back in market price volatility due to uncertainly at both state and regional levels surrounding resource adequacy concerns and Greenhouse Gas (GHG) regulatory programs. Recent clean energy legislation bills and topics like Cap-and-Trade or Carbon Tax programs are shifting states like Washington to procuring and using clean energy resources for the future. Many of these programs push other sectors such as transportation, heating/cooling building codes and infrastructure, and others away from fossil fuels and towards electrification. As demand for

clean electricity increases, higher pricing is expected to follow suit until additional generation resources are built to balance demand. It's unclear how quickly these sectors will move towards electrification, but it's anticipated that load will likely grow over the next 10-20 years as these programs are implemented. The District has performed scenario analyses around electrification and electric vehicles, which can be found in section **4.0 Load Forecast Scenario Analyses** below.

3.5 Customer Generation

In 2021 the District added 141 new services for customer generation net metering, which was slightly less than the 169 new services added in 2018 but significantly more than the 56 added in 2020. Slower solar growth after 2019 was expected due to the end of the Washington State incentive funding. However, in 2020 the federal Solar Investment Tax Credit (ITC) was extended so interested residential parties could qualify for a 26% ITC through the end of 2022 and 22% in 2023 prior to ending in 2024.The District expects on average 3-4 new services per week in 2022-2023 with the ITC still being offered.

The net metering services are predominantly roof top solar, with only about 3 services being wind generators. In addition to its net metered customers, the District has 154 customers that funded the construction of two community solar projects, the 74.8 kW Ely Community Solar Project in Kennewick, WA (commissioned July 1, 2015) and the 24.6 kW Old Inland Empire (OIE) Community Solar Project in Prosser, WA (commissioned March 4, 2016).

The aggregate of the District's customer generation, including the District's community solar projects, reduced the District's annual retail load in 2021 by about 0.75 aMW or 6,570 MWh. The single hour maximum generation was 3.8 MW from 1:00-2:00 pm on June 5, 2021. The impact of customer generation reducing load has not been explicitly modeled in the Forecast.

3.6 Electricity Intensive Loads

The District has assigned the term Electricity Intensive Loads (EIL) to the emergence of new loads associated with cryptocurrency mining and block chain operations. The District has developed a policy to address the requirements and risks associated with EIL customers. As of March 2021, the District has identified 6 customers operating a total of 9 EIL services. The combined load of all EIL customers in 2021 was about 2.6 aMW, which is up about 2.1 aMW compared to 2020. The District's largest EIL service accounted for about 1.8 aMW in 2021. Several of these customers increased their usage between May and Dec of 2021, likely impacted by the economic conditions for mining cryptocurrency. The 2022 Forecast does not explicitly model new EIL growth, but the District will continue to monitor these types of loads in the years ahead.

3.7 Electric Vehicles

Another possible source of load growth is electric vehicles (EVs). The impact of electric vehicles on load growth has not been explicitly modeled in the Forecast, but the District conducted additional analyses that include potential EV outcomes in the **4.0 Load Forecast Scenario Analyses** section below. EVs present an opportunity for the District to offset the impact of flattening or declining retail sales by preserving and possibly growing loads. Like any new business that enters the community, EVs have the potential to generate more energy sales over the long run that will help mitigate upward pressure on rates. The move to clean energy use will be something to monitor closely over the next 10-20 years, especially as EVs become more popular and affordable.

The District passed Resolution No. 2521 on November 12, 2019 to create an Electrification of Transportation Plan that will allow the District to offer incentives/rebates, advertise, and promote the adoption of EV's. Following the adoption of Resolution No. 2521, the District began promoting the

benefits of owning an electric vehicle by offering a $250 rebate to customers who purchase or lease a new electric vehicle. The District has provided 15 total rebates for EVs through March of 2022 since adopting the resolution.

The Washington State Department of Licensing (WA DOL) maintains a database and website of electric vehicles registered in Washington State. The data set includes both plug-in hybrid electric vehicles (PHEV) and battery electric vehicles (BEV). District staff is monitoring this data, particularly for increases in BEVs because this type of EV qualifies for a District rebate. BEVs are the predominant focus and long-term direction of the EV industry and has greater charging load impact than PHEV technology. According to the data, there was an increase of 110 BEV vehicles registered in the last year to one of the 3 cities in **Table 3-2** below.

Table 3-2 – Number of electric vehicle registrations by type and city as of Mar. 2022

City	Plug-in hybrid electric vehicle (PHEV)	Battery electric vehicle (BEV)	Grand Total
Prosser	11	13	24
Benton City	22	20	42
Kennewick	175	279	454
Grand Total	**208**	**312**	**520**

Assuming a single BEV uses 2,800 kWh annually–based on a Chevy Bolt at 28 kWh/100 miles driven 10,000 miles per year–the 312 BEV's would add about 0.09 aMW of annual load. If all 312 BEV's charged at the same time using a level 2 charger (240-volt, 40 amp) it would add about 3.0 MW of peak demand.

3.8 Natural Gas/Electrification

A source of potential load growth for the District could come in the form of natural gas transition and electrification due to current climate initiatives and political decisions in the state of Washington. These changes could mean consumers options and alternatives will be limited in new construction or renovation of homes or businesses. **Table 3-3** below provides the District's best estimate from currently available spatial and billing data through October of 2021, the total number of service locations and their current energy source(s). It will be important for the District to recognize the impact of future legislation and remain nimble in addressing new potential loads and/or load shifting.

Table 3-3 – Service Locations in Benton County by Energy Source

Energy Source(s)	# of Service Locations	% of Total
Full - Electric	38,079	70.6
Gas/Electric	15,932	29.4
Grand Total	**54,238**	**100.0**

4. Load Forecast Scenario Analyses

4.1 Overview

As mentioned in the previous sections, there are many considerations and future impacts to load as requirements shift over the next 10 to 20 years. Additional solar installations will reduce load during the mid-morning to late afternoon, but incremental load from new electric vehicles and potential fuel-switching from natural gas could push loads in the other direction with new regulatory action or customer adoption. Given the potential for many different future outcomes, the District analyzed an array of load scenarios that may come to fruition and could change loads significantly from the expected "base" forecast.

4.2 Natural Gas/Electrification Scenario

In 2021 HB 1084[1] was introduced during Washington State's legislative session, which if enacted into law would have prohibited natural gas infrastructure for space and water heating in both new residential and commercial construction and additionally require the removal of natural gas systems when renovation is undertaken on existing buildings.[2] Many cities in other states such as California, New York, and Massachusetts have already adopted similar codes and requirements. Given the current regulatory climate in the state and recent passages of both the Clean Energy Transformation Act (CETA) and the Climate Commitment Act (CCA), it may be only a matter of time until another bill similar to HB 1084 will pass in an upcoming legislative session. Due to the rapidly changing environment, the District thought it would be important to consider the load impacts of such a bill. However, due to data availability and the large range of electric consumption by certain rate classes, the District only performed this analysis on the residential rate class.

Analyzing historical service locations through October 2021 within the District's service territory and leveraging recently acquired spatial data and technology, the District was able to analyze which residential service locations across the territory have a gas meter present on the premises on each county parcel the District currently serves. **Figure 4-1** below, shows a small snapshot of Kennewick parcels which are color coded. Fully electric customers are shown in blue and gas/electric customers in gold.

[1] 2021 HB 1084 Reducing GHG - https://lawfilesext.leg.wa.gov/biennium/2021-22/Pdf/Bills/House%20Bills/1084-S.pdf?q=20220324095112

[2] State Level NG Ban - https://www.natlawreview.com/article/washington-state-legislature-considers-first-its-kind-state-level-natural-gas-ban

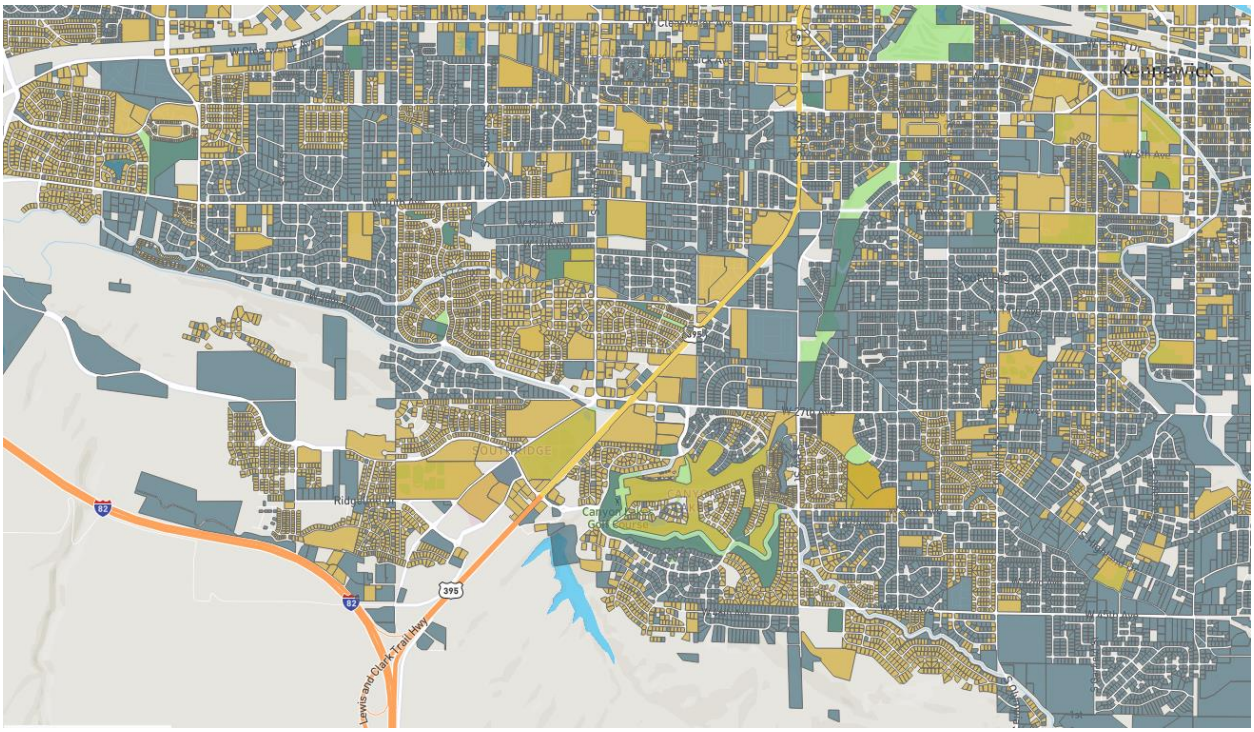


Figure 4-1 –Benton PUD Full-Electric and Gas/Electric Service locations

Customers that have a gas meter present on their property may have different uses for natural gas whether it be cooking, space heating, and/or water heating. From an electric utility perspective these customers' electricity consumption differs considerably from full-electric customers. When comparing the two load profiles, significant variances can be seen over the course of the year. **Figure 4-2** below compares the average monthly consumption of a Gas/Elec customer, Full-Electric customer, and the "Average" usage of all residential customers between Oct 2018 – Oct 2021.

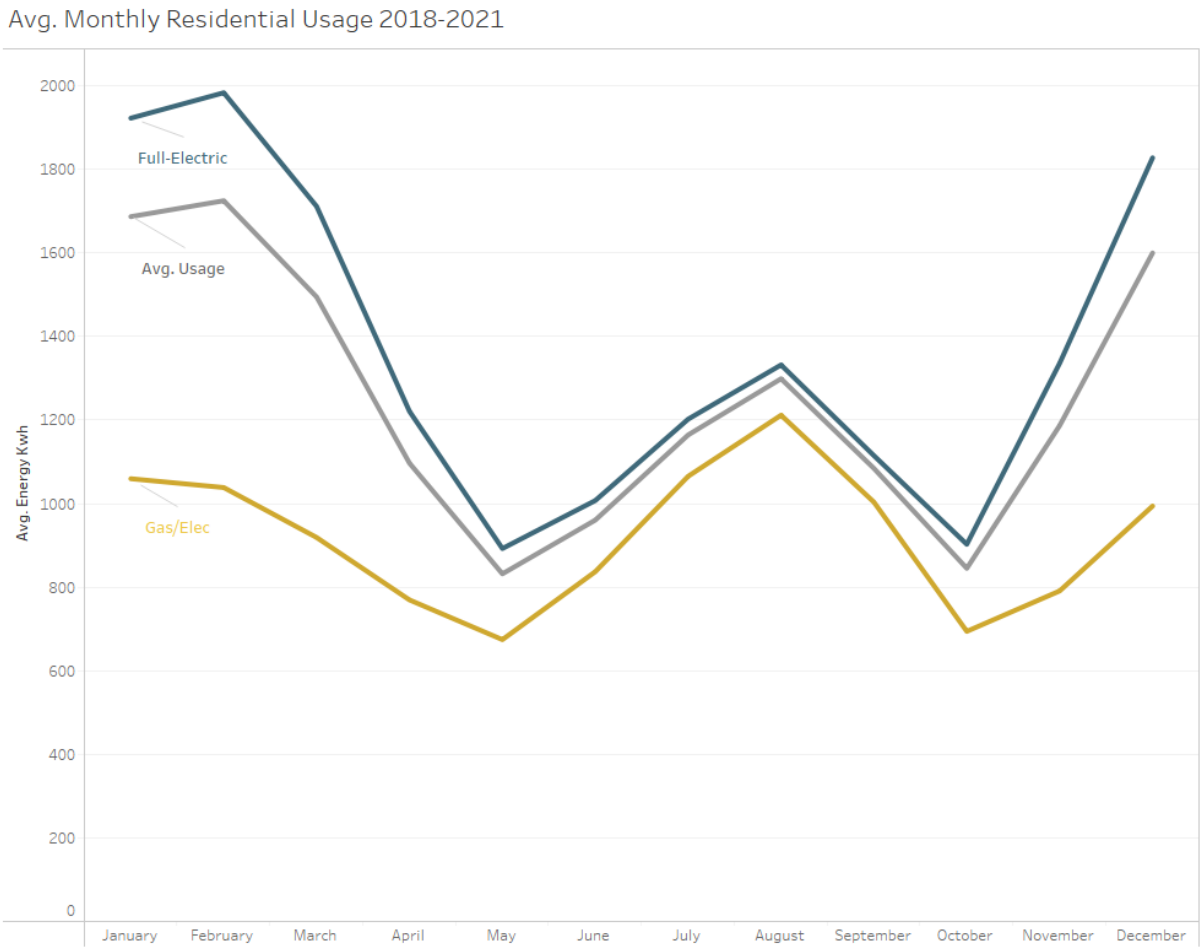


Figure 4-2 –Monthly Residential Usage (Gas/Elec, Full-Electric, and "Average" Res)

Perhaps unsurprisingly, electric usage in the fall, winter, and early spring months of the year is considerably less for customers who use both gas and electric forms of energy in their home. In fact, when comparing the annual electricity consumption, residential gas/elec. customers are currently using roughly 5,386 kWh less per year than a full electric customer when looking at recent history as can be seen in **Table 4-1** below.

Table 4-1 – Monthly Avg. Energy variance between Full-Elec. and Gas/Elec. customers (2018-2021)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Avg. Var. (kWh)	863.0	946.0	793.3	451.3	218.3	170.3	138.0	120.7	111.3	195.3	544.7	833.3	5385.6
% of Annual Total	16.0	17.6	14.7	8.4	4.1	3.2	2.6	2.2	2.1	3.6	10.1	15.5	100.0

Performing an analysis of new residential services, that the District installed between 2019-2021 revealed that approximately 36.1% of these installations had a gas meter also present at the service location/property. A total 12,928 current residential Gas/Elec customers were identified in 2021 and assuming the same percentage to the customer forecast moving forward, the District would have approximately 14,130 gas/elec. customers at the end of 2026.

Table 4-2 – Forecasted number of residential Gas/Elec Customers by 2026

Year	New Residential Customer Forecast	Total Res Service Customers	Res Gas/Elec Customers	Full-Elec Customers	% Gas Customers
2021		47,043	12,928	34,115	27.5%
2022	682	47,719	13,174	34,545	27.6%
2023	599	48,312	13,390	34,922	27.7%
2024	684	48,990	13,637	35,353	27.8%
2025	684	49,668	13,883	35,784	28.0%
2026	684	50,346	14,130	36,215	28.1%

Starting in 2027, HB 1084 stated any construction to new or existing residential buildings would be required to be fully electric going forward. Given that the average life expectancy of most gas furnaces is between 15-20 years[3], all current gas/elec. customers could conceivably be converted to full electric status by the mid-2040s. Taking a simplified assumption that 5% (1/20th) of those customers switch to full-electric needing to replace their gas heating system and utilizing the consumption variance from earlier, the District would see additional load, especially in the winter months. Under a higher transition rate of 10%, driven by potential incentives or stricter regulatory movement, the load increases even quicker with all customers transitioned to fully electric by 2036. **Table 4-3** below provides the conversion values and additional potential load.

Table 4-3 – Potential Natural Gas conversion 2026-2041

Year	Total Res Gas/Elec Customers 5%	Total Res Gas/Elec Customers 10%	5% Conversion (aMW)	10% Conversion (aMW)	Base Load (aMW)	Base Load + 5% Conversion (aMW)	Base Load + 10% Conversion (aMW)
2026	14,130	14,130	0.0	0.0	205.8	205.8	205.8
2027	13,424	12,717	0.6	1.0	206.4	206.9	207.4
2028	12,717	11,304	1.1	2.0	206.6	207.7	208.6
2029	12,011	9,891	1.7	3.0	207.3	209.0	210.3
2030	11,304	8,478	2.2	4.0	207.6	209.8	211.5
2031	10,598	7,065	2.8	5.0	208.2	211.0	213.1
2032	9,891	5,652	3.4	6.0	208.3	211.7	214.3
2033	9,185	4,239	3.9	7.0	208.9	212.9	215.9
2034	8,478	2,826	4.5	8.0	209.2	213.7	217.2
2035	7,772	1,413	5.0	9.0	209.7	214.7	218.6
2036	7,065	0	5.6	9.9	209.7	215.3	219.6
2037	6,359	0	6.2	10.1	210.3	216.5	220.4
2038	5,652	0	6.7	10.2	210.5	217.2	220.7
2039	4,946	0	7.3	10.3	210.8	218.1	221.1
2040	4,239	0	7.8	10.5	210.7	218.6	221.2
2041	3,533	0	8.4	10.6	210.9	219.3	221.5

[3] Gas Furnace Lifespan - https://www.carrier.com/residential/en/us/products/furnaces/how-long-does-a-furnaces-last

4.3 Electric Vehicle Scenario

As of March 25, 2022 Washington state signed into law HB 5974, which sets a target for all vehicles model year 2030 or newer that sold, purchased, or registered in Washington state must be electric vehicles.[4] As a part of a larger transportation package called "Move Ahead Washington" which plans to spend nearly $17 billion, the inclusion of this language will directly impact future load forecasts as the push for additional electric vehicles (EVs) continues. Further considerations are needed now to prepare for a future where EVs are the standard form of transportation and likely a significant addition to load.

The recently released 2021 Northwest Power Plan[5] from the Northwest Power and Conservation Council (NWPCC) predicts that at a regional level, annual electricity demand from electric vehicles will likely range between 1,000 aMW to 4,000 aMW by 2040[6]. Light-Duty Vehicles (LDV) are expected to significantly increase their market share and could be as high as 70%[7] of all new vehicle sales in 2030. Sweeping changes in regional climate policies and a call for emissions reductions are having a profound impact moving forward.

The NWPCC's transportation modeling methodology[8] begins by looking at a variety of historic transportation data including vehicle sales and stock, vehicle capital costs, fuel prices, vehicle efficiencies, population growth, and energy demand by fuel type. Demand requirements come from a need to fill vehicle stock requirements and fill demand resulting from population growth for LDV. The model additionally assumes that electric vehicles follow a declining cost curve over time and auto manufacturers are expected to offer multiple electric vehicle options in the near future. Forecasted results from the NWPCC study of LDV stock for both the Reference case and High-Electric case can be seen below in both **Figure 4-3** and **Figure 4-4.**

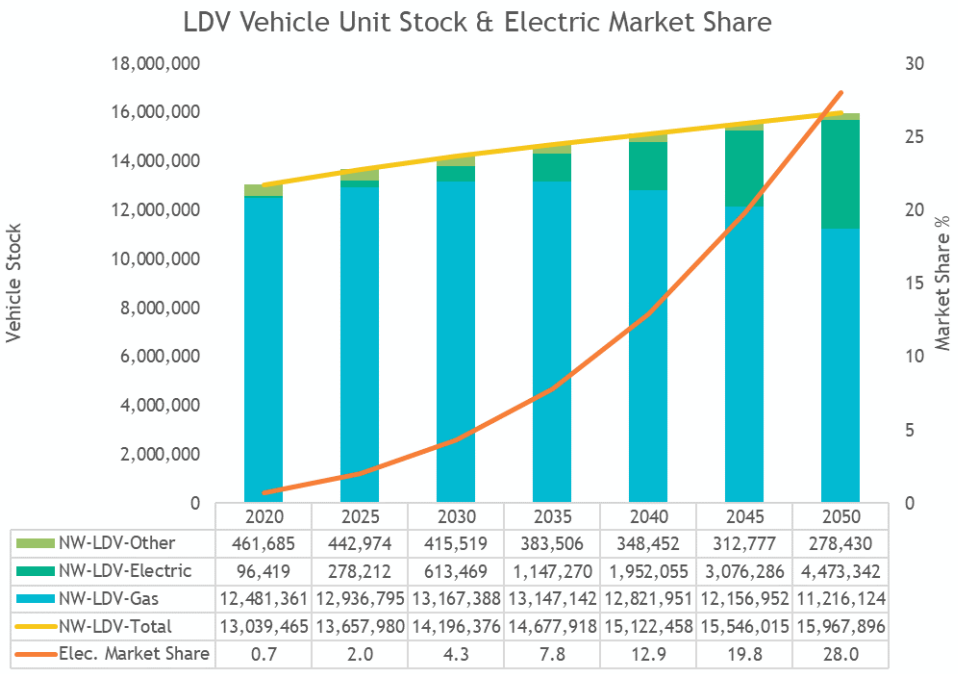
[4] 2030 All EV Sales Washington - https://electrek.co/2022/03/25/washington-passes-bill-targeting-all-electric-car-sales-by-2030-for-real-this-time/

[5] 2021 NW Power Plan - https://www.nwcouncil.org/media/filer_public/4b/68/4b681860-f663-4728-987e-7f02cd09ef9c/2021powerplan_2022-3.pdf

[6] 2040 EV Forecast Predictions - https://www.nwcouncil.org/2021powerplan_transportation-model-findings/

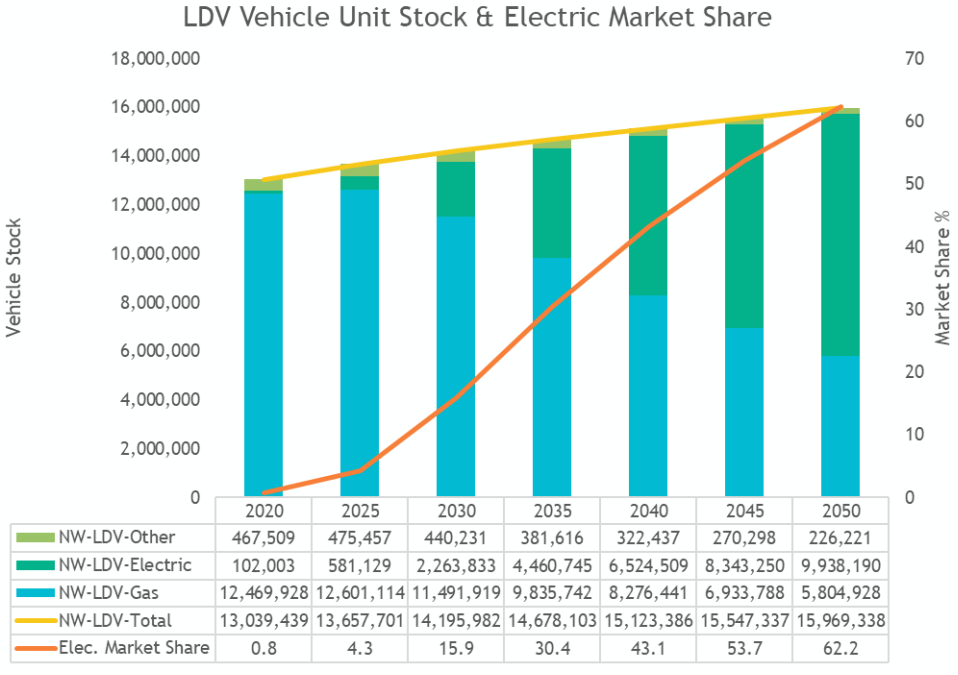
[7] Market Share of Electric Vehicle Sales in LDV Category - https://www.nwcouncil.org/2021powerplan_transportation-model-findings/

[8] NWPCC Transportation Model Methodology - https://www.nwcouncil.org/2021powerplan_transportation-model/



	2020	2025	2030	2035	2040	2045	2050
NW-LDV-Other	461,685	442,974	415,519	383,506	348,452	312,777	278,430
NW-LDV-Electric	96,419	278,212	613,469	1,147,270	1,952,055	3,076,286	4,473,342
NW-LDV-Gas	12,481,361	12,936,795	13,167,388	13,147,142	12,821,951	12,156,952	11,216,124
NW-LDV-Total	13,039,465	13,657,980	14,196,376	14,677,918	15,122,458	15,546,015	15,967,896
Elec. Market Share	0.7	2.0	4.3	7.8	12.9	19.8	28.0

Figure 4-3 –LDV Vehicle Unit Stock & Electric Market Share – Reference Case[9]



	2020	2025	2030	2035	2040	2045	2050
NW-LDV-Other	467,509	475,457	440,231	381,616	322,437	270,298	226,221
NW-LDV-Electric	102,003	581,129	2,263,833	4,460,745	6,524,509	8,343,250	9,938,190
NW-LDV-Gas	12,469,928	12,601,114	11,491,919	9,835,742	8,276,441	6,933,788	5,804,928
NW-LDV-Total	13,039,439	13,657,701	14,195,982	14,678,103	15,123,386	15,547,337	15,969,338
Elec. Market Share	0.8	4.3	15.9	30.4	43.1	53.7	62.2

Figure 4-4 –LDV Vehicle Unit Stock & Electric Market Share – High-Elec Case[10]

[9] LDV Vehicle Unit Stock & Electric Market Share Reference Case - https://www.nwcouncil.org/2021powerplan_transportation-model-reference-case-results/sites/default/files/TPT_ModelResults_Reference_Case.xlsx

[10] LDV Vehicle Unit Stock & Electric Market Share High-Elec Case - https://www.nwcouncil.org/2021powerplan_transportation-model-high-electric-case/sites/default/files/TPT_ModelResults_HiElectric_Case.xlsx

The figures above show the Northwest's potential for substantial growth in market share from electric vehicles in both the reference case and the high-electric case studies. The District analyzed these results further by disaggregating the Northwest results to focus on the Washington state which makes up over 60% of the current total electric vehicle stock in the Northwest and is the primary driver of most of the electric vehicle sales both historically and in the Council's model results. These forecasted electric vehicle stock values for Washington were then used to derive a Year-over-Year (YoY) growth percentage which was then applied to the current EV count in Benton County. At the end of 2021 Benton County had 666 EVs and after applying this methodology, the county could have between 3,324 and 10,879 EVs by 2030 based on the Reference case and High-Electric case respectively. **Table 4-4** below shows the EV numbers given both growth scenarios.

Table 4-4 – Benton County EV Growth Scenarios

Year	YoY Growth % (Ref)	YoY Growth % (Hi Elec)	EV Count (Ref)	EV Count (Hi Elec)
2021			666	666
2022	23.5%	42.6%	822	949
2023	23.4%	43.9%	1,014	1,367
2024	23.9%	43.6%	1,257	1,963
2025	21.3%	41.6%	1,524	2,779
2026	19.3%	38.2%	1,819	3,839
2027	17.9%	34.5%	2,145	5,163
2028	16.6%	32.3%	2,501	6,831
2029	15.7%	28.4%	2,893	8,769
2030	14.9%	24.1%	3,324	10,879
2031	14.2%	18.7%	3,795	12,915
2032	13.6%	15.1%	4,309	14,871
2033	13.1%	12.7%	4,873	16,756
2034	12.5%	10.9%	5,483	18,578
2035	12.1%	9.5%	6,145	20,334
2036	11.7%	8.3%	6,866	22,031
2037	11.2%	7.5%	7,637	23,674
2038	10.9%	6.7%	8,467	25,262
2039	10.5%	6.1%	9,356	26,798
2040	10.2%	5.6%	10,307	28,294
2041	9.8%	5.1%	11,316	29,741

While many popular car companies like Tesla have been selling EVs for nearly a decade, it was not until the last few years that other car manufacturers like Ford, GM, Volvo, etc. have begun offering more electric vehicle options. Ford has plans to release its fully electric Ford F-150 Lightning in 2022 and GM has made public statements about making more than 30 EV options available to consumers by 2025 and making only all-electric vehicles by 2035.

Utilizing the projected EV counts from **Table 4-4,** the District then evaluated the amount of load added each year given the YoY growth projections under both the Reference and High-Electric cases. Considering that future LDV sales will likely be a blend of both small cars and trucks, the District utilized a blend of several known models (Tesla, Nissan, Rivian, GM, and Ford) to formulate an average EV consumption

(kWh/mile)[11]. The District then utilized an average of 10,000 miles driven per year, per vehicle to quantify the potential average EV load impacts over the analysis period. **Table 4-5** below provides the cumulative additional load from EV growth under both scenarios and these assumptions.

Table 4-5 – Benton County EV Growth (aMW)

Year	Cumulative EV Ref (aMW)	Cumulative EV Hi Elec (aMW)	Base Load (aMW)	Base Load + EV Ref (aMW)	Base Load + EV Hi Elec (aMW)
2022	0.1	0.1	202.9	202.9	203.0
2023	0.1	0.3	203.8	204.0	204.1
2024	0.2	0.5	204.4	204.6	204.9
2025	0.3	0.8	205.4	205.7	206.2
2026	0.4	1.2	205.8	206.2	207.0
2027	0.6	1.7	206.4	206.9	208.1
2028	0.7	2.3	206.6	207.3	209.0
2029	0.8	3.1	207.3	208.2	210.4
2030	1.0	3.9	207.6	208.6	211.4
2031	1.2	4.7	208.2	209.4	212.8
2032	1.4	5.4	208.3	209.7	213.7
2033	1.6	6.1	208.9	210.5	215.1
2034	1.8	6.8	209.2	211.0	216.0
2035	2.1	7.5	209.7	211.8	217.1
2036	2.4	8.1	209.7	212.0	217.8
2037	2.6	8.7	210.3	212.9	219.0
2038	3.0	9.3	210.5	213.4	219.8
2039	3.3	9.9	210.8	214.1	220.7
2040	3.7	10.5	210.7	214.4	221.2
2041	4.0	11.0	210.9	215.0	222.0

4.3 Load Scenario Summary

Impacts from customer adoption, future regulatory action, and even some District intervention will likely play a role in how things develop in the future. The importance of recognizing these potential outcomes is essential for many of the workgroups at the District including Power Management, Energy Programs, Engineering and Customer Service. **Table 4-6** and **Figure 4-5** below summarize all the potential combinations of natural gas and EV scenario analyses conducted for the 2022 Load Forecast.

[11] Electric Car KWh Per Mile - https://ecocostsavings.com/electric-car-kwh-per-mile-list/

Table 4-6 – Base Forecast and Potential Load Scenarios 2022-2041

Calendar Year	Base Load (aMW)	Base Load + Ref EV (aMW)	Base Load + High EV (aMW)	Base Load + 5% Gas (aMW)	Base Load + 10% Gas (aMW)	Base Load + Ref EV/5% Gas (aMW)	Base Load + Ref EV/10% Gas (aMW)	Base Load + High EV/5% Gas (aMW)	Base Load + High EV/10% Gas (aMW)
2022	202.9	202.9	203.0	202.9	202.9	202.9	202.9	203.0	203.0
2023	203.8	204.0	204.1	203.8	203.8	204.0	204.0	204.1	204.1
2024	204.4	204.6	204.9	204.4	204.4	204.6	204.6	204.9	204.9
2025	205.4	205.7	206.2	205.4	205.4	205.7	205.7	206.2	206.2
2026	205.8	206.2	207.0	205.8	205.8	206.2	206.2	207.0	207.0
2027	206.4	206.9	208.1	206.9	207.4	207.5	207.9	208.7	209.1
2028	206.6	207.3	209.0	207.7	208.6	208.4	209.3	210.1	211.0
2029	207.3	208.2	210.4	209.0	210.3	209.9	211.2	212.1	213.4
2030	207.6	208.6	211.4	209.8	211.5	210.8	212.6	213.7	215.4
2031	208.2	209.4	212.8	211.0	213.1	212.2	214.3	215.6	217.8
2032	208.3	209.7	213.7	211.7	214.3	213.0	215.6	217.1	219.7
2033	208.9	210.5	215.1	212.9	215.9	214.5	217.5	219.0	222.0
2034	209.2	211.0	216.0	213.7	217.2	215.5	219.0	220.5	224.0
2035	209.7	211.8	217.1	214.7	218.6	216.8	220.7	222.2	226.1
2036	209.7	212.0	217.8	215.3	219.6	217.7	222.0	223.4	227.8
2037	210.3	212.9	219.0	216.5	220.4	219.1	223.0	225.2	229.1
2038	210.5	213.4	219.8	217.2	220.7	220.1	223.6	226.5	230.0
2039	210.8	214.1	220.7	218.1	221.1	221.4	224.4	228.0	231.1
2040	210.7	214.4	221.2	218.6	221.2	222.2	224.8	229.1	231.7
2041	210.9	215.0	222.0	219.3	221.5	223.4	225.6	230.4	232.6

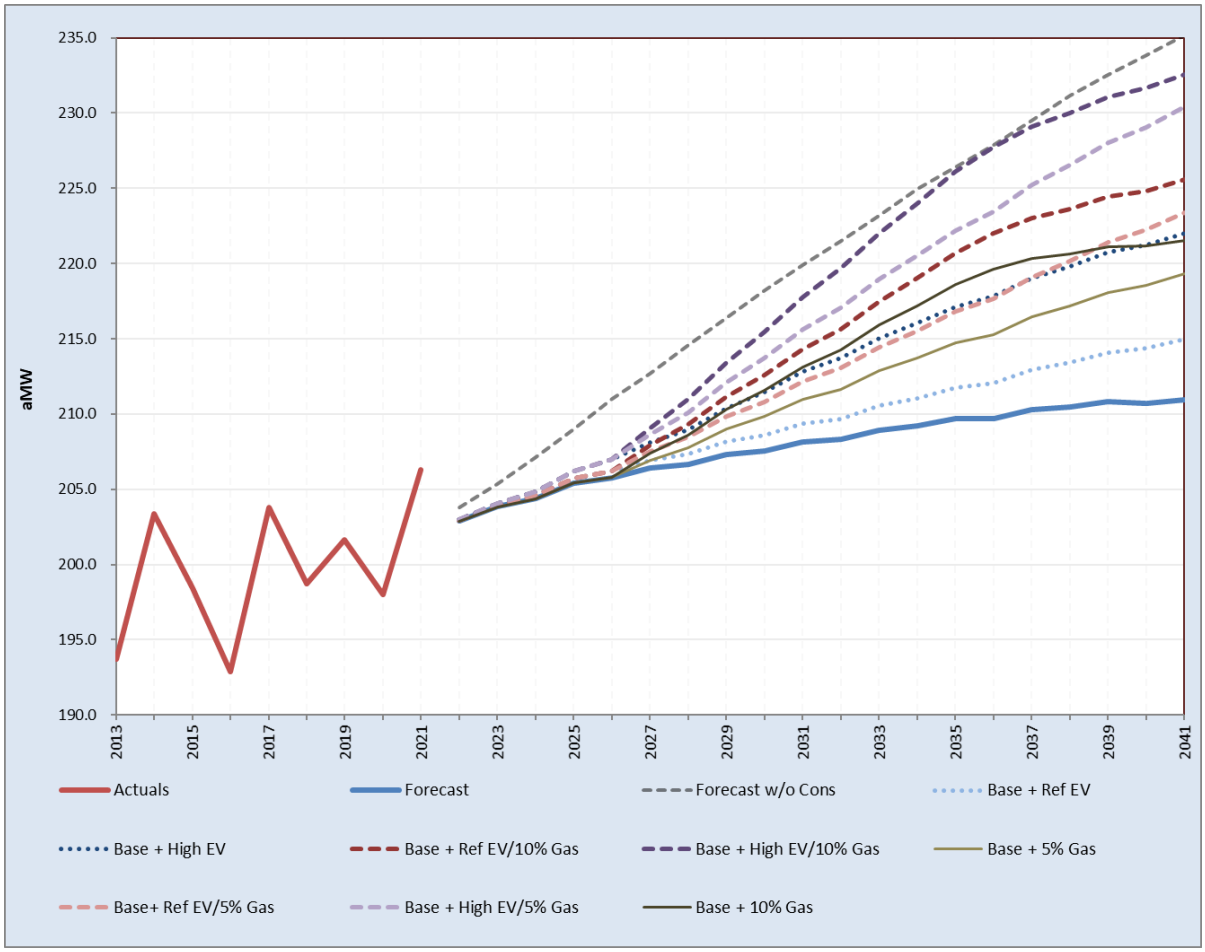


Figure 4-5 –Base Forecast and Potential Load Scenarios 2022-2041

5. Forecast for Total System

The total system forecast is an aggregation of the forecasts of each customer class. The forecast for the total system load is 202.9 aMW in 2022 and growing to 208.2 aMW in 2031. The five and ten-year average annual rates of growth are 0.35% and 0.29%, respectively. The ten-year forecast incudes 11.7 aMW of cumulative conservation expected over the 10-year period. The forecasted change in customers is expected to increase by roughly 709 total customers in 2022. See **Figure 5-1** and **Table 5-1** for the ten-year forecast detail.

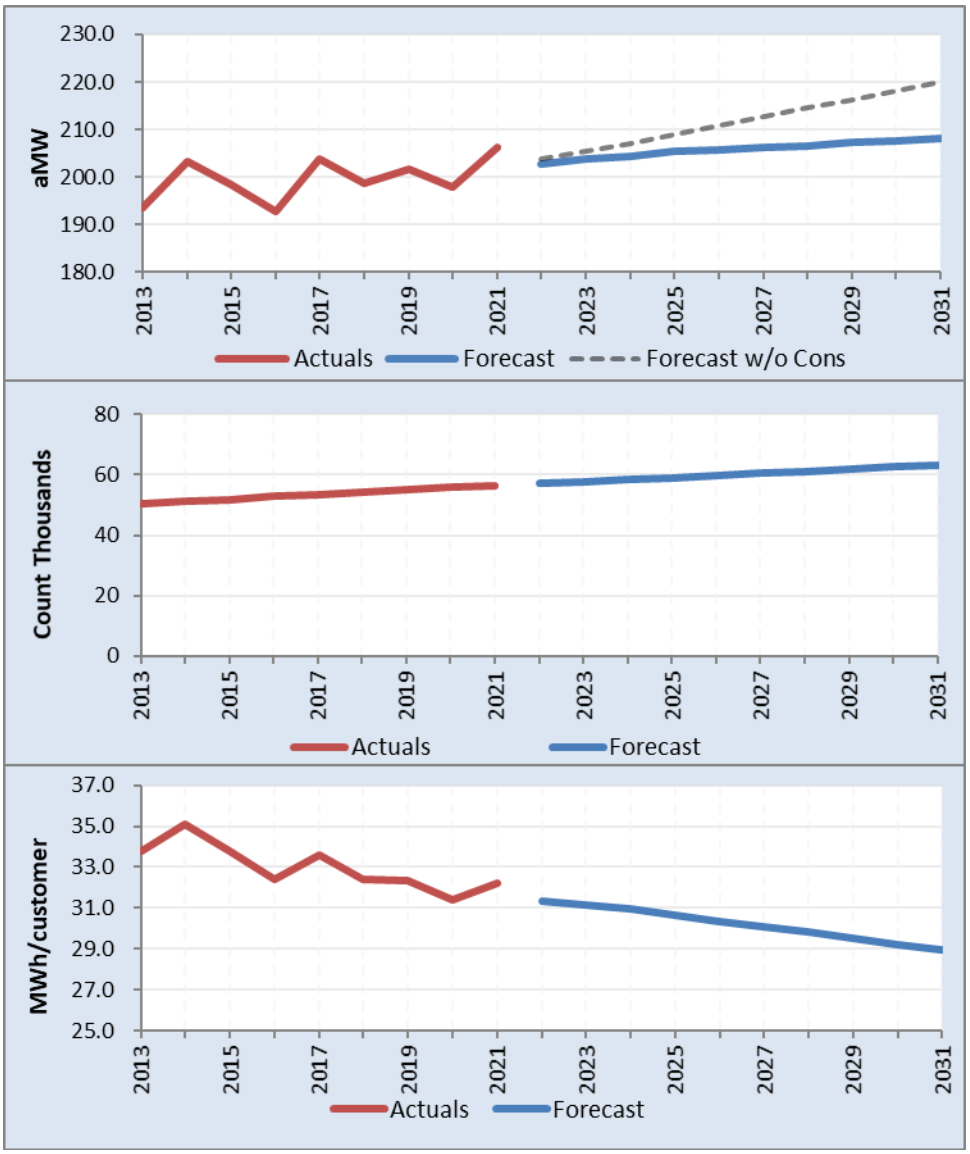


Figure 5-1 – Total System forecast of retail load, customers and usage per customer

Table 5-1 – Total System forecast of retail load, customers and usage per customer

Calendar Year	Historical Energy (MWh)	Forecast Energy (MWh)	Average Power (aMW)	Average Power % Change	Forecast without Conservation (MWh)	Forecast without Conservation (aMW)	Year-End Customer Count	Year-End Customer Change	1-Year % Change	Average Customer Count	Usage Per Customer (MWh)
2005	1,602,508	#N/A	182.93	0.62%	#N/A	#N/A	45,307	#N/A	#N/A	45,068	35.558
2006	1,555,710	#N/A	177.59	-2.92%	#N/A	#N/A	45,981	674	1.49%	45,535	34.165
2007	1,607,265	#N/A	183.48	3.31%	#N/A	#N/A	46,621	640	1.39%	46,248	34.753
2008	1,639,856	#N/A	186.69	1.75%	#N/A	#N/A	47,582	961	2.06%	47,279	34.685
2009	1,726,341	#N/A	197.07	5.56%	#N/A	#N/A	48,007	425	0.89%	47,753	36.151
2010	1,592,802	#N/A	181.83	-7.74%	#N/A	#N/A	48,616	609	1.27%	48,296	32.980
2011	1,648,362	#N/A	188.17	3.49%	#N/A	#N/A	49,134	518	1.07%	48,876	33.725
2012	1,645,277	#N/A	187.30	-0.46%	#N/A	#N/A	49,738	604	1.23%	49,389	33.313
2013	1,696,774	#N/A	193.70	3.41%	#N/A	#N/A	50,495	757	1.52%	50,199	33.801
2014	1,781,322	#N/A	203.35	4.98%	#N/A	#N/A	51,061	566	1.12%	50,732	35.112
2015	1,738,022	#N/A	198.40	-2.43%	#N/A	#N/A	51,845	784	1.54%	51,441	33.787
2016	1,694,078	#N/A	192.86	-2.79%	#N/A	#N/A	52,774	929	1.79%	52,320	32.379
2017	1,785,098	#N/A	203.78	5.66%	#N/A	#N/A	53,433	659	1.25%	53,111	33.611
2018	1,740,849	#N/A	198.73	-2.48%	#N/A	#N/A	54,136	703	1.32%	53,744	32.392
2019	1,766,171	#N/A	201.62	1.45%	#N/A	#N/A	54,926	790	1.46%	54,581	32.359
2020	1,739,433	#N/A	198.02	-1.78%	#N/A	#N/A	55,725	799	1.45%	55,342	31.431
2021	1,807,315	#N/A	206.31	4.19%	#N/A	#N/A	56,289	564	1.01%	56,072	32.232
2022	#N/A	1,777,184	202.87	-1.67%	1,785,226	203.79	56,998	709	1.26%	56,672	31.359
2023	#N/A	1,785,461	203.82	0.47%	1,798,864	205.35	57,621	623	1.09%	57,332	31.143
2024	#N/A	1,795,135	204.36	0.27%	1,819,485	207.14	58,331	710	1.23%	58,006	30.947
2025	#N/A	1,799,313	205.40	0.51%	1,830,849	209.00	59,043	712	1.22%	58,717	30.644
2026	#N/A	1,802,430	205.76	0.17%	1,848,192	210.98	59,753	710	1.20%	59,428	30.330
2027	#N/A	1,807,913	206.38	0.30%	1,863,159	212.69	60,464	711	1.19%	60,138	30.063
2028	#N/A	1,815,026	206.63	0.12%	1,884,689	214.56	61,175	711	1.18%	60,849	29.828
2029	#N/A	1,816,193	207.33	0.34%	1,895,149	216.34	61,885	710	1.16%	61,560	29.503
2030	#N/A	1,818,305	207.57	0.12%	1,911,488	218.21	62,596	711	1.15%	62,270	29.200
2031	#N/A	1,823,499	208.16	0.29%	1,926,166	219.88	63,307	711	1.14%	62,981	28.953
AARG %[1] (2022-2026)			0.35%								-0.83%
AARG %[1] (2022-2031)			0.29%								-0.88%

1) AARG % = Annual Average Rate of Growth Percentage

6. Forecast by Customer Class

6.1 Residential

The forecast for residential retail load is 83.1 aMW in 2022 and growing to 87.9 aMW in 2031. The five and ten-year average annual rates of growth are 0.64% and 0.63% respectively. The ten-year forecast incudes 3.0 aMW of cumulative conservation. The forecasted change in customers is an increase of 682 customers in 2022. The District will be transferring 87 of its residential customers and load to the City of Richland in summer of 2023. See **Figure 6-1** and **Table 6-1** for the ten-year forecast detail.

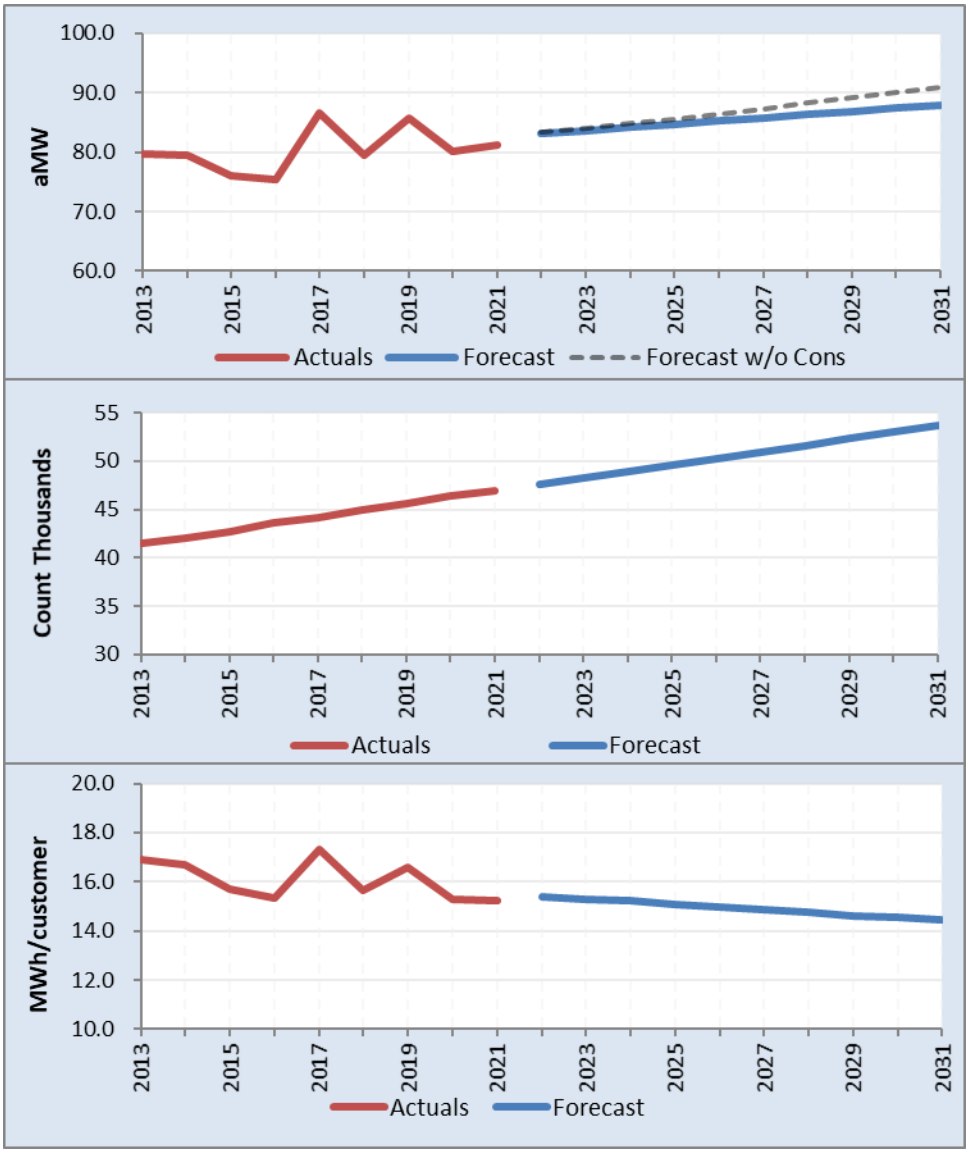


Figure 6-1 - Residential forecast of retail load, customers and usage per customer

Table 6-1 – Residential forecast of retail load, customers and usage per customer

Calendar Year	Historical Energy (MWh)	Forecast Energy (MWh)	Average Power (aMW)	Average Power % Change	Forecast without Conservation (MWh)	Forecast without Conservation (aMW)	Year-End Customer Count	Year-End Customer Change	1-Year % Change	Average Customer Count	Usage Per Customer (MWh)
2005	622,639	#N/A	71.08	0.48%	#N/A	#N/A	37,236	#N/A	#N/A	36,963	16.845
2006	632,213	#N/A	72.17	1.54%	#N/A	#N/A	37,802	566	1.52%	37,418	16.896
2007	644,392	#N/A	73.56	1.93%	#N/A	#N/A	38,285	483	1.28%	37,969	16.972
2008	666,418	#N/A	75.87	3.14%	#N/A	#N/A	39,095	810	2.12%	38,855	17.151
2009	721,719	#N/A	82.39	8.60%	#N/A	#N/A	39,430	335	0.86%	39,220	18.402
2010	654,775	#N/A	74.75	-9.28%	#N/A	#N/A	39,973	543	1.38%	39,687	16.498
2011	687,953	#N/A	78.53	5.07%	#N/A	#N/A	40,432	459	1.15%	40,201	17.113
2012	668,018	#N/A	76.05	-3.16%	#N/A	#N/A	40,955	523	1.29%	40,645	16.435
2013	697,887	#N/A	79.67	4.76%	#N/A	#N/A	41,561	606	1.48%	41,321	16.889
2014	696,804	#N/A	79.54	-0.16%	#N/A	#N/A	42,039	478	1.15%	41,758	16.687
2015	665,505	#N/A	75.97	-4.49%	#N/A	#N/A	42,724	685	1.63%	42,375	15.705
2016	661,742	#N/A	75.33	-0.84%	#N/A	#N/A	43,574	850	1.99%	43,157	15.333
2017	759,634	#N/A	86.72	15.11%	#N/A	#N/A	44,177	603	1.38%	43,870	17.316
2018	697,107	#N/A	79.58	-8.23%	#N/A	#N/A	44,946	769	1.74%	44,550	15.648
2019	751,107	#N/A	85.74	7.75%	#N/A	#N/A	45,666	720	1.60%	45,319	16.574
2020	704,408	#N/A	80.19	-6.47%	#N/A	#N/A	46,398	732	1.60%	46,027	15.304
2021	711,831	#N/A	81.26	1.33%	#N/A	#N/A	46,936	538	1.16%	46,690	15.246
2022	#N/A	728,130	83.12	2.29%	729,786	83.31	47,618	682	1.45%	47,305	15.392
2023	#N/A	732,817	83.65	0.64%	735,576	83.97	48,217	599	1.26%	47,939	15.286
2024	#N/A	739,521	84.19	0.64%	744,773	84.79	48,901	684	1.42%	48,588	15.220
2025	#N/A	742,132	84.72	0.63%	749,022	85.50	49,585	684	1.40%	49,272	15.062
2026	#N/A	746,844	85.26	0.63%	757,654	86.49	50,269	684	1.38%	49,956	14.950
2027	#N/A	751,554	85.79	0.63%	764,979	87.33	50,953	684	1.36%	50,640	14.841
2028	#N/A	758,325	86.33	0.63%	775,717	88.31	51,637	684	1.34%	51,324	14.775
2029	#N/A	760,912	86.86	0.62%	780,871	89.14	52,321	684	1.32%	52,008	14.631
2030	#N/A	765,560	87.39	0.61%	789,440	90.12	53,005	684	1.31%	52,692	14.529
2031	#N/A	770,294	87.93	0.62%	796,788	90.96	53,689	684	1.29%	53,376	14.432
AARG %[1] (2022-2026)			0.64%								-0.73%
AARG %[1] (2022-2031)			0.63%								-0.71%

1) AARG % = Annual Average Rate of Growth Percentage

6.2 Small General

The forecast for small general service retail load is 13.5 aMW in 2022 and decreasing to 12.7 aMW in 2031. The five and ten-year average annual rates of growth are -0.67% and -0.68% respectively. The ten-year forecast incudes 2.0 aMW of cumulative conservation. The first-year increase in the customer forecast is smaller than recent history because the District will be transferring 1 customer to the City of Richland in Summer of 2023. This rate-class was the most impacted by COVID-19 and is therefore difficult to forecast due to lower loads and slowed customer growth since 2020. See **Figure 6-2** and **Table 6-2** for the ten-year forecast detail.

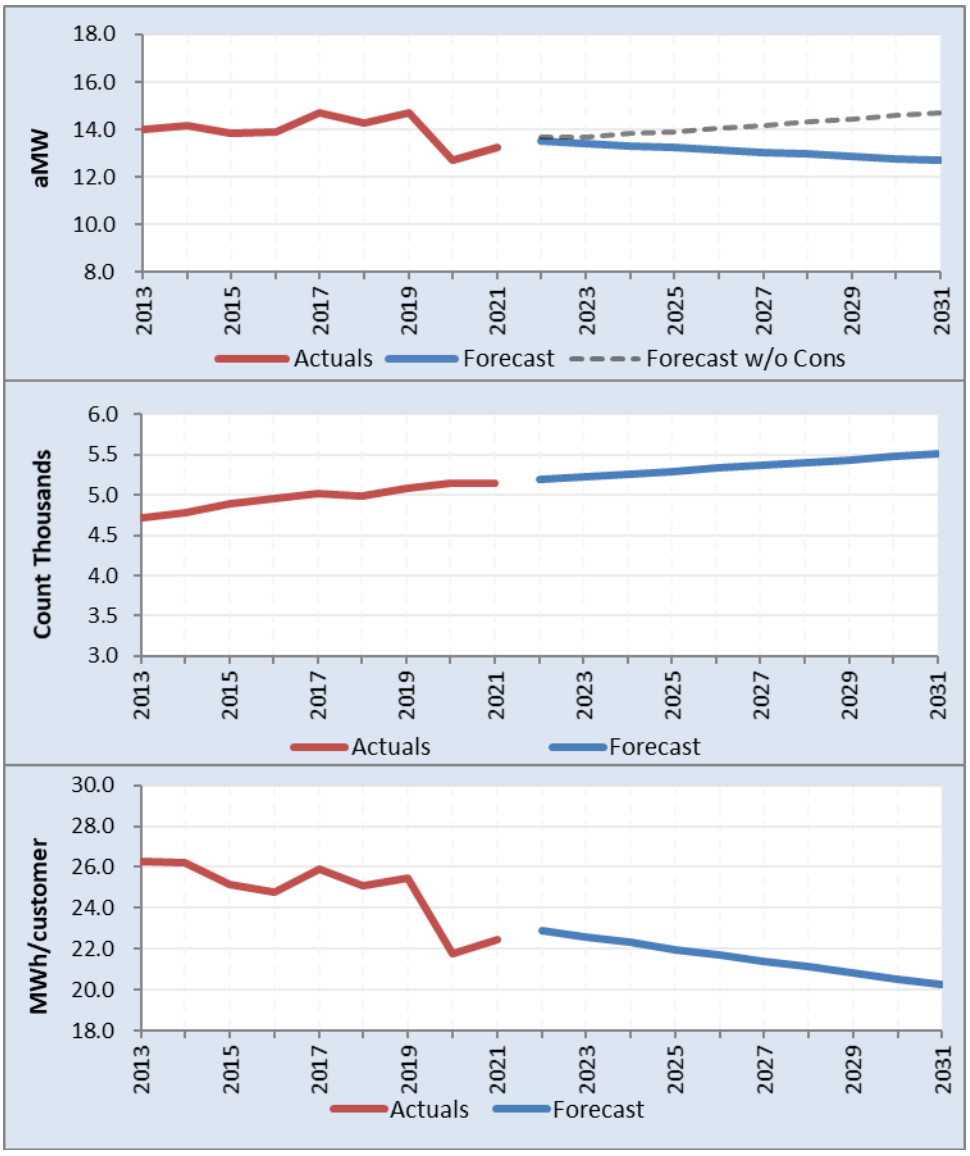


Figure 6-2 – Small General forecast of retail load, customers and usage per customer

Table 6-2 – Small General forecast of retail load, customers and usage per customer

Calendar Year	Historical Energy (MWh)	Forecast Energy (MWh)	Average Power (aMW)	Average Power % Change	Forecast without Conservation (MWh)	Forecast without Conservation (aMW)	Year-End Customer Count	Year-End Customer Change	1-Year % Change	Average Customer Count	Usage Per Customer (MWh)
2005	114,710	#N/A	13.09	-0.48%	#N/A	#N/A	4,128	#N/A	#N/A	4,144	27.681
2006	112,705	#N/A	12.87	-1.75%	#N/A	#N/A	4,232	104	2.52%	4,169	27.034
2007	115,049	#N/A	13.13	2.08%	#N/A	#N/A	4,324	92	2.17%	4,295	26.787
2008	115,616	#N/A	13.16	0.22%	#N/A	#N/A	4,445	121	2.80%	4,385	26.366
2009	121,580	#N/A	13.88	5.45%	#N/A	#N/A	4,484	39	0.88%	4,460	27.260
2010	113,483	#N/A	12.95	-6.66%	#N/A	#N/A	4,528	44	0.98%	4,503	25.202
2011	118,338	#N/A	13.51	4.28%	#N/A	#N/A	4,576	48	1.06%	4,553	25.991
2012	119,421	#N/A	13.60	0.64%	#N/A	#N/A	4,652	76	1.66%	4,610	25.905
2013	122,928	#N/A	14.03	3.22%	#N/A	#N/A	4,709	57	1.23%	4,682	26.255
2014	124,285	#N/A	14.19	1.10%	#N/A	#N/A	4,784	75	1.59%	4,741	26.215
2015	121,498	#N/A	13.87	-2.24%	#N/A	#N/A	4,883	99	2.07%	4,828	25.165
2016	121,868	#N/A	13.87	0.03%	#N/A	#N/A	4,949	66	1.35%	4,915	24.795
2017	129,054	#N/A	14.73	6.19%	#N/A	#N/A	5,011	62	1.25%	4,977	25.930
2018	124,864	#N/A	14.25	-3.25%	#N/A	#N/A	4,991	-20	-0.40%	4,972	25.114
2019	128,836	#N/A	14.71	3.18%	#N/A	#N/A	5,081	90	1.80%	5,055	25.487
2020	111,746	#N/A	12.72	-13.50%	#N/A	#N/A	5,146	65	1.28%	5,134	21.766
2021	116,212	#N/A	13.27	4.28%	#N/A	#N/A	5,148	2	0.04%	5,169	22.483
2022	#N/A	118,301	13.50	1.80%	119,785	13.67	5,185	37	0.72%	5,169	22.889
2023	#N/A	117,553	13.42	-0.63%	120,027	13.70	5,220	35	0.68%	5,204	22.589
2024	#N/A	117,078	13.33	-0.68%	121,516	13.83	5,256	36	0.69%	5,240	22.345
2025	#N/A	115,969	13.24	-0.68%	121,698	13.89	5,292	36	0.68%	5,276	21.983
2026	#N/A	115,181	13.15	-0.68%	123,306	14.08	5,328	36	0.68%	5,312	21.685
2027	#N/A	114,350	13.05	-0.72%	124,071	14.16	5,364	36	0.68%	5,348	21.384
2028	#N/A	113,907	12.97	-0.66%	126,057	14.35	5,400	36	0.67%	5,384	21.159
2029	#N/A	112,803	12.88	-0.70%	126,517	14.44	5,436	36	0.67%	5,420	20.814
2030	#N/A	112,010	12.79	-0.70%	128,119	14.63	5,472	36	0.66%	5,456	20.532
2031	#N/A	111,225	12.70	-0.70%	128,931	14.72	5,508	36	0.66%	5,492	20.254
AARG %[1] (2022-2026)			-0.67%								-1.34%
AARG %[1] (2022-2031)			-0.68%								-1.35%

1) AARG % = Annual Average Rate of Growth Percentage

6.3 Medium General

The forecast for medium general service retail load is 20.8 aMW in 2022 and sustaining to 20.8 aMW in 2031. The five and ten-year average annual rates of growth are 0.23% and 0.01% respectively. The ten-year forecast incudes nearly 3.0 aMW of cumulative conservation. The forecasted change in customers is an increase of about 11 customers in 2022. See **Figure 6-3** and **Table 6-3** for the ten-year forecast detail.

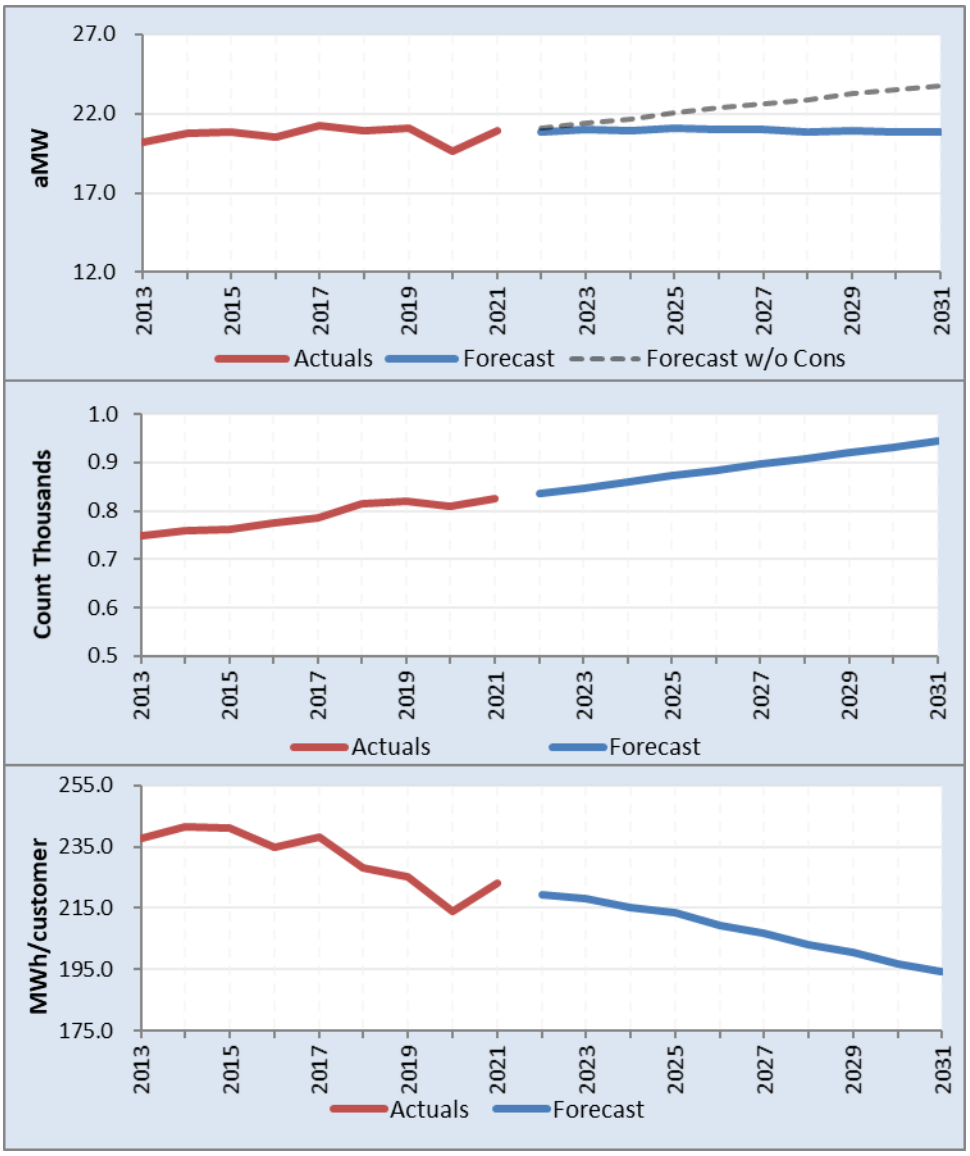


Figure 6-3 – Medium General forecast of retail load, customers and usage per customer

Table 6-3 – Medium General forecast of retail load, customers and usage per customer

Calendar Year	Historical Energy (MWh)	Forecast Energy (MWh)	Average Power (aMW)	Average Power % Change	Forecast without Conservation (MWh)	Forecast without Conservation (aMW)	Year-End Customer Count	Year-End Customer Change	1-Year % Change	Average Customer Count	Usage Per Customer (MWh)
2005	164,043	#N/A	18.73	-1.87%	#N/A	#N/A	627	#N/A	#N/A	637	257.524
2006	160,440	#N/A	18.32	-2.20%	#N/A	#N/A	641	14	2.23%	636	252.263
2007	165,186	#N/A	18.86	2.96%	#N/A	#N/A	665	24	3.74%	654	252.577
2008	169,571	#N/A	19.30	2.37%	#N/A	#N/A	683	18	2.71%	676	250.845
2009	175,265	#N/A	20.01	3.64%	#N/A	#N/A	707	24	3.51%	695	252.179
2010	170,868	#N/A	19.51	-2.51%	#N/A	#N/A	725	18	2.55%	718	237.977
2011	175,463	#N/A	20.03	2.69%	#N/A	#N/A	747	22	3.03%	732	239.704
2012	175,999	#N/A	20.04	0.03%	#N/A	#N/A	742	-5	-0.67%	747	235.607
2013	177,250	#N/A	20.23	0.99%	#N/A	#N/A	750	8	1.08%	746	237.601
2014	182,044	#N/A	20.78	2.70%	#N/A	#N/A	758	8	1.07%	754	241.437
2015	182,610	#N/A	20.85	0.31%	#N/A	#N/A	762	4	0.53%	758	240.911
2016	180,467	#N/A	20.54	-1.44%	#N/A	#N/A	775	13	1.71%	768	234.983
2017	186,155	#N/A	21.25	3.43%	#N/A	#N/A	785	10	1.29%	782	238.050
2018	183,125	#N/A	20.90	-1.63%	#N/A	#N/A	815	30	3.82%	803	228.051
2019	184,797	#N/A	21.10	0.91%	#N/A	#N/A	821	6	0.74%	820	225.362
2020	172,572	#N/A	19.65	-6.87%	#N/A	#N/A	809	-12	-1.46%	806	214.110
2021	183,223	#N/A	20.92	6.46%	#N/A	#N/A	825	16	1.98%	821	223.171
2022	#N/A	182,322	20.81	-0.49%	184,497	21.06	836	11	1.33%	831	219.533
2023	#N/A	183,901	20.99	0.87%	187,526	21.41	848	12	1.44%	843	218.280
2024	#N/A	184,026	20.95	-0.21%	190,530	21.69	860	12	1.42%	855	215.361
2025	#N/A	184,890	21.11	0.74%	193,284	22.06	872	12	1.40%	867	213.376
2026	#N/A	184,033	21.01	-0.46%	195,936	22.37	884	12	1.38%	879	209.485
2027	#N/A	184,289	21.04	0.14%	198,532	22.66	896	12	1.36%	891	206.950
2028	#N/A	183,396	20.88	-0.76%	201,197	22.90	908	12	1.34%	903	203.209
2029	#N/A	183,463	20.94	0.31%	203,556	23.24	920	12	1.32%	915	200.616
2030	#N/A	182,381	20.82	-0.59%	205,983	23.51	932	12	1.30%	927	196.850
2031	#N/A	182,413	20.82	0.02%	208,354	23.78	944	12	1.29%	939	194.366
AARG %[1] (2022-2026)			0.23%								-1.16%
AARG %[1] (2022-2031)			0.01%								-1.34%

1) AARG % = Annual Average Rate of Growth Percentage

6.4 Large General

The forecast for large general service retail load is 27.8 aMW in 2022 and increasing to 29.2 aMW in 2031. The five and ten-year average annual rates of growth are 0.89% and 0.55% respectively. The ten-year forecast incudes 3.71 aMW of cumulative conservation. The forecasted change in customers is an increase of about 4 customers in 2022. See **Figure 6-4** and **Table 6-4** for the ten-year forecast detail.

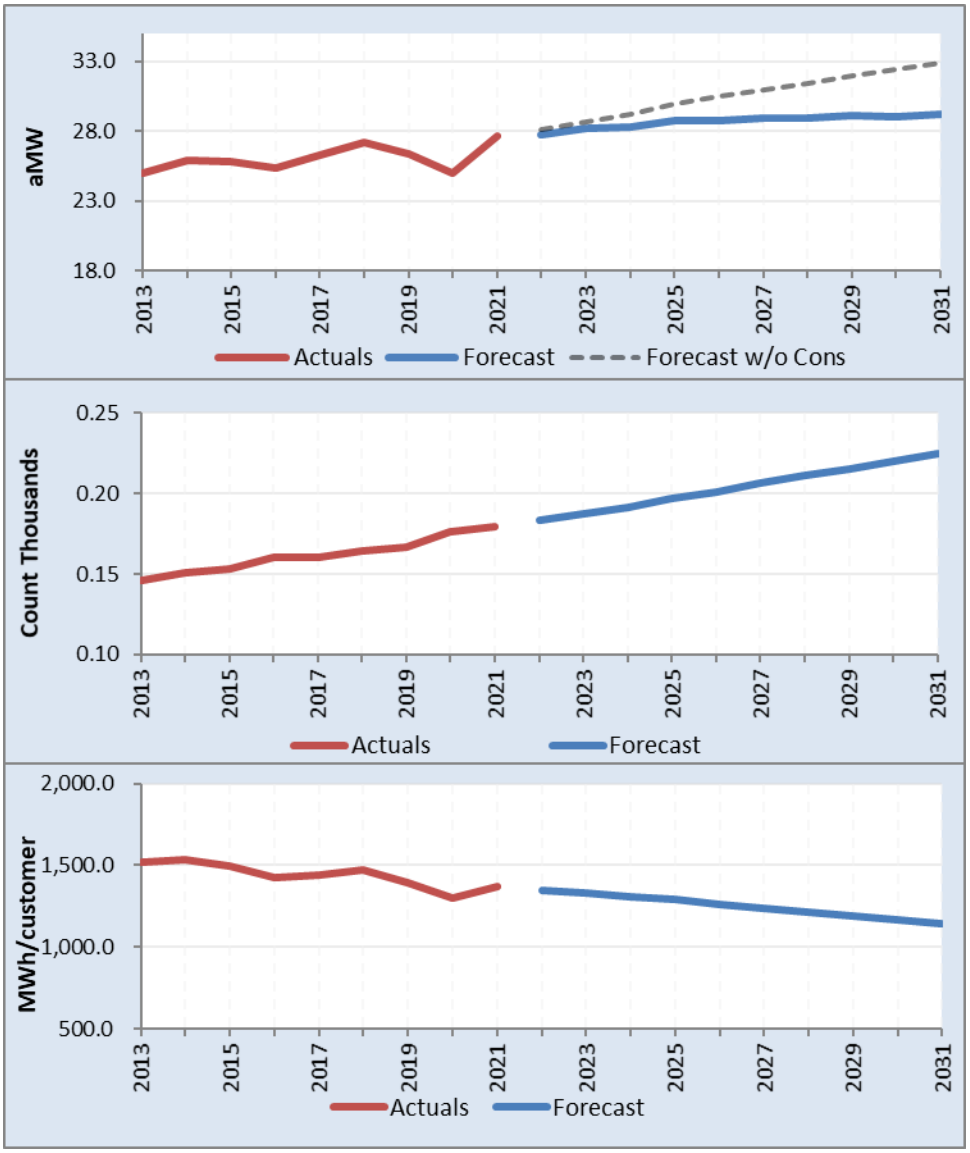


Figure 6-4 – Large General forecast of retail load, customers and usage per customer

Table 6-4 – Large General forecast of retail load, customers and usage per customer

Calendar Year	Historical Energy (MWh)	Forecast Energy (MWh)	Average Power (aMW)	Average Power % Change	Forecast without Conservation (MWh)	Forecast without Conservation (aMW)	Year-End Customer Count	Year-End Customer Change	1-Year % Change	Average Customer Count	Usage Per Customer (MWh)
2005	242,555	#N/A	27.69	1.26%	#N/A	#N/A	123	#N/A	#N/A	122	1,988.160
2006	236,908	#N/A	27.04	-2.33%	#N/A	#N/A	127	4	3.25%	126	1,880.220
2007	223,317	#N/A	25.49	-5.74%	#N/A	#N/A	131	4	3.15%	128	1,744.660
2008	224,958	#N/A	25.61	0.46%	#N/A	#N/A	132	1	0.76%	131	1,717.234
2009	233,410	#N/A	26.65	4.04%	#N/A	#N/A	135	3	2.27%	134	1,741.869
2010	218,686	#N/A	24.96	-6.31%	#N/A	#N/A	135	0	0.00%	135	1,619.899
2011	209,669	#N/A	23.93	-4.12%	#N/A	#N/A	141	6	4.44%	136	1,541.682
2012	217,377	#N/A	24.75	3.39%	#N/A	#N/A	143	2	1.42%	142	1,530.826
2013	219,315	#N/A	25.04	1.17%	#N/A	#N/A	146	3	2.10%	144	1,523.024
2014	226,679	#N/A	25.88	3.36%	#N/A	#N/A	151	5	3.42%	148	1,531.617
2015	226,175	#N/A	25.82	-0.22%	#N/A	#N/A	153	2	1.32%	151	1,497.847
2016	223,268	#N/A	25.42	-1.56%	#N/A	#N/A	160	7	4.58%	157	1,422.089
2017	230,674	#N/A	26.33	3.60%	#N/A	#N/A	160	0	0.00%	160	1,441.715
2018	238,606	#N/A	27.24	3.44%	#N/A	#N/A	164	4	2.50%	162	1,472.877
2019	231,448	#N/A	26.42	-3.00%	#N/A	#N/A	167	3	1.83%	166	1,394.263
2020	219,313	#N/A	24.97	-5.50%	#N/A	#N/A	176	9	5.39%	169	1,297.712
2021	241,981	#N/A	27.62	10.64%	#N/A	#N/A	179	3	1.70%	177	1,367.123
2022	#N/A	243,364	27.78	0.57%	246,091	28.09	183	4	2.23%	181	1,345.792
2023	#N/A	246,780	28.17	1.40%	251,325	28.69	187	4	2.19%	185	1,332.147
2024	#N/A	248,800	28.32	0.54%	256,954	29.25	191	4	2.14%	190	1,308.325
2025	#N/A	252,052	28.77	1.58%	262,576	29.97	197	6	3.14%	195	1,290.919
2026	#N/A	252,159	28.79	0.04%	267,084	30.49	201	4	2.03%	200	1,262.375
2027	#N/A	253,570	28.95	0.56%	271,428	30.98	206	5	2.49%	204	1,241.469
2028	#N/A	253,916	28.91	-0.14%	276,235	31.45	211	5	2.43%	209	1,213.456
2029	#N/A	254,967	29.11	0.69%	280,159	31.98	215	4	1.90%	214	1,192.826
2030	#N/A	254,363	29.04	-0.24%	283,956	32.42	220	5	2.33%	218	1,165.467
2031	#N/A	255,622	29.18	0.50%	288,149	32.89	225	5	2.27%	223	1,145.005
AARG %[1] (2022-2026)			0.89%								-1.59%
AARG %[1] (2022-2031)			0.55%								-1.78%

1) AARG % = Annual Average Rate of Growth Percentage

6.5 Large Industrial

The forecast for large industrial service retail load in 2022 is 7.34 aMW and is estimated to remain flat over the ten-year forecast period, with no incremental conservation and no additional customers added. See **Figure 6-5** and **Table 6-5** for the ten-year forecast detail.

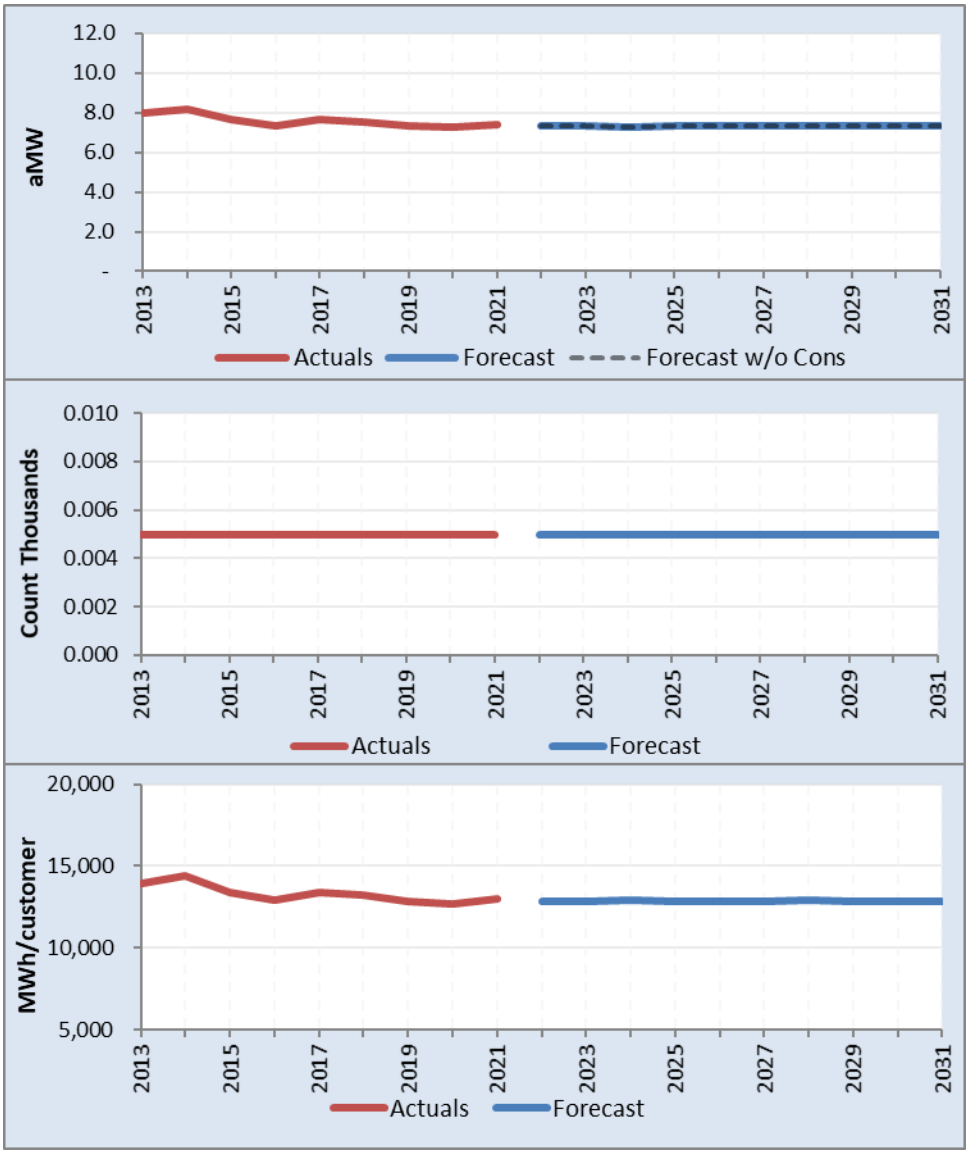


Figure 6-5 – Large Industrial forecast of retail load, customers and usage per customer

Table 6-5 – Large Industrial forecast of retail load, customers and usage per customer

Calendar Year	Historical Energy (MWh)	Forecast Energy (MWh)	Average Power (aMW)	Average Power % Change	Forecast without Conservation (MWh)	Forecast without Conservation (aMW)	Year-End Customer Count	Year-End Customer Change	1-Year % Change	Average Customer Count	Usage Per Customer (MWh)
2005	53,286	#N/A	6.08	-23.10%	#N/A	#N/A	5	#N/A	#N/A	5	10,657.159
2006	37,456	#N/A	4.28	-29.71%	#N/A	#N/A	5	0	0.00%	5	7,491.183
2007	49,045	#N/A	5.60	30.94%	#N/A	#N/A	3	-2	-40.00%	5	9,809.030
2008	47,760	#N/A	5.44	-2.89%	#N/A	#N/A	5	2	66.67%	5	9,552.059
2009	38,909	#N/A	4.44	-18.31%	#N/A	#N/A	5	0	0.00%	5	7,781.815
2010	55,365	#N/A	6.32	42.29%	#N/A	#N/A	5	0	0.00%	5	11,072.932
2011	65,411	#N/A	7.47	18.15%	#N/A	#N/A	5	0	0.00%	5	13,082.162
2012	70,575	#N/A	8.03	7.60%	#N/A	#N/A	5	0	0.00%	5	14,115.033
2013	69,803	#N/A	7.97	-0.82%	#N/A	#N/A	5	0	0.00%	5	13,960.556
2014	71,869	#N/A	8.20	2.96%	#N/A	#N/A	5	0	0.00%	5	14,373.897
2015	66,942	#N/A	7.64	-6.86%	#N/A	#N/A	5	0	0.00%	5	13,388.377
2016	64,612	#N/A	7.36	-3.74%	#N/A	#N/A	5	0	0.00%	5	12,922.450
2017	67,084	#N/A	7.66	4.11%	#N/A	#N/A	5	0	0.00%	5	13,416.822
2018	65,997	#N/A	7.53	-1.62%	#N/A	#N/A	5	0	0.00%	5	13,199.344
2019	64,318	#N/A	7.34	-2.54%	#N/A	#N/A	5	0	0.00%	5	12,863.616
2020	63,625	#N/A	7.24	-1.35%	#N/A	#N/A	5	0	0.00%	5	12,725.056
2021	65,084	#N/A	7.43	2.57%	#N/A	#N/A	5	0	0.00%	5	13,016.760
2022	#N/A	64,295	7.34	-1.21%	64,295	7.34	5	0	0.00%	5	12,859.003
2023	#N/A	64,298	7.34	0.01%	64,298	7.34	5	0	0.00%	5	12,859.699
2024	#N/A	64,470	7.34	-0.01%	64,470	7.34	5	0	0.00%	5	12,894.064
2025	#N/A	64,297	7.34	0.00%	64,297	7.34	5	0	0.00%	5	12,859.337
2026	#N/A	64,300	7.34	0.01%	64,300	7.34	5	0	0.00%	5	12,860.032
2027	#N/A	64,295	7.34	-0.01%	64,295	7.34	5	0	0.00%	5	12,858.975
2028	#N/A	64,475	7.34	0.01%	64,475	7.34	5	0	0.00%	5	12,895.059
2029	#N/A	64,302	7.34	0.00%	64,302	7.34	5	0	0.00%	5	12,860.365
2030	#N/A	64,297	7.34	-0.01%	64,297	7.34	5	0	0.00%	5	12,859.308
2031	#N/A	64,300	7.34	0.01%	64,300	7.34	5	0	0.00%	5	12,860.003
AARG %[1] (2022-2026)			0.00%								0.00%
AARG %[1] (2022-2031)			0.00%								0.00%

6.6 Small Irrigation

The forecast for small irrigation retail load is 1.7 aMW in 2022 and sustaining 1.7 aMW into 2031. The five and ten-year average annual rates of growth are -0.43% and -0.40% respectively, due to a small, expected reduction in load (less than 0.1 aMW) over the 10 year period. The forecasted change in customers is expected to lose about 3-4 customers annually. The ten-year forecast does not include any conservation See **Figure 6-6** and **Table 6-6** for the ten-year forecast detail.

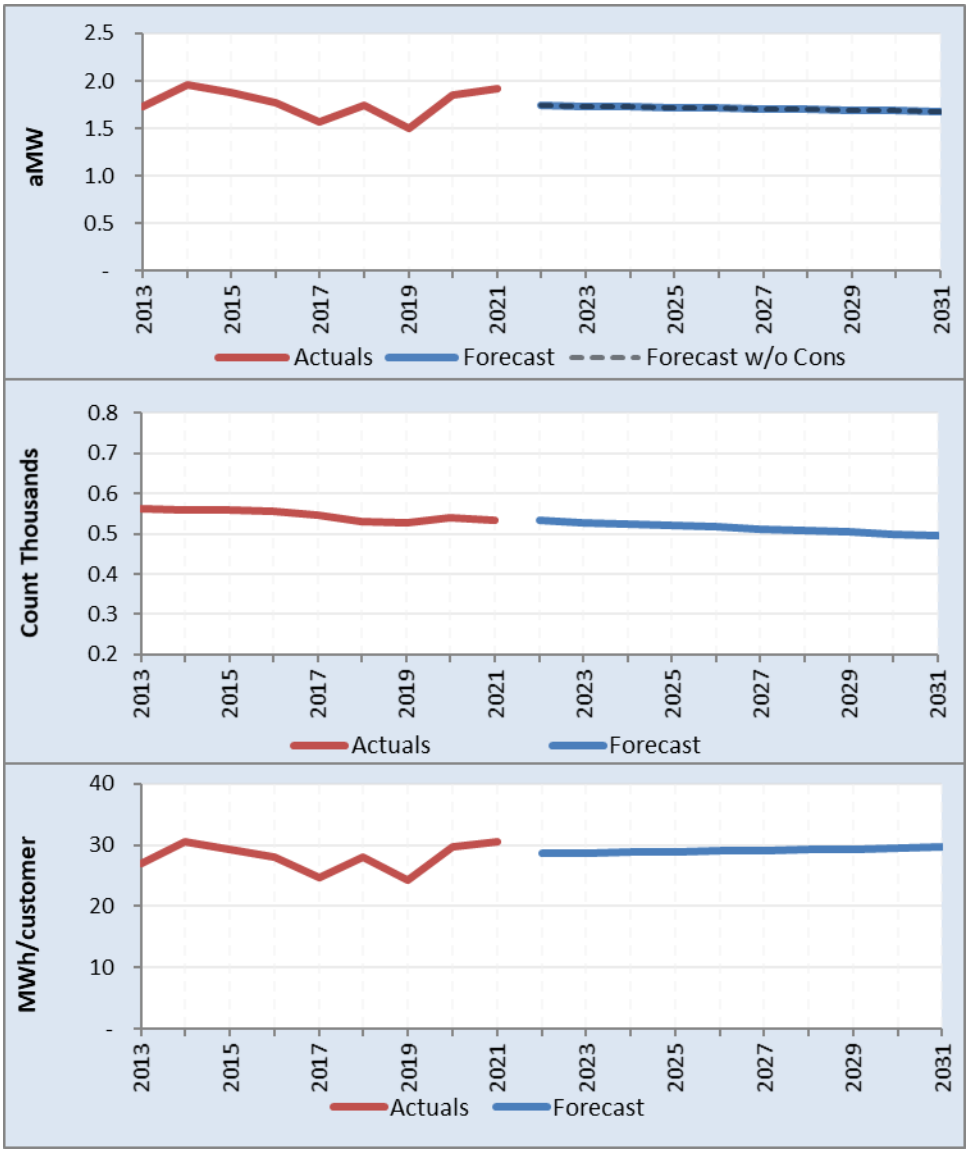


Figure 6-6 – Small Irrigation forecast of retail load, customers and usage per customer

Table 6-6 – Small Irrigation forecast of retail load, customers and usage per customer

Calendar Year	Historical Energy (MWh)	Forecast Energy (MWh)	Average Power (aMW)	Average Power % Change	Forecast without Conservation (MWh)	Forecast without Conservation (aMW)	Year-End Customer Count	Year-End Customer Change	1-Year % Change	Average Customer Count	Usage Per Customer (MWh)
2005	15,724	#N/A	1.80	4.62%	#N/A	#N/A	619	#N/A	#N/A	622	25.280
2006	14,305	#N/A	1.63	-9.03%	#N/A	#N/A	602	-17	-2.75%	614	23.298
2007	15,849	#N/A	1.81	10.79%	#N/A	#N/A	609	7	1.16%	607	26.110
2008	16,043	#N/A	1.83	0.95%	#N/A	#N/A	615	6	0.99%	615	26.086
2009	16,884	#N/A	1.93	5.53%	#N/A	#N/A	610	-5	-0.81%	615	27.453
2010	14,446	#N/A	1.65	-14.44%	#N/A	#N/A	594	-16	-2.62%	602	23.997
2011	14,607	#N/A	1.67	1.11%	#N/A	#N/A	573	-21	-3.54%	582	25.097
2012	15,165	#N/A	1.73	3.54%	#N/A	#N/A	555	-18	-3.14%	563	26.936
2013	15,211	#N/A	1.74	0.58%	#N/A	#N/A	563	8	1.44%	564	26.970
2014	17,209	#N/A	1.96	13.13%	#N/A	#N/A	559	-4	-0.71%	563	30.566
2015	16,425	#N/A	1.87	-4.56%	#N/A	#N/A	558	-1	-0.18%	560	29.330
2016	15,597	#N/A	1.78	-5.30%	#N/A	#N/A	556	-2	-0.36%	558	27.952
2017	13,754	#N/A	1.57	-11.57%	#N/A	#N/A	546	-10	-1.80%	557	24.694
2018	15,312	#N/A	1.75	11.32%	#N/A	#N/A	529	-17	-3.11%	546	28.043
2019	13,199	#N/A	1.51	-13.79%	#N/A	#N/A	528	-1	-0.19%	542	24.353
2020	16,316	#N/A	1.86	23.28%	#N/A	#N/A	540	12	2.27%	548	29.774
2021	16,768	#N/A	1.91	3.05%	#N/A	#N/A	535	-5	-0.93%	549	30.543
2022	#N/A	15,267	1.74	-8.95%	15,267	1.74	532	-3	-0.56%	534	28.617
2023	#N/A	15,198	1.73	-0.45%	15,198	1.73	528	-4	-0.75%	530	28.703
2024	#N/A	15,192	1.73	-0.31%	15,192	1.73	524	-4	-0.76%	526	28.909
2025	#N/A	15,067	1.72	-0.55%	15,067	1.72	520	-4	-0.76%	522	28.891
2026	#N/A	15,004	1.71	-0.41%	15,004	1.71	516	-4	-0.77%	518	28.993
2027	#N/A	14,944	1.71	-0.40%	14,944	1.71	512	-4	-0.78%	514	29.102
2028	#N/A	14,949	1.70	-0.24%	14,949	1.70	508	-4	-0.78%	510	29.341
2029	#N/A	14,830	1.69	-0.53%	14,830	1.69	504	-4	-0.79%	506	29.336
2030	#N/A	14,776	1.69	-0.36%	14,776	1.69	500	-4	-0.79%	502	29.463
2031	#N/A	14,724	1.68	-0.35%	14,724	1.68	496	-4	-0.80%	498	29.596
AARG %[1] (2022-2026)			-0.43%								0.33%
AARG %[1] (2022-2031)			-0.40%								0.37%

1) AARG % = Annual Average Rate of Growth Percentage

6.7 Large Irrigation

The forecast for large irrigation retail load is 47.9 aMW in 2022 and declines to 47.8 aMW in 2023 after 1 customer is expected to transfer to City of Richland (COR). It is estimated to remain roughly flat over the ten-year forecast period, with no incremental conservation and no additional customers expected to be added. See

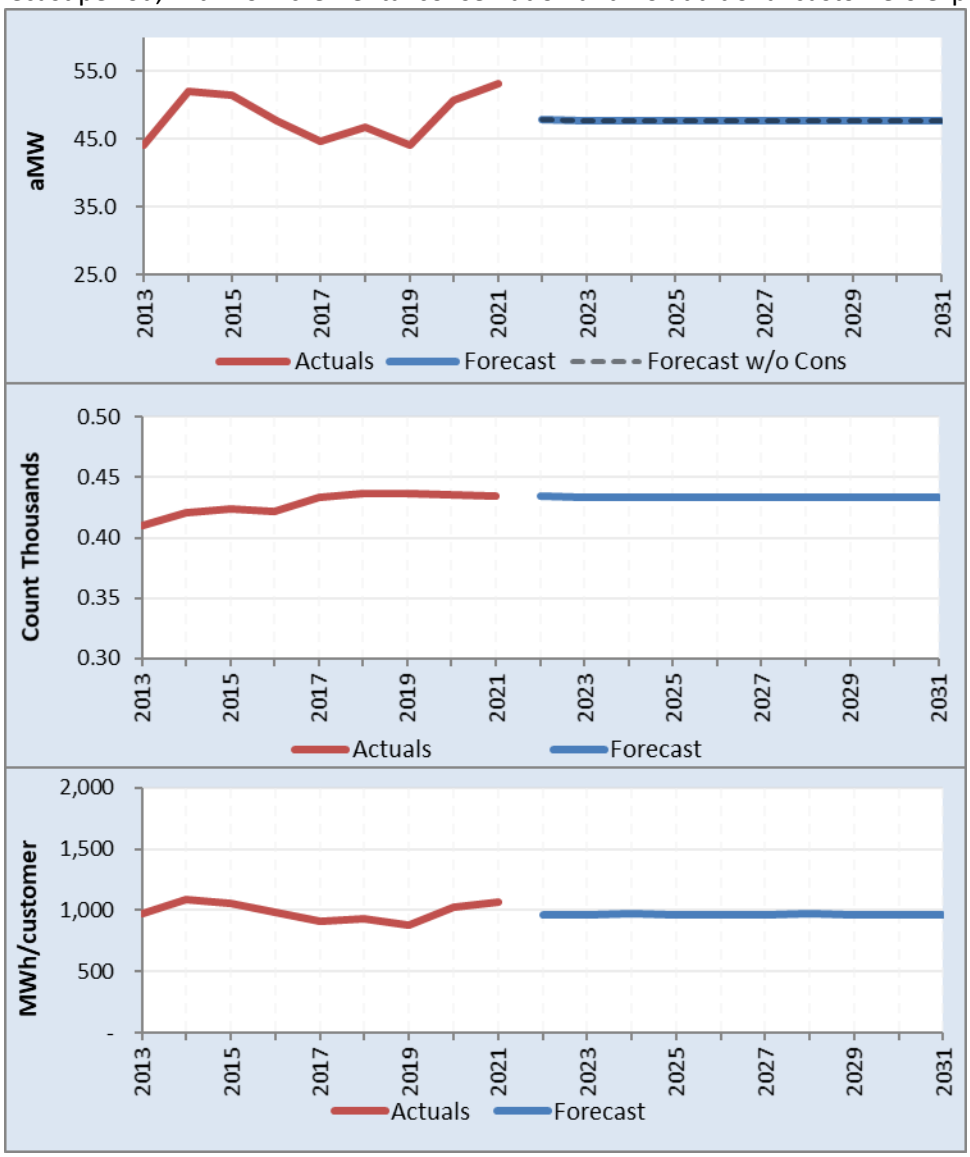


Figure 6-7 and **Table 6-7** for the ten-year forecast detail.

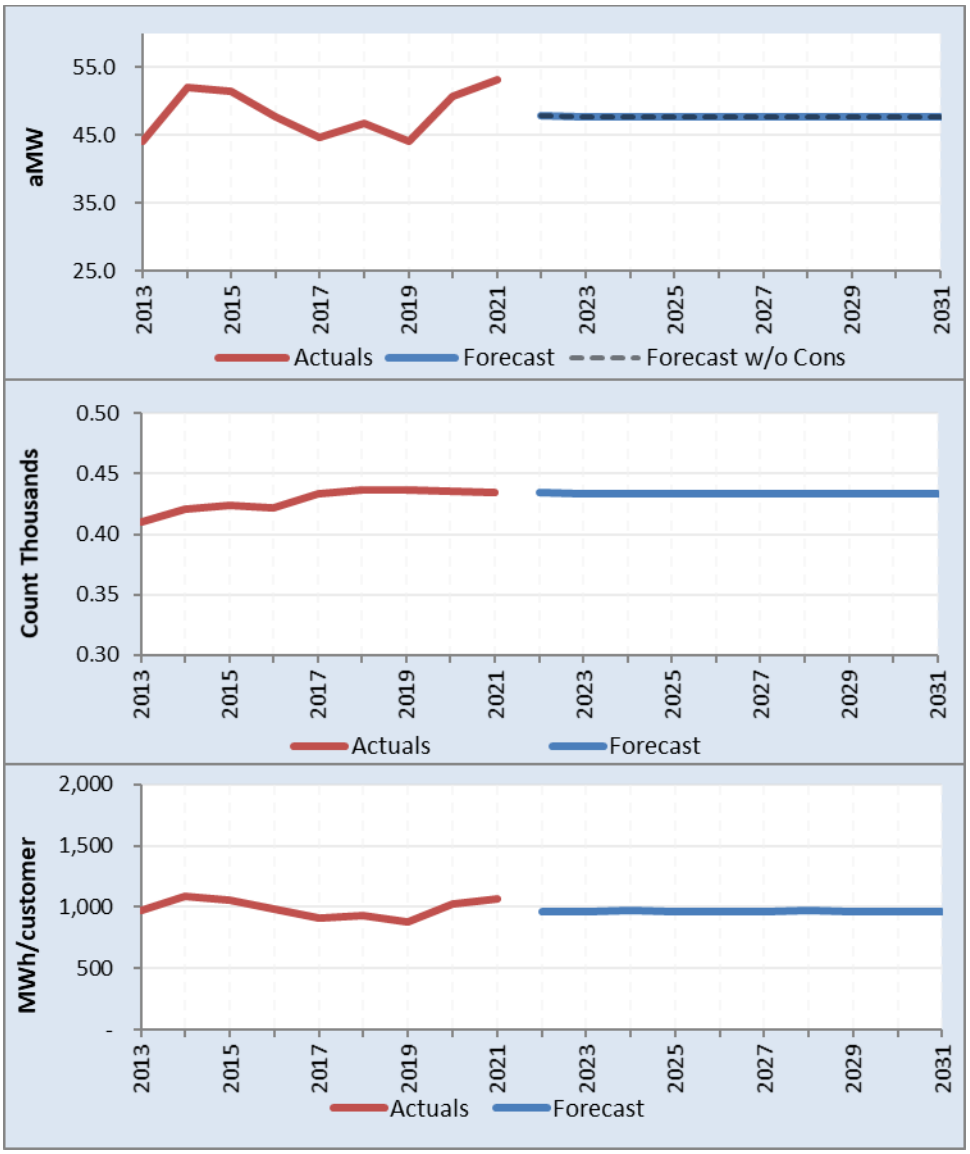


Figure 6-7 – Large Irrigation forecast of retail load, customers and usage per customer

Table 6-7 – Large Irrigation forecast of retail load, customers and usage per customer

Calendar Year	Historical Energy (MWh)	Forecast Energy (MWh)	Average Power (aMW)	Average Power % Change	Forecast without Conservation (MWh)	Forecast without Conservation (aMW)	Year-End Customer Count	Year-End Customer Change	1-Year % Change	Average Customer Count	Usage Per Customer (MWh)
2005	381,927	#N/A	43.60	6.30%	#N/A	#N/A	288	#N/A	#N/A	288	1,326.136
2006	353,743	#N/A	40.38	-7.38%	#N/A	#N/A	293	5	1.74%	291	1,215.612
2007	386,402	#N/A	44.11	9.23%	#N/A	#N/A	308	15	5.12%	302	1,279.477
2008	391,389	#N/A	44.56	1.01%	#N/A	#N/A	316	8	2.60%	313	1,250.444
2009	410,386	#N/A	46.85	5.14%	#N/A	#N/A	325	9	2.85%	323	1,270.544
2010	356,875	#N/A	40.74	-13.04%	#N/A	#N/A	322	-3	-0.92%	326	1,094.709
2011	367,393	#N/A	41.94	2.95%	#N/A	#N/A	334	12	3.73%	332	1,106.605
2012	370,573	#N/A	42.19	0.59%	#N/A	#N/A	355	21	6.29%	350	1,058.781
2013	387,408	#N/A	44.22	4.83%	#N/A	#N/A	410	55	15.49%	400	968.520
2014	455,435	#N/A	51.99	17.56%	#N/A	#N/A	421	11	2.68%	417	1,092.169
2015	451,777	#N/A	51.57	-0.80%	#N/A	#N/A	424	3	0.71%	426	1,060.510
2016	419,588	#N/A	47.77	-7.38%	#N/A	#N/A	422	-2	-0.47%	425	987.267
2017	392,051	#N/A	44.75	-6.31%	#N/A	#N/A	433	11	2.61%	430	911.746
2018	409,299	#N/A	46.72	4.40%	#N/A	#N/A	437	4	0.92%	437	936.611
2019	385,979	#N/A	44.06	-5.70%	#N/A	#N/A	437	0	0.00%	437	883.247
2020	444,958	#N/A	50.66	14.97%	#N/A	#N/A	436	-1	-0.23%	436	1,020.546
2021	465,974	#N/A	53.19	5.01%	#N/A	#N/A	434	-2	-0.46%	437	1,066.301
2022	#N/A	419,232	47.86	-10.03%	419,232	47.86	434	0	0.00%	434	965.973
2023	#N/A	418,652	47.79	-0.14%	418,652	47.79	433	-1	-0.23%	433	965.935
2024	#N/A	419,787	47.79	0.00%	419,787	47.79	433	0	0.00%	433	969.486
2025	#N/A	418,640	47.79	0.00%	418,640	47.79	433	0	0.00%	433	966.837
2026	#N/A	418,640	47.79	0.00%	418,640	47.79	433	0	0.00%	433	966.837
2027	#N/A	418,640	47.79	0.00%	418,640	47.79	433	0	0.00%	433	966.837
2028	#N/A	419,787	47.79	0.00%	419,787	47.79	433	0	0.00%	433	969.486
2029	#N/A	418,640	47.79	0.00%	418,640	47.79	433	0	0.00%	433	966.837
2030	#N/A	418,640	47.79	0.00%	418,640	47.79	433	0	0.00%	433	966.837
2031	#N/A	418,640	47.79	0.00%	418,640	47.79	433	0	0.00%	433	966.837
AARG %[1] (2022-2026)			-0.04%								0.02%
AARG %[1] (2022-2031)			-0.02%								0.01%

6.8 Street Lighting

The forecast for street lighting retail load is 0.27 aMW in 2022 and is estimated to remain flat over the ten-year forecast period, with no conservation measures and no additional customers expected be added. Note that new street lighting installations are typically metered and therefore would be classified as small general service. See **Figure 6-8** and **Table 6-8** for the ten-year forecast detail.

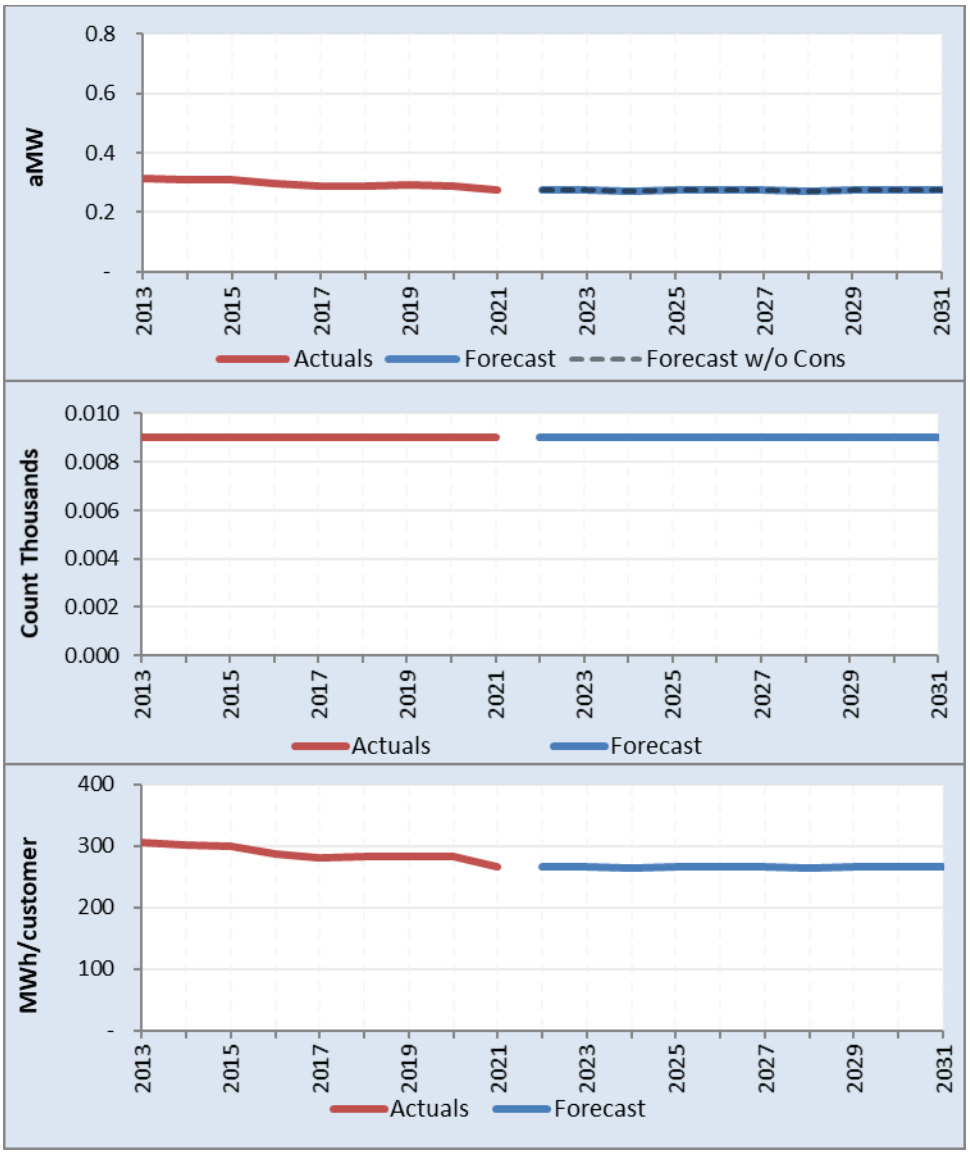


Figure 6-8 – Street Lighting forecast of retail load, customers and usage per customer

Table 6-8 – Street Lighting forecast of retail load, customers and usage per customer

Calendar Year	Historical Energy (MWh)	Forecast Energy (MWh)	Average Power (aMW)	Average Power % Change	Forecast without Conservation (MWh)	Forecast without Conservation (aMW)	Year-End Customer Count	Year-End Customer Change	1-Year % Change	Average Customer Count	Usage Per Customer (MWh)
2005	4,067	#N/A	0.46	3.06%	#N/A	#N/A	9	#N/A	#N/A	9	451.882
2006	4,084	#N/A	0.47	0.41%	#N/A	#N/A	9	0	0.00%	9	453.740
2007	4,151	#N/A	0.47	1.66%	#N/A	#N/A	9	0	0.00%	9	461.266
2008	4,218	#N/A	0.48	1.33%	#N/A	#N/A	9	0	0.00%	9	468.669
2009	4,268	#N/A	0.49	1.46%	#N/A	#N/A	9	0	0.00%	9	474.203
2010	4,339	#N/A	0.50	1.68%	#N/A	#N/A	9	0	0.00%	9	482.159
2011	5,532	#N/A	0.63	27.48%	#N/A	#N/A	9	0	0.00%	9	614.671
2012	4,136	#N/A	0.47	-25.43%	#N/A	#N/A	9	0	0.00%	9	459.597
2013	2,751	#N/A	0.31	-33.31%	#N/A	#N/A	9	0	0.00%	9	305.647
2014	2,721	#N/A	0.31	-1.10%	#N/A	#N/A	9	0	0.00%	9	302.278
2015	2,704	#N/A	0.31	-0.62%	#N/A	#N/A	9	0	0.00%	9	300.405
2016	2,589	#N/A	0.29	-4.50%	#N/A	#N/A	9	0	0.00%	9	287.682
2017	2,535	#N/A	0.29	-1.83%	#N/A	#N/A	9	0	0.00%	9	281.642
2018	2,537	#N/A	0.29	0.10%	#N/A	#N/A	9	0	0.00%	9	281.920
2019	2,546	#N/A	0.29	0.34%	#N/A	#N/A	9	0	0.00%	9	282.868
2020	2,547	#N/A	0.29	-0.22%	#N/A	#N/A	9	0	0.00%	9	283.029
2021	2,393	#N/A	0.27	-5.80%	#N/A	#N/A	9	0	0.00%	9	265.894
2022	#N/A	2,392	0.27	-0.06%	2,392	0.27	9	0	0.00%	9	265.723
2023	#N/A	2,392	0.27	0.00%	2,392	0.27	9	0	0.00%	9	265.723
2024	#N/A	2,391	0.27	-0.30%	2,391	0.27	9	0	0.00%	9	265.640
2025	#N/A	2,392	0.27	0.31%	2,392	0.27	9	0	0.00%	9	265.723
2026	#N/A	2,392	0.27	0.00%	2,392	0.27	9	0	0.00%	9	265.723
2027	#N/A	2,392	0.27	0.00%	2,392	0.27	9	0	0.00%	9	265.723
2028	#N/A	2,391	0.27	-0.30%	2,391	0.27	9	0	0.00%	9	265.640
2029	#N/A	2,392	0.27	0.31%	2,392	0.27	9	0	0.00%	9	265.723
2030	#N/A	2,392	0.27	0.00%	2,392	0.27	9	0	0.00%	9	265.723
2031	#N/A	2,392	0.27	0.00%	2,392	0.27	9	0	0.00%	9	265.723
AARG %[1] (2022-2026)			0.00%								0.00%
AARG %[1] (2022-2031)			0.00%								0.00%

1) AARG % = Annual Average Rate of Growth Percentage

6.9 Security Lighting

The forecast for security lighting retail load is 0.10 aMW in 2022. The five and ten-year average annual rates of growth are -2.15% and -1.96% respectively. No conservation measures and no additional customers are expected to be added. See **Figure 6-9** and **Table 6-9** for the ten-year forecast detail.

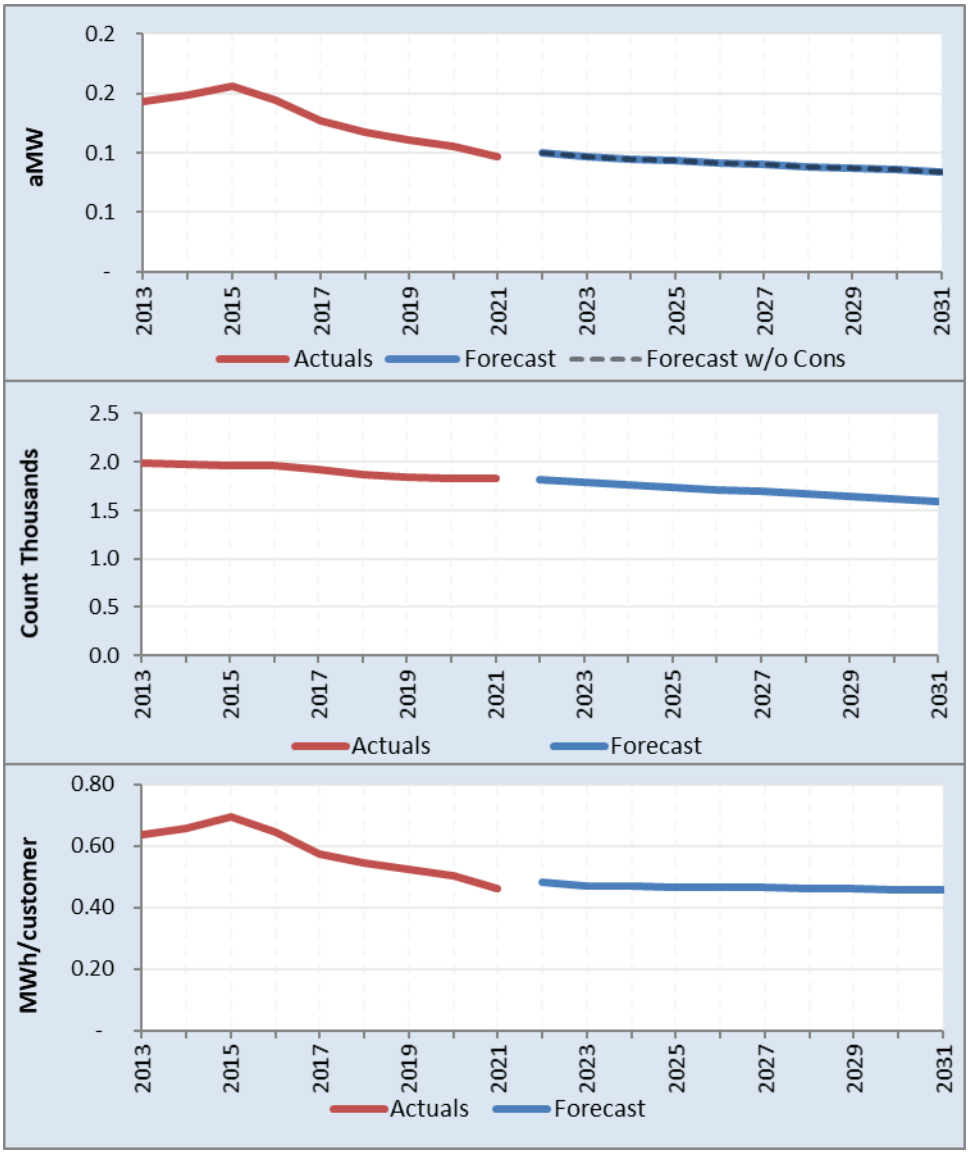


Figure 6-9 – Security Lighting forecast of retail load, customers and usage per customer

Table 6-9 – Security Lighting forecast of retail load, customers and usage per customer

Calendar Year	Historical Energy (MWh)	Forecast Energy (MWh)	Average Power (aMW)	Average Power % Change	Forecast without Conservation (MWh)	Forecast without Conservation (aMW)	Year-End Customer Count	Year-End Customer Change	1-Year % Change	Average Customer Count	Usage Per Customer (MWh)
2005	1,066	#N/A	0.12	-1.99%	#N/A	#N/A	1,920	#N/A	#N/A	1,925	0.554
2006	1,025	#N/A	0.12	-3.92%	#N/A	#N/A	1,916	-4	-0.21%	1,914	0.535
2007	1,028	#N/A	0.12	0.29%	#N/A	#N/A	1,933	17	0.89%	1,925	0.534
2008	1,036	#N/A	0.12	0.52%	#N/A	#N/A	1,928	-5	-0.26%	1,936	0.535
2009	1,045	#N/A	0.12	1.19%	#N/A	#N/A	1,947	19	0.99%	1,938	0.539
2010	1,068	#N/A	0.12	2.22%	#N/A	#N/A	1,963	16	0.82%	1,953	0.547
2011	1,087	#N/A	0.12	1.72%	#N/A	#N/A	1,966	3	0.15%	1,967	0.553
2012	1,084	#N/A	0.12	-0.56%	#N/A	#N/A	1,968	2	0.10%	1,965	0.552
2013	1,257	#N/A	0.14	16.34%	#N/A	#N/A	1,985	17	0.86%	1,973	0.637
2014	1,297	#N/A	0.15	3.12%	#N/A	#N/A	1,974	-11	-0.55%	1,978	0.656
2015	1,364	#N/A	0.16	5.19%	#N/A	#N/A	1,963	-11	-0.56%	1,967	0.693
2016	1,263	#N/A	0.14	-7.64%	#N/A	#N/A	1,958	-5	-0.25%	1,961	0.644
2017	1,112	#N/A	0.13	-11.72%	#N/A	#N/A	1,929	-29	-1.48%	1,943	0.572
2018	1,028	#N/A	0.12	-7.60%	#N/A	#N/A	1,870	-59	-3.06%	1,888	0.544
2019	969	#N/A	0.11	-5.68%	#N/A	#N/A	1,837	-33	-1.76%	1,854	0.523
2020	924	#N/A	0.11	-4.92%	#N/A	#N/A	1,826	-11	-0.60%	1,829	0.505
2021	847	#N/A	0.10	-8.12%	#N/A	#N/A	1,836	10	0.55%	1,833	0.462
2022	#N/A	878	0.10	3.65%	878	0.10	1,812	-24	-1.31%	1,823	0.481
2023	#N/A	846	0.10	-3.54%	846	0.10	1,788	-24	-1.32%	1,799	0.471
2024	#N/A	832	0.09	-1.98%	832	0.09	1,764	-24	-1.34%	1,775	0.469
2025	#N/A	819	0.09	-1.35%	819	0.09	1,740	-24	-1.36%	1,751	0.467
2026	#N/A	805	0.09	-1.71%	805	0.09	1,716	-24	-1.38%	1,727	0.466
2027	#N/A	791	0.09	-1.74%	791	0.09	1,692	-24	-1.40%	1,703	0.464
2028	#N/A	776	0.09	-2.11%	776	0.09	1,668	-24	-1.42%	1,679	0.462
2029	#N/A	763	0.09	-1.46%	763	0.09	1,644	-24	-1.44%	1,655	0.461
2030	#N/A	749	0.09	-1.83%	749	0.09	1,620	-24	-1.46%	1,631	0.459
2031	#N/A	735	0.08	-1.87%	735	0.08	1,596	-24	-1.48%	1,607	0.457
AARG %[1] (2022-2026)			-2.15%								-0.82%
AARG %[1] (2022-2031)			-1.96%								-0.57%

1) AARG % = Annual Average Rate of Growth Percentage

6.10 Unmetered Flats

The forecast for unmetered flats retail load is 0.34 aMW in 2022 and is estimated to increase slowly over the ten-year forecast period to 0.36 by 2031. There are no expected conservation measures and approximately 2 additional customers are expected to be added annually. See **Figure 6-10** and **Table 6-10** for the ten-year forecast detail.

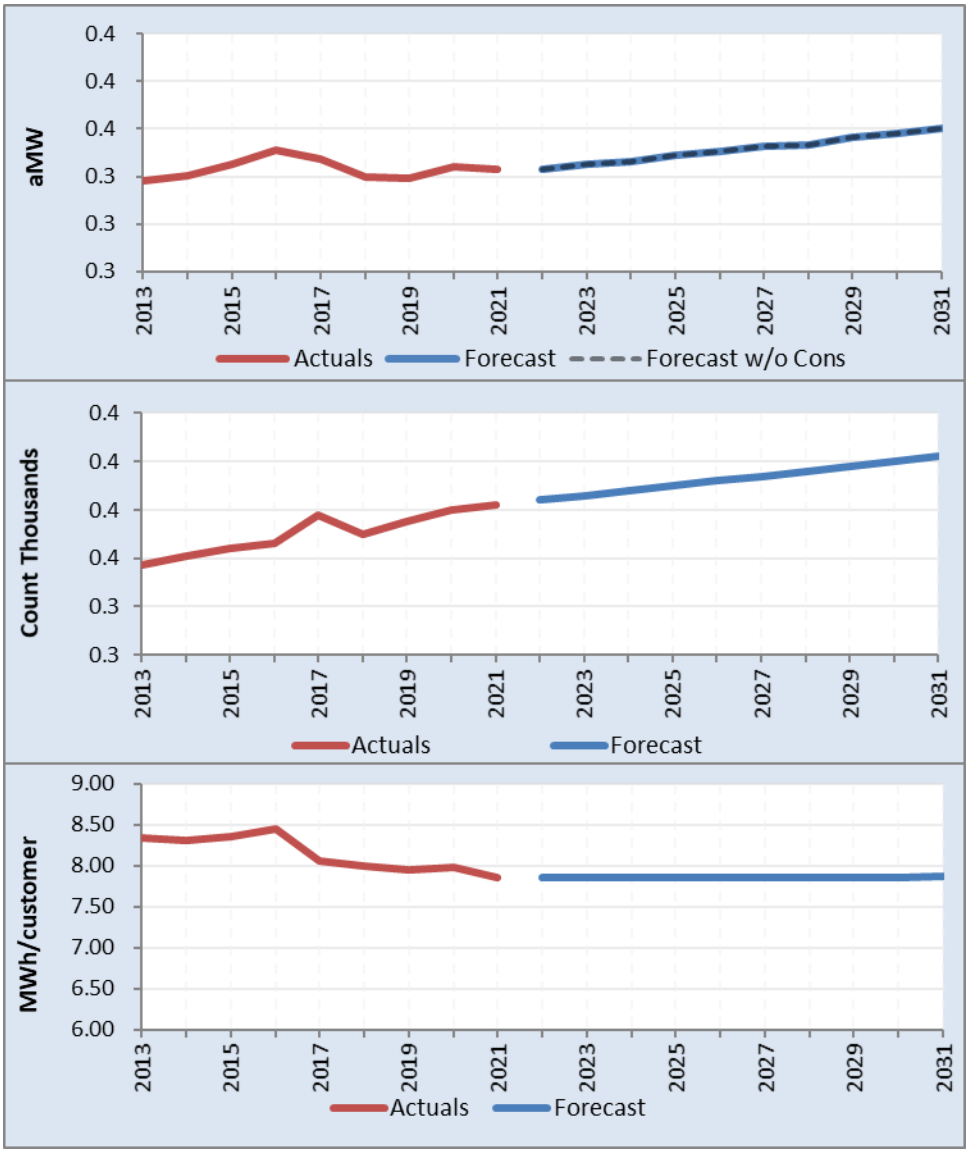


Figure 6-10 – Unmetered Flats forecast of retail load, customers and usage per customer

Table 6-10 – Unmetered Flats forecast of retail load, customers and usage per customer

Calendar Year	Historical Energy (MWh)	Forecast Energy (MWh)	Average Power (aMW)	Average Power % Change	Forecast without Conservation (MWh)	Forecast without Conservation (aMW)	Year-End Customer Count	Year-End Customer Change	1-Year % Change	Average Customer Count	Usage Per Customer (MWh)
2005	2,492	#N/A	0.28	4.56%	#N/A	#N/A	352	#N/A	#N/A	353	7.059
2006	2,833	#N/A	0.32	13.70%	#N/A	#N/A	354	2	0.57%	353	8.026
2007	2,846	#N/A	0.32	0.47%	#N/A	#N/A	354	0	0.00%	354	8.041
2008	2,848	#N/A	0.32	-0.21%	#N/A	#N/A	354	0	0.00%	354	8.046
2009	2,875	#N/A	0.33	1.22%	#N/A	#N/A	355	1	0.28%	354	8.122
2010	2,896	#N/A	0.33	0.72%	#N/A	#N/A	362	7	1.97%	358	8.089
2011	2,909	#N/A	0.33	0.46%	#N/A	#N/A	351	-11	-3.04%	359	8.103
2012	2,928	#N/A	0.33	0.36%	#N/A	#N/A	354	3	0.85%	353	8.294
2013	2,964	#N/A	0.34	1.50%	#N/A	#N/A	357	3	0.85%	355	8.348
2014	2,981	#N/A	0.34	0.57%	#N/A	#N/A	361	4	1.12%	359	8.302
2015	3,023	#N/A	0.35	1.41%	#N/A	#N/A	364	3	0.83%	362	8.350
2016	3,083	#N/A	0.35	1.72%	#N/A	#N/A	366	2	0.55%	365	8.447
2017	3,044	#N/A	0.35	-0.98%	#N/A	#N/A	378	12	3.28%	378	8.054
2018	2,975	#N/A	0.34	-2.28%	#N/A	#N/A	370	-8	-2.12%	372	7.997
2019	2,971	#N/A	0.34	-0.12%	#N/A	#N/A	375	5	1.35%	374	7.944
2020	3,023	#N/A	0.34	1.47%	#N/A	#N/A	380	5	1.33%	379	7.977
2021	3,003	#N/A	0.34	-0.39%	#N/A	#N/A	382	2	0.53%	382	7.862
2022	#N/A	3,004	0.34	0.03%	3,004	0.34	384	2	0.52%	383	7.850
2023	#N/A	3,023	0.35	0.63%	3,023	0.35	386	2	0.52%	385	7.852
2024	#N/A	3,039	0.35	0.25%	3,039	0.35	388	2	0.52%	387	7.853
2025	#N/A	3,056	0.35	0.82%	3,056	0.35	390	2	0.52%	389	7.855
2026	#N/A	3,072	0.35	0.53%	3,072	0.35	392	2	0.51%	391	7.857
2027	#N/A	3,088	0.35	0.53%	3,088	0.35	394	2	0.51%	393	7.858
2028	#N/A	3,104	0.35	0.24%	3,104	0.35	396	2	0.51%	395	7.859
2029	#N/A	3,121	0.36	0.81%	3,121	0.36	398	2	0.51%	397	7.861
2030	#N/A	3,137	0.36	0.52%	3,137	0.36	400	2	0.50%	399	7.863
2031	#N/A	3,153	0.36	0.52%	3,153	0.36	402	2	0.50%	401	7.864
AARG %[1] (2022-2026)			0.56%								0.02%
AARG %[1] (2022-2031)			0.54%								0.02%

1) AARG % = Annual Average Rate of Growth Percentage

7. Appendix A – Summary Tables

Table 7-1 – Total system historical and forecast of annual load, losses and peak demand

Calendar Year	Total Retail Load (aMW)			+ BPUD T&D[1] System Losses (aMW)	(%)	= Total Load at BPA Point-of-Delivery (aMW)			+ BPA Trans.[2] Loss Returns (aMW)	(%)	= Total Power Supply Requirement (aMW)			System Peak Hourly Demand (MW)		
2005	182.9			4.5	2.4%	187.5			#N/A	#N/A	#N/A			366.5		
2006	177.6			5.3	2.9%	182.9			#N/A	#N/A	#N/A			373.3		
2007	183.5			6.7	3.5%	190.2			#N/A	#N/A	#N/A			384.3		
2008	186.7			7.3	3.8%	194.0			#N/A	#N/A	#N/A			396.9		
2009	197.1			6.2	3.1%	203.3			#N/A	#N/A	#N/A			402.1		
2010	181.8			7.0	3.7%	188.9			#N/A	#N/A	#N/A			392.1		
2011	188.2			6.2	3.2%	194.3			#N/A	#N/A	#N/A			379.5		
2012	187.3			5.8	3.0%	193.1			3.5	1.8%	196.7			394.0		
2013	193.7			8.7	4.3%	202.4			3.3	1.6%	205.7			414.5		
2014	203.3			5.1	2.4%	208.4			3.5	1.7%	211.9			430.5		
2015	198.4			7.5	3.6%	205.9			3.4	1.7%	209.3			429.5		
2016	192.9			7.4	3.7%	200.3			3.2	1.6%	203.4			425.1		
2017	203.8			7.1	3.4%	210.9			3.2	1.5%	214.1			426.0		
2018	198.7			5.9	2.9%	204.7			3.2	1.6%	207.9			419.0		
2019	201.6			7.5	3.6%	209.1			4.1	1.9%	213.2			407.7		
2020	198.0			7.5	3.6%	205.5			3.2	1.5%	208.6			437.0		
2021	206.3			8.3	3.9%	214.6			3.1	1.4%	217.7			489.6		
Forecast	**Low**	**Base**	**High**	**aMW**	**%**	**Low**	**Base**	**High**	**aMW**	**%**	**Low**	**Base**	**High**	**Low**	**Base**	**High**
2022	193.6	202.9	212.1	7.0	3.4%	200.6	209.9	219.1	4.3	2.0%	204.9	214.2	223.4	405.7	424.1	442.6
2023	194.5	203.8	213.1	7.0	3.4%	201.6	210.8	220.1	4.3	2.0%	205.9	215.2	224.4	407.7	426.1	444.5
2024	195.1	204.4	213.7	7.0	3.4%	202.1	211.4	220.7	4.3	2.0%	206.4	215.8	225.0	410.1	428.4	446.8
2025	196.1	205.4	214.7	7.1	3.4%	203.1	212.5	221.8	4.3	2.0%	207.5	216.9	226.2	411.1	429.4	447.8
2026	196.4	205.8	215.1	7.1	3.4%	203.5	212.8	222.2	4.3	2.0%	207.8	217.3	226.5	411.9	430.2	448.5
2027	197.0	206.4	215.8	7.1	3.4%	204.1	213.5	222.9	4.4	2.0%	208.5	217.9	227.2	413.3	431.5	449.8
2028	197.2	206.6	216.0	7.1	3.4%	204.3	213.8	223.2	4.4	2.0%	208.7	218.2	227.5	415.0	433.3	451.6
2029	197.9	207.3	216.8	7.1	3.4%	205.0	214.5	223.9	4.4	2.0%	209.4	218.9	228.3	415.4	433.6	451.8
2030	198.1	207.6	217.0	7.2	3.4%	205.3	214.7	224.2	4.4	2.0%	209.7	219.2	228.6	416.0	434.2	452.4
2031	198.7	208.2	217.6	7.2	3.4%	205.9	215.3	224.8	4.4	2.0%	210.3	219.8	229.2	417.2	435.4	453.6

1) BPUD T&D = Benton P.U.D. Transmission & Distribution; Forcast loss factor is equal to the 10-year historical average.

2) BPA Trans. = Bonneville Power Administration Transmission; Forecast loss factor is per Schedule 11 of BPA's Open Access Transmission Tariff (OATT).

Table 7-2 – Historical & BASE case forecast of annual retail load (aMW) by customer class

Calendar Year	Residential	Small General	Medium General	Large General	Large Industrial	Small Irrigation	Large Irrigation	Street Lights	Security Lights	Unmetered Flats	Total System	Annual % Change
2005	71.1	13.1	18.7	27.7	6.1	1.8	43.6	0.5	0.1	0.3	182.9	0.62%
2006	72.2	12.9	18.3	27.0	4.3	1.6	40.4	0.5	0.1	0.3	177.6	-2.92%
2007	73.6	13.1	18.9	25.5	5.6	1.8	44.1	0.5	0.1	0.3	183.5	3.31%
2008	75.9	13.2	19.3	25.6	5.4	1.8	44.6	0.5	0.1	0.3	186.7	1.75%
2009	82.4	13.9	20.0	26.6	4.4	1.9	46.8	0.5	0.1	0.3	197.1	5.56%
2010	74.7	13.0	19.5	25.0	6.3	1.6	40.7	0.5	0.1	0.3	181.8	-7.74%
2011	78.5	13.5	20.0	23.9	7.5	1.7	41.9	0.6	0.1	0.3	188.2	3.49%
2012	76.0	13.6	20.0	24.7	8.0	1.7	42.2	0.5	0.1	0.3	187.3	-0.46%
2013	79.7	14.0	20.2	25.0	8.0	1.7	44.2	0.3	0.1	0.3	193.7	3.41%
2014	79.5	14.2	20.8	25.9	8.2	2.0	52.0	0.3	0.1	0.3	203.3	4.98%
2015	76.0	13.9	20.8	25.8	7.6	1.9	51.6	0.3	0.2	0.3	198.4	-2.43%
2016	75.3	13.9	20.5	25.4	7.4	1.8	47.8	0.3	0.1	0.4	192.9	-2.79%
2017	86.7	14.7	21.3	26.3	7.7	1.6	44.8	0.3	0.1	0.3	203.8	5.66%
2018	79.6	14.3	20.9	27.2	7.5	1.7	46.7	0.3	0.1	0.3	198.7	-2.48%
2019	85.7	14.7	21.1	26.4	7.3	1.5	44.1	0.3	0.1	0.3	201.6	1.45%
2020	80.2	12.7	19.6	25.0	7.2	1.9	50.7	0.3	0.1	0.3	198.0	-1.78%
2021	81.3	13.3	20.9	27.6	7.4	1.9	53.2	0.3	0.1	0.3	206.3	4.19%
2022	83.1	13.5	20.8	27.8	7.3	1.7	47.9	0.3	0.1	0.3	202.9	-1.67%
2023	83.7	13.4	21.0	28.2	7.3	1.7	47.8	0.3	0.1	0.3	203.8	0.47%
2024	84.2	13.3	21.0	28.3	7.3	1.7	47.8	0.3	0.1	0.3	204.4	0.27%
2025	84.7	13.2	21.1	28.8	7.3	1.7	47.8	0.3	0.1	0.3	205.4	0.51%
2026	85.3	13.1	21.0	28.8	7.3	1.7	47.8	0.3	0.1	0.4	205.8	0.17%
2027	85.8	13.1	21.0	28.9	7.3	1.7	47.8	0.3	0.1	0.4	206.4	0.30%
2028	86.3	13.0	20.9	28.9	7.3	1.7	47.8	0.3	0.1	0.4	206.6	0.12%
2029	86.9	12.9	20.9	29.1	7.3	1.7	47.8	0.3	0.1	0.4	207.3	0.34%
2030	87.4	12.8	20.8	29.0	7.3	1.7	47.8	0.3	0.1	0.4	207.6	0.12%
2031	87.9	12.7	20.8	29.2	7.3	1.7	47.8	0.3	0.1	0.4	208.2	0.29%
AARG %[1] 2022-2026	**0.64%**	**-0.67%**	**0.23%**	**0.89%**	**0.00%**	**-0.43%**	**-0.04%**	**0.00%**	**-2.15%**	**0.56%**	**0.35%**	
AARG %[1] 2022-2031	**0.63%**	**-0.68%**	**0.01%**	**0.55%**	**0.00%**	**-0.40%**	**-0.02%**	**0.00%**	**-1.96%**	**0.54%**	**0.29%**	

1) AARG % = Annual Average Rate of Growth Percentage

Table 7-3 – HIGH case forecast of annual retail load (aMW) by customer class

Calendar Year	Residential	Small General	Medium General	Large General	Large Industrial	Small Irrigation	Large Irrigation	Street Lights	Security Lights	Unmetered Flats	Total System
2022	87.2	14.0	21.5	28.6	7.3	1.8	51.0	0.3	0.1	0.3	212.1
2023	87.7	13.9	21.7	29.0	7.3	1.8	50.9	0.3	0.1	0.3	213.1
2024	88.3	13.8	21.7	29.2	7.3	1.8	50.9	0.3	0.1	0.3	213.7
2025	88.8	13.7	21.8	29.7	7.3	1.8	50.9	0.3	0.1	0.3	214.7
2026	89.4	13.6	21.7	29.7	7.3	1.8	50.9	0.3	0.1	0.4	215.1
2027	90.0	13.5	21.7	29.8	7.3	1.8	50.9	0.3	0.1	0.4	215.8
2028	90.5	13.4	21.6	29.8	7.3	1.8	50.9	0.3	0.1	0.4	216.0
2029	91.1	13.3	21.7	30.0	7.3	1.8	50.9	0.3	0.1	0.4	216.8
2030	91.6	13.2	21.5	29.9	7.3	1.8	50.9	0.3	0.1	0.4	217.0
2031	92.2	13.1	21.5	30.1	7.3	1.8	50.9	0.3	0.1	0.4	217.6
AARG %[1] 2022-2026	**0.64%**	**-0.67%**	**0.23%**	**0.89%**	**0.00%**	**-0.43%**	**-0.04%**	**0.00%**	**-2.15%**	**0.56%**	**0.35%**
AARG %[1] 2022-2031	**0.63%**	**-0.68%**	**0.01%**	**0.55%**	**0.00%**	**-0.40%**	**-0.02%**	**0.00%**	**-1.96%**	**0.54%**	**0.29%**

1) AARG % = Annual Average Rate of Growth Percentage

Table 7-4 – LOW case forecast of annual retail load (aMW) by customer class

Calendar Year	Residential	Small General	Medium General	Large General	Large Industrial	Small Irrigation	Large Irrigation	Street Lights	Security Lights	Unmetered Flats	Total System
2022	79.1	13.0	20.1	26.9	7.3	1.7	44.8	0.3	0.1	0.3	193.6
2023	79.6	13.0	20.3	27.3	7.3	1.6	44.7	0.3	0.1	0.3	194.5
2024	80.1	12.9	20.2	27.5	7.3	1.6	44.7	0.3	0.1	0.3	195.1
2025	80.6	12.8	20.4	27.9	7.3	1.6	44.7	0.3	0.1	0.3	196.1
2026	81.1	12.7	20.3	27.9	7.3	1.6	44.7	0.3	0.1	0.4	196.4
2027	81.6	12.6	20.3	28.1	7.3	1.6	44.7	0.3	0.1	0.4	197.0
2028	82.1	12.5	20.2	28.0	7.3	1.6	44.7	0.3	0.1	0.4	197.2
2029	82.6	12.4	20.2	28.2	7.3	1.6	44.7	0.3	0.1	0.4	197.9
2030	83.2	12.3	20.1	28.2	7.3	1.6	44.7	0.3	0.1	0.4	198.1
2031	83.7	12.3	20.1	28.3	7.3	1.6	44.7	0.3	0.1	0.4	198.7
AARG %[1] 2022-2026	**0.64%**	**-0.67%**	**0.23%**	**0.89%**	**0.00%**	**-0.43%**	**-0.04%**	**0.00%**	**-2.15%**	**0.56%**	**0.35%**
AARG %[1] 2022-2031	**0.63%**	**-0.68%**	**0.01%**	**0.55%**	**0.00%**	**-0.40%**	**-0.02%**	**0.00%**	**-1.96%**	**0.54%**	**0.29%**

1) AARG % = Annual Average Rate of Growth Percentage

Table 7-5 – Total System Historical BASE case forecast of MONTHLY and annual retail load (aMW)

Calendar Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2005	188.8	165.8	163.5	168.1	177.3	229.3	255.6	251.2	170.2	124.0	134.7	164.2	182.9
2006	167.3	162.9	155.4	151.7	177.2	221.6	250.4	233.4	171.8	131.1	135.0	171.0	177.6
2007	182.2	185.4	148.3	155.5	187.7	235.0	254.1	236.0	187.5	127.6	143.7	158.6	183.5
2008	176.4	188.5	147.5	182.2	191.7	228.2	262.4	234.6	177.5	149.1	127.3	174.0	186.7
2009	201.8	185.2	161.9	172.6	209.5	258.3	267.4	250.3	187.6	144.4	142.3	181.6	197.1
2010	191.9	157.1	150.6	180.6	175.6	204.6	253.5	250.5	167.1	133.4	129.5	183.6	181.8
2011	186.4	180.8	156.1	173.6	174.5	221.0	247.3	253.8	209.0	136.1	136.1	182.3	188.2
2012	190.0	188.1	145.8	165.4	205.4	207.7	245.0	258.7	197.4	141.2	146.8	155.2	187.3
2013	185.8	187.3	150.1	167.3	206.6	234.1	274.0	249.5	186.1	148.6	148.8	184.3	193.7
2014	194.0	207.4	161.0	184.7	210.4	265.2	283.5	255.1	199.3	161.9	145.4	172.1	203.3
2015	178.8	178.2	148.2	181.5	201.0	288.8	296.2	248.9	197.7	154.4	136.6	168.9	198.4
2016	191.6	175.0	145.0	193.5	205.2	257.1	258.1	249.9	190.4	143.8	135.2	168.4	192.9
2017	228.0	221.2	169.4	160.9	191.5	266.3	289.6	261.5	193.4	148.1	148.5	167.1	203.8
2018	194.5	177.9	163.2	170.5	210.0	260.7	285.1	263.1	191.1	146.0	148.8	171.1	198.7
2019	178.1	215.8	192.3	168.6	193.8	271.3	259.8	257.0	195.7	151.1	160.2	176.8	201.6
2020	178.9	181.0	163.8	194.3	188.1	243.0	274.6	277.4	201.8	152.4	149.3	170.4	198.0
2021	179.4	195.6	169.2	197.3	227.1	283.6	313.9	260.5	195.1	153.6	145.6	153.9	206.3
Min. 2005-2021	**167.3**	**157.1**	**145.0**	**151.7**	**174.5**	**204.6**	**245.0**	**233.4**	**167.1**	**124.0**	**127.3**	**153.9**	**177.6**
Avg. 2017-2021	**191.8**	**198.3**	**171.6**	**178.3**	**202.1**	**265.0**	**284.6**	**263.9**	**195.4**	**150.2**	**150.5**	**167.9**	**201.7**
Max. 2005-2021	**228.0**	**221.2**	**192.3**	**197.3**	**227.1**	**288.8**	**313.9**	**277.4**	**209.0**	**161.9**	**160.2**	**184.3**	**206.3**
2022	184.6	187.7	161.3	166.8	194.3	239.8	294.8	271.5	205.9	161.2	174.0	190.3	202.9
2023	186.1	188.3	161.8	167.4	195.5	241.1	296.5	272.8	206.2	161.6	174.5	191.6	203.8
2024	187.2	183.5	161.4	168.1	198.2	244.8	299.9	271.9	205.0	161.4	175.6	193.2	204.4
2025	188.5	189.0	162.1	167.9	196.9	244.0	300.1	275.3	207.0	162.0	175.2	194.3	205.4
2026	189.4	189.0	162.0	167.9	197.2	244.9	301.3	276.0	207.0	161.6	175.0	195.1	205.8
2027	190.5	189.3	162.0	167.9	197.9	246.0	302.9	277.1	207.1	161.7	175.2	196.3	206.4
2028	191.4	185.9	161.4	168.4	200.2	248.9	305.5	275.6	205.3	161.1	176.0	197.7	206.6
2029	192.5	190.9	161.9	167.9	198.5	247.9	305.3	278.6	207.1	161.3	175.1	198.3	207.3
2030	193.2	191.3	161.5	167.6	198.8	248.4	306.4	279.2	206.8	160.9	175.0	199.1	207.6
2031	194.3	192.2	161.6	167.6	199.2	249.4	307.8	280.1	206.8	160.9	175.2	200.2	208.2

Table 7-6 – 2022 BASE case forecast of MONTHLY and annual retail load (aMW) by customer class

Customer Class	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Small Irrigation	0.0	0.2	0.6	1.4	2.4	3.4	4.5	4.1	2.7	1.2	0.3	0.0	1.7
Large Irrigation	0.0	3.5	12.3	32.7	64.9	98.9	135.5	119.5	70.2	26.9	6.2	0.0	47.9
Residential	115.1	109.0	82.1	65.5	60.0	65.5	79.9	74.6	62.7	67.3	97.4	119.6	83.1
Small General	14.5	14.9	12.5	12.0	12.1	13.5	15.2	14.5	12.8	11.8	13.6	14.8	13.5
Medium General	20.9	22.4	19.7	19.8	19.7	21.2	22.2	21.7	20.7	19.4	20.9	21.3	20.8
Large General	25.9	28.8	26.3	27.5	27.4	29.3	29.6	29.2	28.9	26.9	27.3	26.4	27.8
Large Industrial	7.5	8.1	7.2	7.3	7.0	7.3	7.3	7.2	7.2	7.1	7.5	7.5	7.3
Street Lights	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Security Lights	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Unmetered Flats	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
System Total	**184.6**	**187.7**	**161.3**	**166.8**	**194.3**	**239.8**	**294.8**	**271.5**	**205.9**	**161.2**	**174.0**	**190.3**	**202.9**

Figure 7-1 – 2021 BASE case forecast of MONTHLY and annual retail load (aMW) by customer class

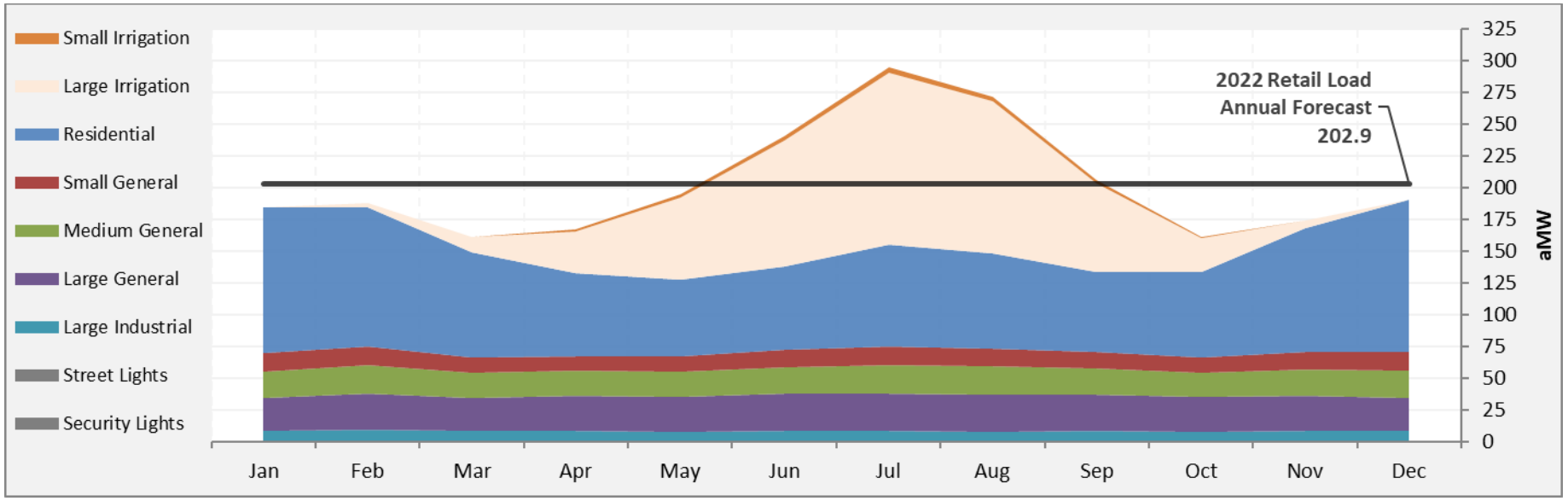


Table 7-7 – Historical and forecast of annual average number of customers by customer class

Calendar Year	Residential	Small General	Medium General	Large General	Large Industrial	Small Irrigation	Large Irrigation	Street Lights	Security Lights	Unmetered Flats	Total System	Annual % Change
2005	36,963	4,144	637	122	5	622	288	9	1,925	353	45,068	#N/A
2006	37,418	4,169	636	126	5	614	291	9	1,914	353	45,535	1.04%
2007	37,969	4,295	654	128	5	607	302	9	1,925	354	46,248	1.57%
2008	38,855	4,385	676	131	5	615	313	9	1,936	354	47,279	2.23%
2009	39,220	4,460	695	134	5	615	323	9	1,938	354	47,753	1.00%
2010	39,687	4,503	718	135	5	602	326	9	1,953	358	48,296	1.14%
2011	40,201	4,553	732	136	5	582	332	9	1,967	359	48,876	1.20%
2012	40,645	4,610	747	142	5	563	350	9	1,965	353	49,389	1.05%
2013	41,321	4,682	746	144	5	564	400	9	1,973	355	50,199	1.64%
2014	41,758	4,741	754	148	5	563	417	9	1,978	359	50,732	1.06%
2015	42,375	4,828	758	151	5	560	426	9	1,967	362	51,441	1.40%
2016	43,157	4,915	768	157	5	558	425	9	1,961	365	52,320	1.71%
2017	43,870	4,977	782	160	5	557	430	9	1,943	378	53,111	1.51%
2018	44,550	4,972	803	162	5	546	437	9	1,888	372	53,744	1.19%
2019	45,319	5,055	820	166	5	542	437	9	1,854	374	54,581	1.56%
2020	46,027	5,134	806	169	5	548	436	9	1,829	379	55,342	1.39%
2021	46,690	5,169	821	177	5	549	437	9	1,833	382	56,072	1.32%
2022	47,305	5,169	831	181	5	534	434	9	1,823	383	56,672	1.07%
2023	47,939	5,204	843	185	5	530	433	9	1,799	385	57,332	1.16%
2024	48,588	5,240	855	190	5	526	433	9	1,775	387	58,006	1.18%
2025	49,272	5,276	867	195	5	522	433	9	1,751	389	58,717	1.23%
2026	49,956	5,312	879	200	5	518	433	9	1,727	391	59,428	1.21%
2027	50,640	5,348	891	204	5	514	433	9	1,703	393	60,138	1.20%
2028	51,324	5,384	903	209	5	510	433	9	1,679	395	60,849	1.18%
2029	52,008	5,420	915	214	5	506	433	9	1,655	397	61,560	1.17%
2030	52,692	5,456	927	218	5	502	433	9	1,631	399	62,270	1.15%
2031	53,376	5,492	939	223	5	498	433	9	1,607	401	62,981	1.14%
AARG %[1] 2022-2026	**1.37%**	**0.68%**	**1.41%**	**2.52%**	**0.00%**	**-0.76%**	**-0.06%**	**0.00%**	**-1.34%**	**0.54%**	**1.19%**	
AARG %[1] 2022-2031	**1.35%**	**0.68%**	**1.37%**	**2.37%**	**0.00%**	**-0.77%**	**-0.03%**	**0.00%**	**-1.39%**	**0.52%**	**1.18%**	

1) AARG % = Annual Average Rate of Growth Percentage

Table 7-8 – Historical and BASE case forecast of annual usage per customer (kWh) by customer class

Calendar Year	Residential	Small General	Medium General	Large General	Large Industrial	Small Irrigation	Large Irrigation	Street Lights	Security Lights	Unmetered Flats	Total System	Annual % Change
2005	16,845	27,681	257,524	1,988,160	10,657,159	25,280	1,326,136	451,882	554	7,059	35,558	#N/A
2006	16,896	27,034	252,263	1,880,220	7,491,183	23,298	1,215,612	453,740	535	8,026	34,165	-3.92%
2007	16,972	26,787	252,577	1,744,660	9,809,030	26,110	1,279,477	461,266	534	8,041	34,753	1.72%
2008	17,151	26,366	250,845	1,717,234	9,552,059	26,086	1,250,444	468,669	535	8,046	34,685	-0.20%
2009	18,402	27,260	252,179	1,741,869	7,781,815	27,453	1,270,544	474,203	539	8,122	36,151	4.23%
2010	16,498	25,202	237,977	1,619,899	11,072,932	23,997	1,094,709	482,159	547	8,089	32,980	-8.77%
2011	17,113	25,991	239,704	1,541,682	13,082,162	25,097	1,106,605	614,671	553	8,103	33,725	2.26%
2012	16,435	25,905	235,607	1,530,826	14,115,033	26,936	1,058,781	459,597	552	8,294	33,313	-1.22%
2013	16,889	26,255	237,601	1,523,024	13,960,556	26,970	968,520	305,647	637	8,348	33,801	1.47%
2014	16,687	26,215	241,437	1,531,617	14,373,897	30,566	1,092,169	302,278	656	8,302	35,112	3.88%
2015	15,705	25,165	240,911	1,497,847	13,388,377	29,330	1,060,510	300,405	693	8,350	33,787	-3.78%
2016	15,333	24,795	234,983	1,422,089	12,922,450	27,952	987,267	287,682	644	8,447	32,379	-4.17%
2017	17,316	25,930	238,050	1,441,715	13,416,822	24,694	911,746	281,642	572	8,054	33,611	3.80%
2018	15,648	25,114	228,051	1,472,877	13,199,344	28,043	936,611	281,920	544	7,997	32,392	-3.63%
2019	16,574	25,487	225,362	1,394,263	12,863,616	24,353	883,247	282,868	523	7,944	32,359	-0.10%
2020	15,304	21,766	214,110	1,297,712	12,725,056	29,774	1,020,546	283,029	505	7,977	31,431	-2.87%
2021	15,246	22,483	223,171	1,367,123	13,016,760	30,543	1,066,301	265,894	462	7,862	32,232	2.55%
2022	15,392	22,889	219,533	1,345,792	12,859,003	28,617	965,973	265,723	481	7,850	31,359	-2.71%
2023	15,286	22,589	218,280	1,332,147	12,859,699	28,703	965,935	265,723	471	7,852	31,143	-0.69%
2024	15,220	22,345	215,361	1,308,325	12,894,064	28,909	969,486	265,640	469	7,853	30,947	-0.63%
2025	15,062	21,983	213,376	1,290,919	12,859,337	28,891	966,837	265,723	467	7,855	30,644	-0.98%
2026	14,950	21,685	209,485	1,262,375	12,860,032	28,993	966,837	265,723	466	7,857	30,330	-1.02%
2027	14,841	21,384	206,950	1,241,469	12,858,975	29,102	966,837	265,723	464	7,858	30,063	-0.88%
2028	14,775	21,159	203,209	1,213,456	12,895,059	29,341	969,486	265,640	462	7,859	29,828	-0.78%
2029	14,631	20,814	200,616	1,192,826	12,860,365	29,336	966,837	265,723	461	7,861	29,503	-1.09%
2030	14,529	20,532	196,850	1,165,467	12,859,308	29,463	966,837	265,723	459	7,863	29,200	-1.03%
2031	14,432	20,254	194,366	1,145,005	12,860,003	29,596	966,837	265,723	457	7,864	28,953	-0.85%
AARG %[1] 2022-2026	**-0.73%**	**-1.34%**	**-1.16%**	**-1.59%**	**0.00%**	**0.33%**	**0.02%**	**0.00%**	**-0.82%**	**0.02%**	**-0.83%**	
AARG %[1] 2022-2031	**-0.71%**	**-1.35%**	**-1.34%**	**-1.78%**	**0.00%**	**0.37%**	**0.01%**	**0.00%**	**-0.57%**	**0.02%**	**-0.88%**	

1) AARG % = Annual Average Rate of Growth Percentage

Table 7-9 – Historical and forecast annual year-end number of customers by customer class

Calendar Year	Residential	Small General	Medium General	Large General	Large Industrial	Small Irrigation	Large Irrigation	Street Lights	Security Lights	Unmetered Flats	Total System	Annual % Change
2005	37,236	4,128	627	123	5	619	288	9	1,920	352	45,307	#N/A
2006	37,802	4,232	641	127	5	602	293	9	1,916	354	45,981	1.49%
2007	38,285	4,324	665	131	5	609	308	9	1,933	354	46,623	1.40%
2008	39,095	4,445	683	132	5	615	316	9	1,928	354	47,582	2.06%
2009	39,430	4,484	707	135	5	610	325	9	1,947	355	48,007	0.89%
2010	39,973	4,528	725	135	5	594	322	9	1,963	362	48,616	1.27%
2011	40,432	4,576	747	141	5	573	334	9	1,966	351	49,134	1.07%
2012	40,955	4,652	742	143	5	555	355	9	1,968	354	49,738	1.23%
2013	41,561	4,709	750	146	5	563	410	9	1,985	357	50,495	1.52%
2014	42,039	4,784	758	151	5	559	421	9	1,974	361	51,061	1.12%
2015	42,724	4,883	762	153	5	558	424	9	1,963	364	51,845	1.54%
2016	43,574	4,949	775	160	5	556	422	9	1,958	366	52,774	1.79%
2017	44,177	5,011	785	160	5	546	433	9	1,929	378	53,433	1.25%
2018	44,946	4,991	815	164	5	529	437	9	1,870	370	54,136	1.32%
2019	45,666	5,081	821	167	5	528	437	9	1,837	375	54,926	1.46%
2020	46,398	5,146	809	176	5	540	436	9	1,826	380	55,725	1.45%
2021	46,936	5,148	825	179	5	535	434	9	1,836	382	56,289	1.01%
2022	47,618	5,185	836	183	5	532	434	9	1,812	384	56,998	1.26%
2023	48,217	5,220	848	187	5	528	433	9	1,788	386	57,621	1.09%
2024	48,901	5,256	860	191	5	524	433	9	1,764	388	58,331	1.23%
2025	49,585	5,292	872	197	5	520	433	9	1,740	390	59,043	1.22%
2026	50,269	5,328	884	201	5	516	433	9	1,716	392	59,753	1.20%
2027	50,953	5,364	896	206	5	512	433	9	1,692	394	60,464	1.19%
2028	51,637	5,400	908	211	5	508	433	9	1,668	396	61,175	1.18%
2029	52,321	5,436	920	215	5	504	433	9	1,644	398	61,885	1.16%
2030	53,005	5,472	932	220	5	500	433	9	1,620	400	62,596	1.15%
2031	53,689	5,508	944	225	5	496	433	9	1,596	402	63,307	1.14%
AARG %[1] 2022-2026	**1.36%**	**0.68%**	**1.41%**	**2.37%**	**0.00%**	**-0.76%**	**-0.06%**	**0.00%**	**-1.35%**	**0.52%**	**1.19%**	
AARG %[1] 2022-2026	**1.34%**	**0.67%**	**1.36%**	**2.32%**	**0.00%**	**-0.78%**	**-0.03%**	**0.00%**	**-1.40%**	**0.51%**	**1.17%**	

1) AARG % = Annual Average Rate of Growth Percentage

Table 7-10 – Historical and forecast annual change in number of customers by customer class

Calendar Year	Residential	Small General	Medium General	Large General	Large Industrial	Small Irrigation	Large Irrigation	Street Lights	Security Lights	Unmetered Flats	Total System	Annual % Change
2005	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
2006	566	104	14	4	0	(17)	5	0	(4)	2	674	#N/A
2007	483	92	24	4	0	7	15	0	17	0	642	-4.75%
2008	810	121	18	1	0	6	8	0	(5)	0	959	49.38%
2009	335	39	24	3	0	(5)	9	0	19	1	425	-55.68%
2010	543	44	18	0	0	(16)	(3)	0	16	7	609	43.29%
2011	459	48	22	6	0	(21)	12	0	3	(11)	518	-14.94%
2012	523	76	(5)	2	0	(18)	21	0	2	3	604	16.60%
2013	606	57	8	3	0	8	55	0	17	3	757	25.33%
2014	478	75	8	5	0	(4)	11	0	(11)	4	566	-25.23%
2015	685	99	4	2	0	(1)	3	0	(11)	3	784	38.52%
2016	850	66	13	7	0	(2)	(2)	0	(5)	2	929	18.49%
2017	603	62	10	0	0	(10)	11	0	(29)	12	659	-29.06%
2018	769	(20)	30	4	0	(17)	4	0	(59)	(8)	703	6.68%
2019	720	90	6	3	0	(1)	0	0	(33)	5	790	12.38%
2020	732	65	(12)	9	0	12	(1)	0	(11)	5	799	1.14%
2021	538	2	16	3	0	(5)	(2)	0	10	2	564	-29.41%
2022	682	37	11	4	0	(3)	0	0	(24)	2	709	25.71%
2023	599	35	12	4	0	(4)	(1)	0	(24)	2	623	-12.13%
2024	684	36	12	4	0	(4)	0	0	(24)	2	710	13.96%
2025	684	36	12	6	0	(4)	0	0	(24)	2	712	0.28%
2026	684	36	12	4	0	(4)	0	0	(24)	2	710	-0.28%
2027	684	36	12	5	0	(4)	0	0	(24)	2	711	0.14%
2028	684	36	12	5	0	(4)	0	0	(24)	2	711	0.00%
2029	684	36	12	4	0	(4)	0	0	(24)	2	710	-0.14%
2030	684	36	12	5	0	(4)	0	0	(24)	2	711	0.14%
2031	684	36	12	5	0	(4)	0	0	(24)	2	711	0.00%

Capital Requirements Plan

Tab 9

Capital Requirements Plan - Combined Summary - 2023 Budget

Capital Category	2022 Original Budget	2022 Amended Budget	2023	2024	2025	2026	2027
Transmission	$6,223,927	$1,660,970	$8,534,445	$275,000	$4,700,000	$200,000	$200,000
Distribution	$14,804,468	$17,340,611	$15,824,476	$13,912,808	$12,839,487	$12,745,294	$13,467,818
Broadband	$1,868,731	$1,195,820	$1,775,213	$1,470,935	$1,540,860	$1,424,098	$1,446,589
General Plant	$1,503,000	$929,682	$1,818,300	$1,339,702	$1,506,500	$887,500	$887,500
IT	$1,057,802	$824,698	$901,332	$800,852	$800,000	$800,000	$800,000
Security	$991,640	$482,033	$1,014,999	$939,940	$315,000		
Contributions in Aid	($2,599,537)	($3,429,102)	($3,113,466)	($3,067,166)	($3,067,166)	($3,067,166)	($3,067,166)
Grand Total	**$23,850,031**	**$19,004,711**	**$26,755,299**	**$15,672,071**	**$18,634,681**	**$12,989,727**	**$13,734,742**

Capital Requirements Plan
Transmission - 2023 Budget

Project Name	BU Project	2022 Original Budget	2022 Amended Budget	2023	2024	2025	2026	2027
Poles & Fixtures, Misc Repairs	75	$100,000	$125,000	$125,000	$125,000	$125,000	$125,000	$125,000
Switch Upgrade/Additions	137	$74,000	$95,506	$82,349	$150,000	$75,000	$75,000	$75,000
WO# 511742 - Transmission Line-Phillips to Spaw	212	$4,693,602	$706,086	$5,325,911				
WO# 625844 - Spaw Phillips 115kV Breaker	334	$624,074	$271,587	$533,333				
WO# 605447 - Transmission Study - River System	299	$59,427	$59,577					
WO# XXXXXX - Hedges 115kV Metering Point	169	$209,024		$206,886				
WO# 608670 - Plymouth Transmission Tie Switch	300	$463,800						
WO# 503229 - Transmission Line-Sunset Rd to Dallas Rd	413		$127,129	$1,805,416				
WO# 608670 - McNary POD	300		$115,984	$455,550				
WO #: 639387 Steptoe Transmission Pole Move	363		$160,100					
WO# 646873 - Weber Canyon to Prosser Tie	353					$4,500,000		
Grand Total		**$6,223,927**	**$1,660,970**	**$8,534,445**	**$275,000**	**$4,700,000**	**$200,000**	**$200,000**

Capital Requirements Plan
Distribution - 2023 Budget

Project Group	Project	Project Name	BU Project	2022 Original Budget	2022 Amended Budget	2023	2024	2025	2026	2027
Capacity & Reliability	9 - Dist. 5 Year Plan	POS#58 - WO# XXXXXX - BEC-3, new feeder to east to tie with S..	205	$563,056	$549,218	$915,277				
		POS#11 - WO# 647875 - GUM-4, HED-3, recond. 3/0, Bowles Rd.	331	$262,077	$110,763	$181,444				
		POS#81 - WO# XXXXXX - PHI-8, new feeder north to Cochrane	297	$269,762			$522,402			
		POS#102 - WO#XXXXXX - HED-4 Getaway Reconductor	288	$78,619			$114,353			
		POS#38 - WO#505924 - VIS-1 to Vis-6 Across Quinalt	152	$144,731					$230,336	
		POS#119 - WO#XXXXXX - PSR-3 Reconductor	332	$242,822						$329,000
		POS#115 - WO#XXXXXX - RTA-2 to RTA-1 Offload	291	$300,313						
		POS#111 - WO#606006 - RTA-3 Recond Utilize 4" for 3 phase	290	$43,442						
		POS#115B - WO#624253 - RTA-2 to RTA-1 Offload (UG Work Co..	291		$149,293					
		POS#115A - WO#623022- RTA-2 to RTA-1 Offload (OH Work BP..	291		$83,449					
		POS#117 - WO# 627908 - SSR-1 offload to SSR3 (Switches)	292		$10,663					
		POS#118 - WO#627934 - PSR-6 Switch additions	293		$10,499					
		POS#13 - WO# 647881 - GUM - 4 Reconductor #4 ACSR, Game F..	369			$471,975				
		POS#12 - WO# 639878 - GUM - 4 Reconductor #4 ACSR, Oak St.	362			$352,912				
		POS#36A - WO#XXXXXX - SSR-3 Reconducctor (DNR Land) WEST	395			$152,581				
		POS#21 - WO# XXXXXX - HED - 4 Reconductor #6, Bernath Rd.	211				$554,297			
		POS#20 - WO# XXXXXX - HED - 4 Reconductor 3/0 ACSR, Perkins ..	204				$506,398			
		POS#36B - WO#XXXXXX - SSR-3 Reconducctor (DNR Land) EAST	Null				$346,333			
		POS#41 - WO# XXXXXX - ZEH-4, new OH tie to GUM-4 at Game F..	206				$326,706			
		POS#105 - WO#XXXXXX - KEN-9 Reconductor down Washington	Null					$366,319		
		POS#15 - WO# 615372 - HIG-4, recond. 3/0, W. 10th Ave.	309					$313,290		
		POS#54 - WO# XXXXXX ZEH-3, recond. 1/0 to serve GUM-3	Null					$256,395		
		POS#122 - WO#XXXXXX - ANG-3 Reconductor between Morain ..	Null					$103,752		
		POS#39 - WO# XXXXXX - ZEH-1, new OH line and UG tie with E7	Null						$312,569	
		POS#14 - WO# 615367 - GUM-4, new OH tie HED-3, Game Farm ..	308						$273,490	
		POS#56 - WO# XXXXXX - ELY-8, recond. 3/0, near Ely St.	Null						$168,637	
		POS#95 - WO# XXXXXX - HED-2, recond #266.8, Finley Rd	Null							$306,100
		POS#19 - WO# XXXXXX - HED-3 , Reconductor #4 Terril Rd.	Null							$294,100
		POS#120 - WO#XXXXXX - ANG-4 Reconductor between Morain ..	Null							$162,761
		POS#79 - WO# XXXXXX RTA-2, Recond. Badger Rd. Btwn L766A ..	Null							$161,000
		POS#22 - WO# XXXXXX - KEN-8, Reconductor Across Fairgrounds	Null							$100,000
		POS#121 - WO#XXXXXX - HLS-7 Reconductor between Filmore &..	Null							$84,039
		POS#113 - ELY-2 Reconductor 3/0 ACSR along Garfield St	Null							$36,200
		Total		**$1,904,821**	**$913,884**	**$2,074,190**	**$2,370,488**	**$1,039,756**	**$985,032**	**$1,473,200**
	17 - Dist. System Improvement	Dist System Improvements	141	$455,920	$717,850	$706,840	$455,956	$455,956	$455,956	$455,956
		Fire Mitigation - OH Line Reconstruction	312	$250,000	$209,594	$250,000	$250,000	$250,000	$250,000	$250,000
		Vista Substation Feeder Getaways	296	$1,128,737	$1,171,929					
		WO#621801-Southridge S1,S2,S3 Feeder Getaways	207	$836,409	$1,228,587					
		Angus Substation Getaways	316		$494,514					
		WO# 614706 -Southridge Sub S4 Feeder Getaways	207		$277,564					

Capital Requirements Plan
Distribution - 2023 Budget

Project Group	Project	Project Name	BU Project	2022 Original Budget	2022 Amended Budget	2023	2024	2025	2026	2027
Capacity & Reliability	17 - Dist. System Improvement	WO# 626081 - Gum Street Feeder Getaway Replacement	322		$123,322					
		WO# 561020 - Ridgeline Under Pass	178		$2,042					
		WO# XXXXXX -Edison Street Sub Feeder Getaways	Null						$750,000	
		Total		**$2,671,066**	**$4,225,402**	**$956,840**	**$705,956**	**$705,956**	**$1,455,956**	**$705,956**
	22 - Scada	WO#566821- Fiber to Prior #1	144	$26,260	$26,462					
		WO# XXXXXX - SCADA Communications Network Study	333	$75,000		$150,000				
		WO# XXXXXX - Vista Substation Scada Ugrades	202	$57,402		$60,881				
		WO#613714 - Zephyr Height SCADA Upgrades	202	$32,548			$36,332			
		WO# XXXXXX - Angus Substation Scada Ugrades	202	$84,074						
		Fiber to Substations & Line Devices	144		$25,000	$31,250	$25,000	$25,000	$25,000	$25,000
		WO#XXXXXX - Fiber Backbone to Carma	144		$162,707	$339,735				
		WO #: 648628 Rattlesnake 2 Radio Master Station	372		$8,324					
		Distribution Line Equipment SCADA	143			$25,000	$20,000	$20,000	$20,000	$20,000
		WO#566834- Fiber to H2F2 Reservior Sub	144			$84,761				
		WO#613715 - Highlands Sub SCADA Upgrades	202			$36,601				
		WO# XXXXXX - Prosser Substation Scada Ugrades	202				$174,346			
		WO#XXXXXX - Fiber to Paterson 1&2, SunHeaven River	144				$136,663			
		WO#XXXXXX - Fiber to Sandpiper	144				$85,166			
		WO#XXXXXX - Fiber to Whitcomb	144				$46,743			
		WO#XXXXXX - Fiber to Carma	144				$41,183			
		WO#XXXXXX- Fiber to Carma Metering point (KPUD)	144					$47,285		
		Total		**$275,284**	**$222,492**	**$728,227**	**$565,433**	**$92,285**	**$45,000**	**$45,000**
	23 - Substations	Substation Misc. Aux Equip, Relays/Controls	148	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000
		WO# 633530 - Prosser Bay #1 Voltage Reg Replacement	351	$407,641	$577,870					
		WO# 623148 - Angus Bay #1 Feeder Breaker & Relay Replaceme..	318	$185,831	$192,541					
		WO# 624796 - Angus Bay #2 Feeder Breaker & Bay Relay Replac..	287	$185,831	$141,448					
		WO# 645497 - Kennewick Battery Bank Replacement	330	$16,472	$18,415					
		WO#XXXXXX - Ridgeline Substation Fence/Gravel	325	$15,000	$90,207					
		WO# 509174 - Xfmr & Feeder Relay Upgrade - Ely #1	304		$202,464					
		WO# 653625 - Vista Bay #1 Metalclad Switchgear Replacement	375			$1,059,222				
		WO#XXXXXX - Prosser Bay #2 Voltage Reg Replacement	373			$700,291				
		WO# XXXXXX - Angus Bay #3 Feeder Breaker & Relay Replaceme..	402			$219,912				
		WO# XXXXXX - New Badger Canyon Substation Property	Null				$300,000			
		WO# XXXXXX- Prosser Bay #1 CS & Diff Addition	Null				$250,400			
		WO# XXXXXX- Prosser Bay #1 SCADA Upgrades	Null				$102,700			
		WO# XXXXXX - Vista Bay #2 Metalclad Switchgear Replacement	Null					$1,144,502		
		WO# XXXXXX- Prosser Bay #2 CS & Diff Addition	Null					$250,400		
		WO# XXXXXX- Prosser Bay #2 SCADA Upgrades	Null					$29,900		
		WO# XXXXXX- New Badger Canyon Substation	Null						$300,000	
		WO# XXXXXX- Relay Upgrades River Front Substation	Null						$237,778	

Capital Requirements Plan
Distribution - 2023 Budget

Project Group	Project	Project Name	BU Project	2022 Original Budget	2022 Amended Budget	2023	2024	2025	2026	2027
Capacity & Reliability	23 - Substations	WO# XXXXXX- Relay Upgrades Sunset Rd Substation	Null						$101,823	
		WO# XXXXXX- Sunset Rd SCADA Upgrades	Null						$30,000	
		WO# XXXXXX - River Front Battery Bank Replacement	Null						$21,690	
		WO# XXXXXX- Hedges Substation Upgrades	Null							$1,612,000
		Total		**$835,775**	**$1,247,945**	**$2,004,425**	**$678,100**	**$1,449,802**	**$716,291**	**$1,637,000**
	Capacity & Reliability	Distribution Regulators	323	$156,000	$156,000	$75,000	$75,000	$75,000	$75,000	$75,000
		Total		**$156,000**	**$156,000**	**$75,000**	**$75,000**	**$75,000**	**$75,000**	**$75,000**
	Total			**$5,842,945**	**$6,765,723**	**$5,838,682**	**$4,394,977**	**$3,362,798**	**$3,277,279**	**$3,936,156**
Customer Growth	17 - Dist. System Improvement	Clodfelter Reconductor	324	$104,239	$263,780					
		Total		**$104,239**	**$263,780**					
	20 - Service Poles	Service Poles	93	$30,000	$56,250	$37,500	$37,500	$37,500	$37,500	$37,500
		Total		**$30,000**	**$56,250**	**$37,500**	**$37,500**	**$37,500**	**$37,500**	**$37,500**
	30 - Sum Base Growth	Dist Base Growth	140	$2,607,749	$3,327,130	$3,467,437	$3,558,007	$3,516,865	$3,558,007	$3,558,007
		Total		**$2,607,749**	**$3,327,130**	**$3,467,437**	**$3,558,007**	**$3,516,865**	**$3,558,007**	**$3,558,007**
	42 - Service Work	Services, Set Xfmrs, Run Secondary	94	$2,633,352	$2,657,019	$2,636,773	$2,657,019	$2,657,019	$2,657,204	$2,657,020
		Total		**$2,633,352**	**$2,657,019**	**$2,636,773**	**$2,657,019**	**$2,657,019**	**$2,657,204**	**$2,657,020**
	Land & Land Rights	County Recording Fees - Easements	140	$15,000	$11,177	$30,000	$15,000	$15,000	$15,000	$15,000
		New Permits (Crossing, Etc.)	140	$10,000	$10,000	$40,000	$40,000	$40,000	$40,000	$40,000
		Title Reports for Construction Projects	140	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500
		Total		**$27,500**	**$23,677**	**$72,500**	**$57,500**	**$57,500**	**$57,500**	**$57,500**
	Total			**$5,402,840**	**$6,327,857**	**$6,214,210**	**$6,310,026**	**$6,268,884**	**$6,310,211**	**$6,310,027**
General Plant	Meters	Meters	86	$200,000	$200,000	$250,000	$250,000	$250,000	$200,000	$200,000
		Meter Change-Outs	336	$430,000		$430,000	$350,000	$350,000	$350,000	$350,000
		Total		**$630,000**	**$200,000**	**$680,000**	**$600,000**	**$600,000**	**$550,000**	**$550,000**
	Total			**$630,000**	**$200,000**	**$680,000**	**$600,000**	**$600,000**	**$550,000**	**$550,000**
Other	19 - NESC Standards Compliance	JU - NESC Compliance Program	145	$156,250	$112,812	$118,750	$187,500	$187,500	$187,500	$187,500
		Total		**$156,250**	**$112,812**	**$118,750**	**$187,500**	**$187,500**	**$187,500**	**$187,500**
	Other	Equipment Overhead Allocation	122	$614,342	$564,342	$530,000				
		Total		**$614,342**	**$564,342**	**$530,000**				
	Total			**$770,592**	**$677,154**	**$648,750**	**$187,500**	**$187,500**	**$187,500**	**$187,500**
Repair & Replace	12 - Dist. Cable Replacement Projects	Repair & Replacement - Cable	147	$1,532,924	$1,495,980	$1,555,847	$1,524,792	$1,524,792	$1,524,792	$1,658,247
		Total		**$1,532,924**	**$1,495,980**	**$1,555,847**	**$1,524,792**	**$1,524,792**	**$1,524,792**	**$1,658,247**
	14 - Dist. Other Maintenance	Trouble Orders	149	$320,520	$423,847	$517,291	$525,253	$525,253	$525,253	$454,558
		Repair & Replacement - Other	92	$265,000	$265,000	$331,250	$331,250	$331,250	$331,250	$331,250
		Total		**$585,520**	**$688,847**	**$848,541**	**$856,503**	**$856,503**	**$856,503**	**$785,808**
	16 - Dist. Pole Replacement	Distribution Pole Replacement	160	$39,647	$39,009	$38,446	$39,009	$39,009	$39,009	$40,081
		Total		**$39,647**	**$39,009**	**$38,446**	**$39,009**	**$39,009**	**$39,009**	**$40,081**
	23 - Substations	WO #: 638807 Purchase of Power XFMR Prior-4	359		$488,255					
		WO #: 639055 Purchase of 2.4kV Power XFMR	367		$461,984					
		WO# 618736 - Mobile substation control upgrades	314		$128,621					

Capital Requirements Plan
Distribution - 2023 Budget

Project Group	Project	Project Name	BU Project	2022 Original Budget	2022 Amended Budget	2023	2024	2025	2026	2027
Repair & Replace	23 - Substations	WO #: 648535 PMH 10 @ Ely Bay 2 Replacement	371		$56,360					
		WO#613706 - Prior #2 S248F Fuse	306		$10,822					
		Total			**$1,146,042**					
	Total			**$2,158,091**	**$3,369,877**	**$2,442,834**	**$2,420,304**	**$2,420,304**	**$2,420,304**	**$2,484,136**
Grand Total				**$14,804,468**	**$17,340,611**	**$15,824,476**	**$13,912,808**	**$12,839,487**	**$12,745,294**	**$13,467,818**

Capital Requirements Plan
Broadband - 2023 Budget

Project Name	BU Project	2022 Original Budget	2022 Amended Budget	2023	2024	2025	2026	2027
Fiber Customer Connects - LEC	135	$500,000	$500,000	$456,875	$537,500	$537,500	$537,500	$537,500
NoaNET NCS and District Labor	22	$230,231	$230,820	$219,826	$245,060	$252,485	$260,723	$283,214
System Improvement Projects	349	$100,000	$100,000	$107,500	$312,500	$375,000	$250,000	$250,000
Fiber Backbone & Laterals	134	$125,000	$125,000	$107,500	$134,375	$134,375	$134,375	$134,375
WO#559986 - Backbone System Electronics	133	$125,000	$125,000	$75,000	$125,000	$125,000	$125,000	$125,000
WO#560002 - Premise Electronics	136	$75,000	$75,000	$50,000	$75,000	$75,000	$75,000	$75,000
Franchise BB Facility Relocations	252	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000
Fiber Conduit	19	$20,000	$20,000	$21,500	$21,500	$21,500	$21,500	$21,500
Advanced Wireless/Small Cell	214	$673,500		$717,013				
Grand Total		**$1,868,731**	**$1,195,820**	**$1,775,213**	**$1,470,935**	**$1,540,860**	**$1,424,098**	**$1,446,589**

Capital Requirements Plan
General Plant - 2023 Budget

Project	Project Name	BU Project	2022 Original Budget	2022 Amended Budget	2023	2024	2025	2026	2027
Facilities	Replace Asphalt Courtyard Parking	344	$120,000	$78,192					
	Replace Drinking Fountains Admin	345	$7,000						
	Conex Box - Storage for Transmission Line materials (located at f..	382		$6,300					
	Admin HVAC Controls	391			$300,000				
	Ely Property Fence	386			$72,000				
	Admin Window Replacement	380			$40,000				
	Zephyr Substation Gate	403			$7,000				
	Ultraviolet Lights (virus killer)	400			$5,000				
	Remodel Main Restrooms in Admin	Null				$210,000			
	Remodel Customer Restrooms in Admin	Null				$60,000			
	Paint - Operations Dock Area	63				$30,000			
	Remodel Auditorium Restrooms	Null					$100,000		
	Remodel Auditorium Entry	Null					$31,000		
	Remodel Auditorium	Null					$28,000		
	Dist System Improvements/Projected Capital Facilities	Null						$200,000	$200,000
	Total		**$127,000**	**$84,492**	**$424,000**	**$300,000**	**$159,000**	**$200,000**	**$200,000**
Other	Misc. Construction Capital Expense - Line Department	60	$67,500	$67,500	$67,500	$67,500	$67,500	$67,500	$67,500
	Misc. Construction Capital Expense - Transformer Shop	61	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
	Pole Stubbing	64	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
	Communications Equipment/800 MHz Radios	49	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
	CT Verification Tester	273	$34,000	$44,483					
	Power Quality Recorder/Transformer, Home, other range of uses	337	$15,000	$15,000					
	Oil Dielectric Tester	338	$15,000	$15,000					
	Infrared Camera - Line Department	335	$7,000	$4,698					
	15-Ton Press	284	$5,500	$5,165					
	Mobile Spare Battery Bank/Trailer and Equipment	340	$64,000		$64,000				
	TTR and Winding Resistance Tester	276	$26,000		$26,000				
	Projected Capital Equip - Ops	66	$5,000			$5,000	$5,000	$5,000	$5,000
	Hand held TTR	339	$5,000						
	Hot Arms (50)	390			$30,000				
	Electronic Recloser Test simulator	385			$25,000				
	Infrared Camera - XFMR Shop	335			$25,000				
	Single Polyphase Meter tester	399			$18,000				
	Phenolic Label Maker	393			$10,000				
	Gas Analyzer	389			$10,000				
	Loadblock	404			$8,000				

Capital Requirements Plan
General Plant - 2023 Budget

Project	Project Name	BU Project	2022 Original Budget	2022 Amended Budget	2023	2024	2025	2026	2027
Other	Power Quality Recorder/Meter Base Use	396			$5,800				
	Projected Capital - Meter Shop	Null				$20,000	$20,000	$20,000	$20,000
	Projected Capital - Transformer Shop	Null				$25,000	$25,000	$25,000	$25,000
	Projected Capital Equip - Line	60				$45,000	$45,000	$45,000	$45,000
	Total		**$269,000**	**$176,846**	**$314,300**	**$187,500**	**$187,500**	**$187,500**	**$187,500**
Transportation	Overhead Puller	346	$200,000	$213,748					
	1000KCM Cable Payout Trailer	348	$100,000	$100,000					
	Forklift for Transformer Shop	285	$60,000	$57,567					
	Engineering Half ton Pick Up (Replace #120)	343	$70,000	$43,971					
	Truck #180 - Insurance Reimbursement - Superintendent of Oper..	320	$42,000	$44,081					
	Water Tank for Fire Mitigation Program	341	$35,000	$40,646					
	Bucket Truck - Prosser (Replacing #73)	347	$300,000			$340,075			
	Kennewick Bucket Truck (Replace #149)	342	$300,000			$342,127			
	Mobile Grabber - Fall Protection Trailer	374		$69,941					
	Safety Coordinator Half Ton Pick Up	370		$57,312					
	Dozer Trailer	384		$41,078					
	Vac Truck	401			$600,000				
	Service Truck - Kennewick (Replaces #184)	398			$180,000				
	Back Hoe (Replaces #62)	381			$160,000				
	Engineering Half ton Pick Up (Replaces #121)	387			$70,000				
	Meter Shop Half Ton Pickup (replace #58)	392			$70,000				
	Foreman Truck - Prosser	Null				$120,000			
	Dump Truck	Null				$50,000			
	Projected Transportation Equipment	Null					$500,000	$500,000	$500,000
	80' High Reach Bucket - Kennewick (to replace #90)	Null					$360,000		
	Bucket Truck - Kennewick	Null					$300,000		
	Total		**$1,107,000**	**$668,344**	**$1,080,000**	**$852,202**	**$1,160,000**	**$500,000**	**$500,000**
Grand Total			**$1,503,000**	**$929,682**	**$1,818,300**	**$1,339,702**	**$1,506,500**	**$887,500**	**$887,500**

Capital Requirements Plan
Information Technology - 2023 Budget

Project	Project Name	BU Project	2022 Original Budget	2022 Amended Budget	2023	2024	2025	2026	2027
Enterprise Applications	iVUE Enhancements	31	$98,640	$91,538	$118,666	$69,066			
	TRIM Upgrade	266	$33,320	$8,517					
	SCADA Historian Enhancements	247	$89,920						
	SEL Teams Software	397		$36,126					
	Doble Test Assistant License & Implementation	383			$60,133				
	Survalent ICCP Software Plug-In	408			$44,200				
	WindMil Upgrade	268			$3,333				
	Total		**$221,880**	**$136,181**	**$226,332**	**$69,066**			
Network Infrastructure	Cisco Blade Server	44	$200,000	$250,000	$175,000	$225,000	$200,000	$200,000	
	Network Switch Purchase	33	$48,320	$30,000	$40,000	$40,000	$40,000	$40,000	
	Multi-Function Printer	302	$35,000	$25,000	$15,000	$15,000	$15,000	$15,000	
	Windows Datacenter Licenses	38	$33,320	$25,000	$25,000	$25,000	$25,000	$25,000	
	Video Conference Room Upgrades	24	$45,962	$10,000	$20,000				
	Datacenter redesign	269	$30,000	$20,000	$20,000				
	Veeam repository	328	$70,000	$62,000				$75,000	
	SQL Software - Database Licenses	271	$30,000	$21,000					
	CWDM for Datacenter connection	329	$25,000	$25,000					
	Storage Area Network (SAN) Upgrade	267	$120,000		$300,000	$100,000	$100,000	$300,000	
	UCS Memory	303	$40,000			$40,000		$40,000	
	Big Data Storage Array	327	$100,000						
	Fabric Interconnects	388		$125,000					
	HVAC	378		$37,000					
	Phone System Upgrade	394			$80,000				
	Load Balancer	32					$100,000		
	Nexus Switch (Prosser) Upgrade	34						$100,000	
	Total		**$777,602**	**$630,000**	**$675,000**	**$445,000**	**$480,000**	**$795,000**	
Operational Technology	Communications Monitors	25	$58,320	$58,517					
	Total		**$58,320**	**$58,517**					
Other	Adjustment to Annual Minimum of $800,000	Null				$286,786	$320,000	$5,000	$800,000
	Total					**$286,786**	**$320,000**	**$5,000**	**$800,000**
Grand Total			**$1,057,802**	**$824,698**	**$901,332**	**$800,852**	**$800,000**	**$800,000**	**$800,000**

Capital Requirements Plan
Security - 2023 Budget

Project Name	BU Project	2022 Original Budget	2022 Amended Budget	2023	2024	2025	2026	2027
Enterprise Security System	222	$566,640	$267,033	$374,999	$108,300	$55,000		
Operations Security Fencing	326	$150,000	$190,000					
Security Manager's Office Remodel	305	$25,000	$25,000					
Facility Security Improvements	305	$250,000						
Facility Fencing and Gates	326			$500,000	$310,000			
Wiring - Camera System	222			$100,000				
Physical Key Lock Changes	305			$40,000				
Security Systems - Substations	Null				$266,640	$260,000		
Operations Gate Overhaul	326				$250,000			
Bollards for Customer Service Lobby	305				$5,000			
Grand Total		**$991,640**	**$482,033**	**$1,014,999**	**$939,940**	**$315,000**		

Capital Requirements Plan
Capital Contributions - 2023 Budget

Project Group	Project	Project Name	BU Project	2022 Original Budget	2022 Amended Budget	2023	2024	2025	2026	2027
Capacity & Reliability	17 - Dist. System Improvement	WO# 561020 - Ridgeline Under Pass	178		($345,000)					
	Total				**($345,000)**					
Customer Growth	30 - Sum Base Growth	Dist Base Growth	140	($2,487,712)	($2,948,616)	($2,948,616)	($2,948,616)	($2,948,616)	($2,948,616)	($2,948,616)
	Total			**($2,487,712)**	**($2,948,616)**	**($2,948,616)**	**($2,948,616)**	**($2,948,616)**	**($2,948,616)**	**($2,948,616)**
Other	19 - NESC Standards Compliance	JU - NESC Compliance Program	145	($31,250)	($91,936)	($62,500)	($75,000)	($75,000)	($75,000)	($75,000)
	Other	Angus Franklin - Tower Upgrade (Contract 95-23-01)	Null	($21,775)	($43,550)	($43,550)	($43,550)	($43,550)	($43,550)	($43,550)
	Total			**($53,025)**	**($135,486)**	**($106,050)**	**($118,550)**	**($118,550)**	**($118,550)**	**($118,550)**
Broadband	5 - BB Fiber Line Extension	Advanced Wireless/Small Cell	214	($58,800)		($58,800)				
	Total			**($58,800)**		**($58,800)**				
Grand Total				**($2,599,537)**	**($3,429,102)**	**($3,113,466)**	**($3,067,166)**	**($3,067,166)**	**($3,067,166)**	**($3,067,166)**

Power Supply Plan

Tab 10

Public Utility District No. 1 of Benton County

Power Supply Plan

2023

Contributors

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Blake Scherer	Senior Engineer, Power Management	Benton PUD

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EXECUTIVE SUMMARY

The Power Supply Plan is prepared annually to determine the District's energy requirements and resources establishing the power supply budget for the upcoming year. Looking five years out, the Power Supply Plan is developed using information from several sources, including the District's latest load forecast, the current Bonneville Power Administration (BPA) Slice/Block and Load Following Agreements (which contains load-specific information and requirements for each fiscal year), updated BPA power and transmission rates, the District's load/resource balance, forward market prices, historical and forecasted weather data, and Washington State renewable and clean energy requirements. Its purpose is to provide background, highlight key data assumptions, and synthesize conclusions to inform the District's 2023 power supply budget.

The District purchases for energy and capacity from several resources: more than 85% of the District's supply is purchased under a long-term contract with BPA in the form of the Block and Slice Products, which will switch to a new BPA Load Following contract in October 2023; about 1 aMW of energy from the Packwood Lake Hydroelectric Project; about 6 aMW of renewable energy, divided evenly between the Nine Canyon and the White Creek Wind Projects in Eastern Washington; and a seasonal capacity product (call option) that provides 75 MW in Summer and 25 MW in Winter to help meet seasonal peak deficits (on peak hours), should the District elect the call on the energy. Given the District's forecast load and seasonal high demand periods, its energy and capacity supply is expected to be sufficient, under average water conditions, in 2023.

Power Management staff worked with The Energy Authority (TEA) to develop a list of fixed cost power supply assumptions for 2023-2027, which will be covered in detail in the following chapters. The fundamental assumptions of the District's power supply budget are as follows:

- An updated District load forecast adopted in April 2022 – included in Section I
- BPA rate escalation assumptions: (BPA fiscal year is October 1 through September 30)
    - FY2023: Actual BP-22 power and transmission rates
    - FY2024-FY2025: BP-24 Settlement Proposal power and transmission rates
    - FY2026-FY2027: 3.0% increase in power and 3.0% increase in transmission rates
- District's Rate Period High Water Mark (RHWM) is 191.661 aMW in FY2023 and it increases to 200.923 aMW in FY2024. It is assumed to remain at 200.923 aMW through FY2027.
    - Through BPA's BP-24 RHWM Process, the methodology for determining the amount of annual firm generation available to the Federal Columbia River Power System (FCRPS) was changed to using a 30-year monthly P10 historical calculation as opposed to the previous practice of using the 1937 water year (a historically poor water year). This resulted in a large increase in expected annual firm generation.
- Most BPA spill costs are included in the BP-22 power rates. The U.S. District Court for the District of Oregon ordered increased spill at eight Federal Columbia River Power System dams on the lower Columbia and Snake rivers for the 2018 spring fish passage season. BPA and its stakeholders agreed to continue the increased spill in 2019 and 2020, and after a federal review of the Columbia River System Operations (CRSO), spill is expected to continue at 125% Total Dissolved Gas (TDG) for the foreseeable future. The CRSO added some additional operations at the headwater projects that reduced critical inventory. These impacts are included in Slice product generation assumptions.

- Historically, the District has used Monte Carlo analysis to set its annual power supply budget. Specifically, the stochastic model simulates the distribution of annual power cost by generating a thousand scenarios of the variable inputs including: Slice generation, load, power prices and natural gas prices. With the District switching its BPA product from Slice/Block to Load Following in October 2023, the existing stochastic model can only be utilized for the first 9 months of the year. For the remaining 3 months of 2023, and for future years, the District is making use of historical monthly peak loads to estimate power costs, since monthly peak load is the determining variable for the Load Following product's cost. The District sets its 2023 budget at the 25th percentile net power cost (i.e., the probability of meeting budget is 75%), and the 50th percentile for forecasting years beyond 2023.
- A Power Reserve Distribution Credit (RDC) will be triggered for FY2023 resulting from the Settlement process between BPA and its customers for BP-24. This is because the level of financial reserves available for risk that are attributed to Power Services have reached such a point to trigger this clause, which will result in a large credit to the District. The amount of the RDC credit for CY2023 is expected to be $6,104,878.

Table 1 below are net power cost forecasts using the 25th and 50th percentile scenarios for 2023-2027. Monthly, the District's Risk Management Committee reviews expected loads compared to expected energy output to ensure the District is well positioned to maximize the value of energy surpluses and to mitigate the risk of energy shortages and fluctuating market prices.

Percentile	2023	2024	2025	2026	2027
25%	$71,436,032	$81,844,352	$83,862,146	$85,071,858	$86,912,792
50%	$63,814,410	$80,096,228	$82,119,234	$83,332,835	$85,289,767
Budget vs Expected (25% - 50%)	$7,621,622	$1,748,124	$1,742,912	$1,739,023	$1,623,025

TABLE 1: ANNUAL BUDGET NET POWER COST PERCENTILES

SECTION I: LOAD FORECAST

The District load forecast used for the power supply budget is based on the Ten-Year Load and Customer Forecast Report 2022-2031 adopted by the Commission (Resolution 2600) on April 26, 2022. The annual wholesale load forecast is shaped monthly based on the average observed actuals over the previous three years. The monthly load forecast is then split between heavy load hours (HLH) and light load hours (LLH) as displayed in **Figure 1.** The 2022 retail load forecast projected 5-year and 10-year annual average rates of growth to be 0.35% and 0.29%, respectively, as illustrated below in **Figure 2.**

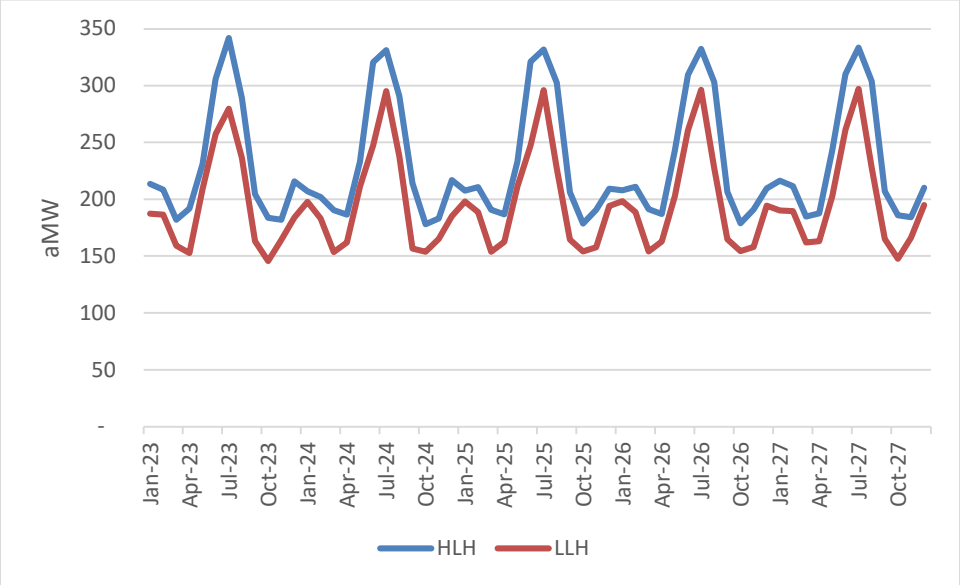


FIGURE 1: MONTHLY HLH AND LLH LOAD FORECAST

FIGURE 2: ANNUAL RETAIL LOAD FORECAST

SECTION II: DISTRICT RESOURCES

The District sources its power requirements through a long-term power supply contract with BPA, as well as from several other non-federal sources of power. This section describes the District's current and expected resources over the five-year period, 2023-2027.

BPA RESOURCES

The District's Power Sales Agreement with BPA is the single largest source of power to the District. The Slice/Block Product provides for the combined purchase of two distinct power products for the District, and are indexed to the actual generation and shape of the Federal Columbia River Power System (FCRPS). As a Block purchaser, the District receives Firm Requirements Power on a flat monthly block basis. As a Slice purchaser, the District accepts the risk of fluctuations in actual Federal system output and accepts responsibility for managing its percentage share of the Federal system output to serve its load. There is no guarantee that the amount of Slice output made available, when combined with Firm Requirements Power made available under the Block Product, shall be sufficient to meet the District's load obligations, be it hourly, daily, weekly, monthly, or annually.

Under the Slice Product, the District will receive 1.36792% of the FCRPS output. This allocation is adjusted down slightly from its initial Slice percentage of 1.38126% by the Slice Percentage Adjustment Ratio (SPAR) of 0.99034. The SPAR is adjusted every two years based on new resources that are added to the BPA system to meet new BPA customer needs, but has not changed since FY2020. Slice is paired with the Tier 1 Block Product to meet additional demand up to the Rate Period High Water Mark (RHWM) of 191.661 aMW.

The critical Slice allocation for FY2023 is 91.246 aMW; however, actual Slice generation is dependent upon actual water flows through the FCRPS. The District contracts with TEA to schedule, manage and optimize the Slice Product to maximize the value of the expected output. Tier 1 Block is distributed as a fixed annual amount, which is shaped to monthly load according to BPA Block Shaping Factors. The block shaping factors were determined based on the District's monthly load shape in FY2010. The Tier 1 Block amounts and the block shaping factors are shown in **Table 2** and **Table 3**. As part of the BPA agreement, the District agrees to meet its load with its own resources and market purchases beyond the contracted BPA products. Currently, annual loads are forecasted to be higher than the District's BPA RHWM by 18.057 aMW for FY2023. Although outside of the 5 year Power Supply Plan look, BPA is considering augmentation of their system for post-2028 contracts. This has the potential to deliver additional Tier 1 headroom to the District in the post-2028 CHWM.

The majority of the BPA power costs to the District are captured by the Composite Customer Charge, which is a function of the District's FY2023 Tier 1 Cost Allocator (TOCA) of 2.84517% and the BPA Composite Rate. BPA Costs are outlined in **Table 15: Cost per MWh from BPA** later in the document.

Month (aMW)	FY2023
October	76.8
November	84.2
December	95.8
January	104.0
February	86.4
March	77.0
April	85.5
May	104.0
June	125.8
July	147.8
August	127.7
September	88.0
Block Total (aMW)	100.4
Block Total (MWh)	879,636

TABLE 2: TIER 1 BLOCK AMOUNTS

Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Block Shaping Percentage	6.5	6.9	8.1	8.8	6.6	6.5	7.0	8.8	10.3	12.5	10.8	7.2

TABLE 3: MONTHLY BLOCK SHAPING PERCENTAGES

The U.S. District Court for the District of Oregon ordered increased spill at eight Federal Columbia River Power System dams on the lower Columbia and Snake rivers for the 2018 spring fish passage season. BPA and its stakeholders agreed to continue the increased spill in 2019 and 2020, with 2020 spill increasing to 125% Total Dissolved Gas (TDG). The principles in the 2019-2021 Spill Agreement have been carried forward in the released findings in the CRSO EIS Preferred Alternative. The most recent CRSO EIS Preferred Alternative focuses on spilling more for fish during times when power generation is less valuable, but also balancing it by spilling less when generation is valuable/needed. The current 125% TDG and flex spill practices are expected to continue moving forward. The CRSO requires additional operational changes at the headwater projects. These changes reduced firm system generation and the impacts are included in both slice generation assumptions and reduced block amounts.

On November 12, 2021, the District requested that the Bonneville Power Administration allow the option to exercise our one-time right to change the purchase obligation from Slice/Block to Load Following, as referenced in Section 11 of Contract 09PB-13005. BPA conducted an analysis of the District's request, along with six other PUD requests, to switch from Slice/Block to Load Following. Following BPA's product switching analysis and their open public comment period, they issued a letter on June 30, 2022 to the region approving these six PUD requests for the option to switch from Slice/Block to Load Following. Each interested PUD was required to provide notice to BPA by October 31, 2022. The District commission approved the staff's recommendation on September 27, 2022 to switch to Load Following effective October 1, 2023.

The District will continue to rely on BPA for power resources, but the switch to the Load Following Product will provide greater certainty and less risk of power supply needs going forward. This October 2023 product switch with BPA is modeled throughout this Power Supply Plan.

BPA's current power contracts are 20-year agreements, signed in 2008 and expiring in 2028. In 2020, BPA launched the Provider of Choice initiative to provide a process and framework for Post-2028 BPA power contracts with its customers, and the District is actively participating in this process to consider our future resource portfolio Post-2028.

It is expected that future Power Supply Plans thru 2027 will reflect the District being served under the Load Following Product. BPA is anticipating Post-2028 contracts will be signed in 2025, therefore the District will determine which Post-2028 product will be available and select its new 20-year contract at that time.

NON-BPA RESOURCES

In addition to short-term energy purchases from the wholesale energy market, Benton PUD has secured five non-BPA resources: Nine Canyon Wind Project, LL&P Wind Energy, Inc. at White Creek, White Creek Wind I Project, Packwood Hydroelectric Project, and a Seasonal Capacity Product starting in late 2022. The District previously had a contract for 50 MW from the Frederickson 1 Generating Station combined cycle combustion turbine, but that contract ended as of August 31, 2022.

NINE CANYON WIND PROJECT

The Nine Canyon Wind Project is situated on dry land wheat farms approximately eight miles southeast of Kennewick, WA in the Horse Heaven Hills. The District began purchasing renewable energy from Phase I of the project in 2002, when a Power Purchase Agreement was signed with Energy Northwest, a State of Washington Joint Operating Agency (JOA), for 3 MW of generating capacity for a commitment continuing through June 30, 2023. On October 30, 2006, the District signed an Amended and Restated Agreement with Energy Northwest, and the other purchasers, which extended the term of the Agreement through July 1, 2030 (with rights to extend the agreement in additional five-year terms). This purchase produces about 1 aMW of energy, at $28.46 per MWh in 2023.

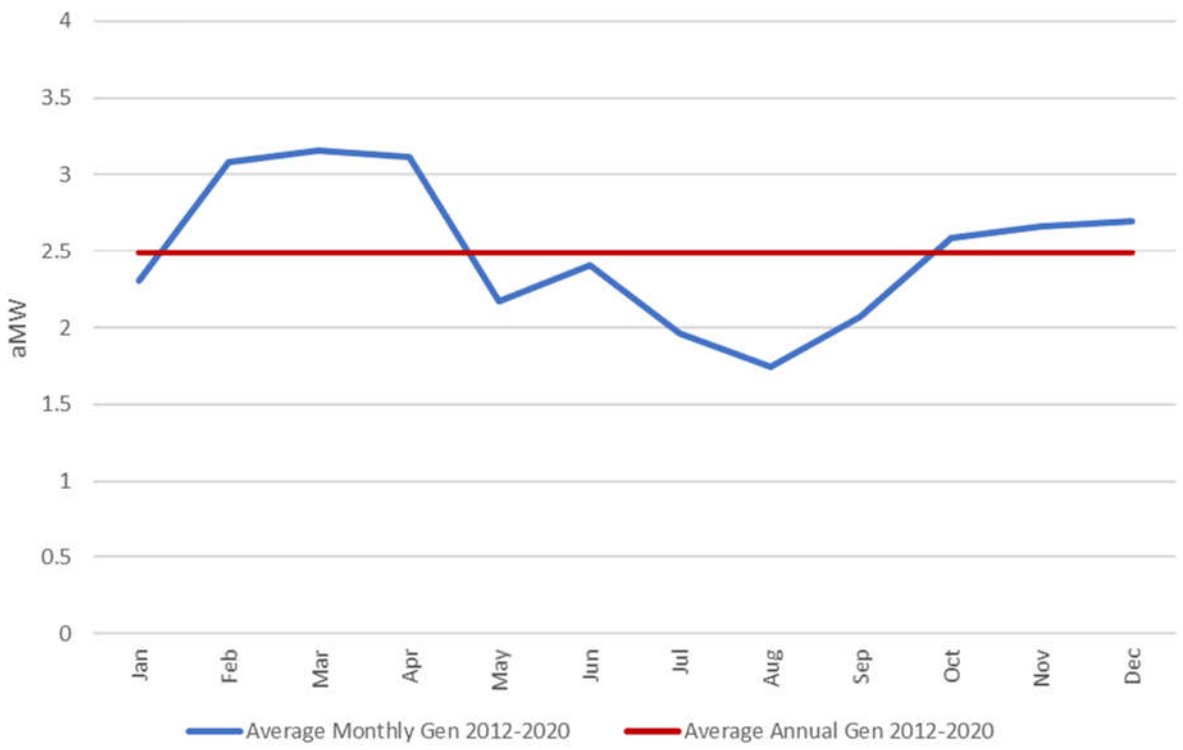


FIGURE 3: NINE CANYON AVERAGE MONTHLY GENERATION (2012-2020)

In 2008, the District contracted to purchase an additional 6 MW of generating capacity (approximately 2 aMW of energy) from Phase III of the project. The cost of Phase III is $76.17 per MWh in 2023. Although Nine Canyon Wind provides an intermittent source of energy, there is no material difference in the amount of energy the District receives from month to month. **Figure 3** above displays the District's share of the actual monthly generation from the Nine Canyon Wind Project for the period January 2012 through December 2020.

The average cost of Phase I and Phase III is forecasted to be $60.26 per MWh in 2023.

Table 4 shows the annual cost of output purchased from each phase. In addition to these costs, the District incurs an estimated $14,000 transmission cost each month.

Nine Canyon Wind Project is a renewable energy source with Environmental Attributes that qualify under the State of Washington's Energy Independence Act (EIA) and will help the District meet its renewable energy requirement under this Act.

Year	Phase I Cost ($/MWh)	Phase III Cost ($/MWh)	Total Cost per MWh	Phase I Cost per Month	Phase III Cost per Month	Total Annual Cost
2023	$28.46	$76.17	$60.26	$20,773	$111,206	$1,583,747
2024	$24.19	$76.17	$58.84	$17,658	$111,206	$1,546,368
2025	$24.19	$76.17	$58.84	$17,658	$111,206	$1,546,368
2026	$24.19	$76.17	$58.84	$17,658	$111,206	$1,546,368
2027	$24.19	$76.17	$58.84	$17,658	$111,206	$1,546,368

TABLE 4: NINE CANYON WIND COSTS

LL&P WIND ENERGY, INC. AT WHITE CREEK

In 2007 Benton PUD entered into a 20-year contract with Lakeview Light & Power (LL&P Wind Energy, Inc.) to purchase 3 MW of generating capacity from the White Creek Wind Project located near Goldendale, WA. This purchase produces approximately 1 aMW of energy. The cost of the renewable energy is estimated to be $69.94 per MWh in 2023, and costs escalate by 2% each year of the contract. **Table 5** is a breakdown of the project's fixed cost assumptions through 2027. This contract expires at the end of June 2027.

White Creek Wind Project is a renewable energy source with Environmental Attributes that qualify under the State of Washington's EIA and will help the District meet its renewable energy requirement under this Act.

Year	Est. Cost per MWh	Cost per Month	Total Annual Cost	YoY Increase
2023	$69.94	$51,056	$612,674	N/A
2024	$71.34	$52,078	$624,938	2%
2025	$72.77	$53,122	$637,465	2%
2026	$74.23	$54,188	$650,255	2%
2027	$75.71	$55,268	$331,610	2%

TABLE 5: LL&P WIND ENERGY, INC. AT WHITE CREEK COSTS

WHITE CREEK WIND I

In 2008 Benton PUD signed an agreement to purchase 6 MW of generating capacity from the White Creek Wind I Project for a period of 19 years, with the option to purchase part of the project beginning in 2017 and each year thereafter. To date, the District has not elected to exercise this option and does not anticipate exercising the option in 2023. This purchase produces approximately 2 aMW of energy, and the contract expires at the end of November 2027.

Benton PUD paid Klickitat PUD (a project owner) a lump sum for the capital component. The total generation cost is estimated at $62.66 per MWh in 2023. Capital costs are fixed, and O&M costs escalate between 2-4% each year through 2026. **Table 6** below is a breakdown of the fixed cost assumptions for this project. **Figure 4** displays the District's share of the actual monthly generation from both White Creek Wind purchase agreements for the period January 2012 through December 2020.

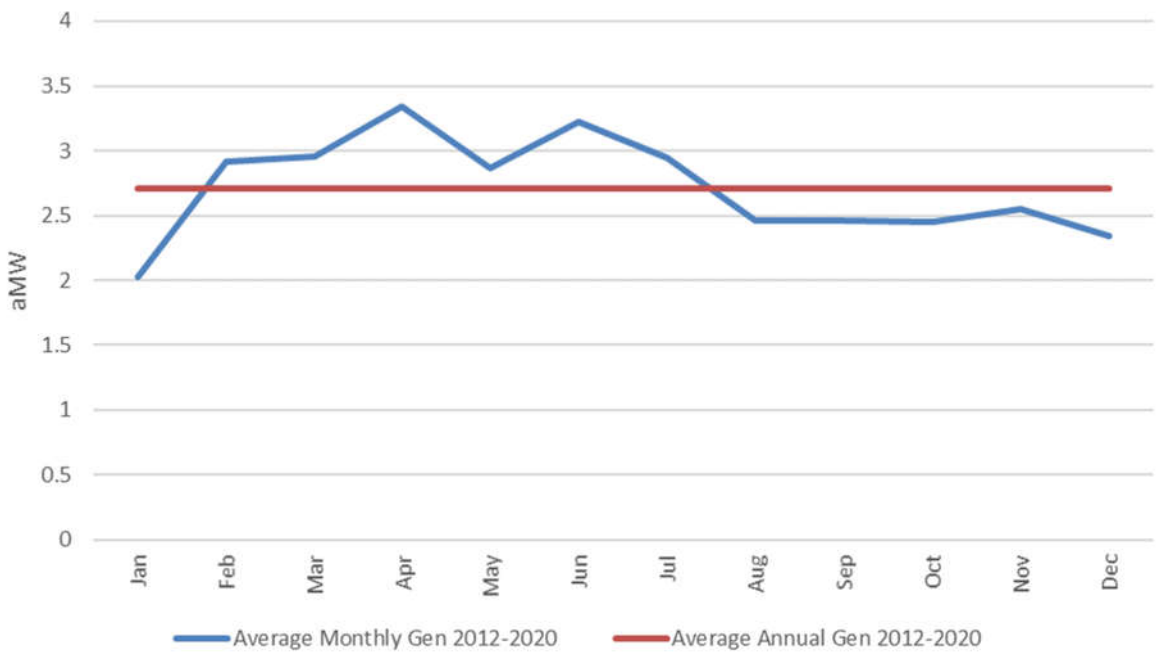


FIGURE 4: WHITE CREEK AVERAGE MONTHLY GENERATION (2012-2020)

White Creek Wind Project is a renewable energy source with Environmental Attributes that qualify under the State of Washington's EIA and will help the District meet its renewable energy requirement under this Act.

Year	Total Cost per MWh	O&M Cost per MWh	Annual O&M Cost	Annual Fixed Cost	Total Annual Cost
2023	$62.66	$29.65	$519,415	$578,400	$1,097,815
2024	$63.55	$30.54	$534,998	$578,400	$1,113,398
2025	$64.47	$31.45	$551,048	$578,400	$1,129,448
2026	$65.41	$32.31	$567,579	$578,400	$1,145,979
2027	$60.86	$30.51	$536,022	$530,200	$1,066,222

TABLE 6: WHITE CREEK WIND I COSTS

PACKWOOD LAKE HYDROELECTRIC PROJECT

The Packwood Lake Hydroelectric Project (Packwood) is a hydroelectric generating facility with a nameplate capacity of 26.125 MW that is owned and operated by Energy Northwest, a State of Washington Joint Operating Agency (JOA). The project is located 5 miles east of Packwood, WA in Gifford Pinchot National Forest. Project participants include Benton PUD, Clallam PUD, Clark County PUD, Ferry County PUD, Franklin PUD, Kittitas PUD, Klickitat PUD, Lewis PUD, Mason PUD No. 3, Skamania PUD, Snohomish PUD, and Wahkiakum PUD. Packwood's fiscal year is July through June.

Benton PUD owns a 14% share of the output from the Packwood Hydroelectric Project, equating to approximately 3.66 MW of generating capacity. The expected average output from Packwood is approximately 1 aMW of energy. **Table 7** shows the fixed cost assumptions for the District's share of the Packwood Hydroelectric Project. Energy Northwest recently released a long-range plan summary

projecting project costs through 2027 and highlighted an increase in costs of 3% annually through the study period. This project currently does not qualify as a renewable resource under State of Washington's EIA.

Year	Total Cost per MWh	Cost per Month	Total Annual Cost
2023	$54.17	$39,546	$474,548
2024	$55.80	$40,732	$488,784
2025	$57.47	$41,954	$503,448
2026	$59.20	$43,213	$518,551
2027	$60.97	$44,509	$534,108

TABLE 7: PACKWOOD HYDROELECTRIC PROJECT FIXED COSTS

SEASONAL CAPACITY PRODUCT

The District's resource portfolio can experience significant seasonal capacity deficits, depending on the region's hydrological conditions and seasonal temperatures. Renewable energy resources such as wind and solar cannot wholly address these deficits due to the intermittent nature of these technologies, specifically during long duration summer heat and winter cold events that often occur within our service territory.

The Seasonal Capacity Product is a call option that provides 75 MW in summer and 25 MW in winter to meet seasonal peaking deficits should the District elect the need to take energy. It is expected to cover a portion of the District's possible seasonal capacity deficits. The contract period starts in December 2022 and ends in August 2025. The cost of capacity is $3.75 per kW month and the cost of energy when taken is the Mid-C Day Ahead Index plus $0.70. **Table 8** below shows the annual costs of capacity without the option for energy.

Year	Winter Capacity Cost	Summer Capacity Cost	Annual Capacity Cost
2023	$281,250	$562,500	$843,750
2024	$281,250	$562,500	$843,750
2025	$187,500	$562,500	$750,000
2026	$0	$0	$0
2027	$0	$0	$0

TABLE 8: SEASONAL CAPACITY COSTS

The District has also assumed in its budget projection for 2023 that it will purchase some amount of additional summer and winter capacity to address any forecast seasonal deficits while under the Slice/Block product with BPA. The additional budgeted amount for 2023 is $1,675,000, resulting in a total budgeted amount of $2,518,750 for option premiums. Once the District's BPA product switches over to the Load Following contract, there will no longer be a need to address capacity deficits, as those would fall under the responsibility of BPA.

TRANSMISSION

The District currently has a long-term Point-to-Point (PTP) Transmission agreement with BPA Transmission Services through FY2023 which will switch to a Network (NT) Transmission agreement in October 2023. The firm annual capacity for the PTP agreement is 423 MW, whereas there is no limit with the NT agreement and billing is determined by the District single-hour load that coincides with BPA's single-hour system peak. Fixed costs for the BPA Transmission agreement are budgeted at nearly $11 million in 2023. For the first 9 months under the PTP agreement, The District is projected to be long transmission for most hours which the District monetizes through short-term PTP sales. Net sales of surplus transmission are projected to be $724,258 in 2023.

SECTION III: LOAD/RESOURCE BALANCE

This section examines the District's ability to meet its load with current resources under several Slice generation scenarios. The goal is to identify any capacity issues and the likelihood that they could occur.

MONTHLY LOAD/RESOURCE BALANCE: 2023

The following portion of the analysis examines the District's monthly load/resource balance under 50th percentile Slice generation scenarios. The scenario assumes expected loads. The net positions shown are the District's hedged financial net positions (i.e., net of forward purchases and sales already executed). When the Load Following contract begins in October 2023, the District's load-resource balance will be maintained by BPA, with Tier 2 energy supplying the load needs of the District beyond the Tier 1 power they are entitled to via the Load Following product. The amount of Tier 1 power is equal to the District's RHWM mentioned in the previous section. It is expected that the District will not declare their wind resources to load under the Load Following contract and will instead sell the energy to the market until these contracts expire in 2027 and 2030. This will leave the District with a small resale position of approximately 5 aMW that is exposed to the index market, and which can be hedged with financial swaps to lock in expected revenue if desired, as has been done under the Slice/Block product.

EXPECTED SLICE GENERATION SCENARIO

The figures below show the District's load/resource balance under a 50th percentile Slice generation scenario with expected loads. **Figure 5** shows BPA's expected FCRPS generation under a 50th percentile Slice scenario, showing that Slice varies substantially by month/season.

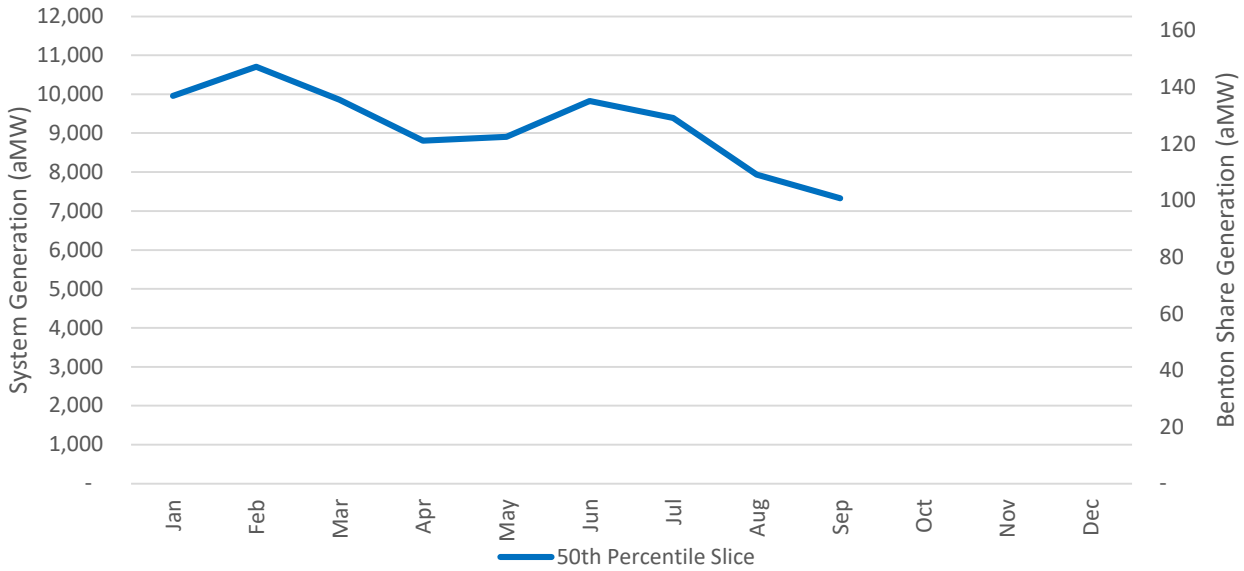


FIGURE 5: 50TH PERCENTILE 2023 MONTHLY SLICE GENERATION

The District's Risk Management Committee reviews expected loads and energy supply on a monthly basis to ensure the District is well positioned to maximize the value of energy surpluses and mitigate the risk of energy shortages and market price exposure. **Figure 6** shows the District's load/resource balance, including slice hedges given expected load. Note that there are small energy deficits in the months of June, July, and August, while other months have surplus. The District actively manages the excess surplus and deficits to optimize value and reduce costs to customers through price risk mitigation.

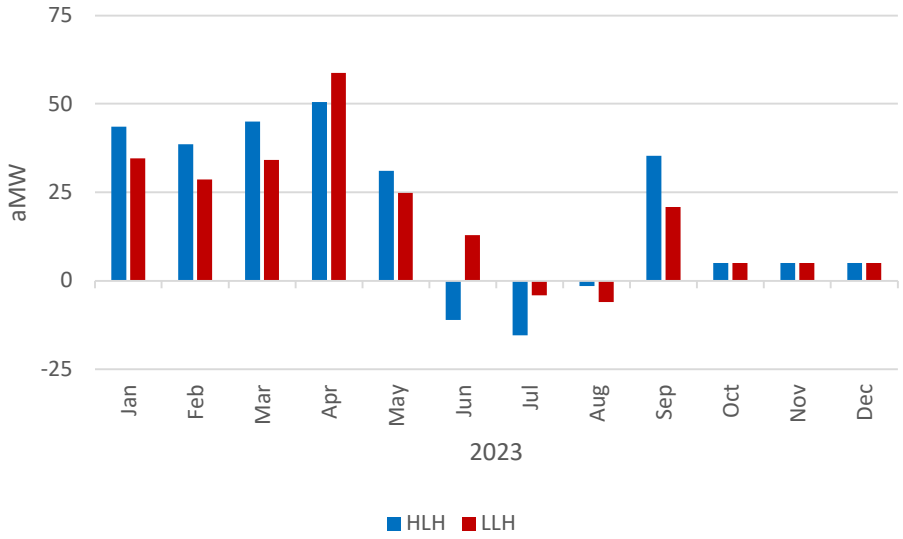


FIGURE 6: HEDGED PORTFOLIO NET POSITION, 50TH PERCENTILE SLICE, EXPECTED LOAD

CAPACITY STUDY

District staff regularly reviews its seasonal capacity positions to ensure that sufficient physical/financial power and transmission are secured to endure peaking events. Throughout the year the District carries a surplus, on average. Like other utilities located east of the Cascades with agricultural loads, the District faces the greatest risk of capacity deficits on a planning basis during the summer period, while generally maintaining adequate capacity the remainder of the year. Regional capacity is generally more available during the summer than the winter for a couple of main reasons. First, low air conditioning penetration (though rising) in the region's load centers (Seattle and Portland) keeps demand low during periods of high temperature. Second, the load centers are generally winter peaking utilities, which strains the region's generation capacity. The purpose of this study is to analyze the District's load/resource balance under extreme load conditions in the winter and summer.

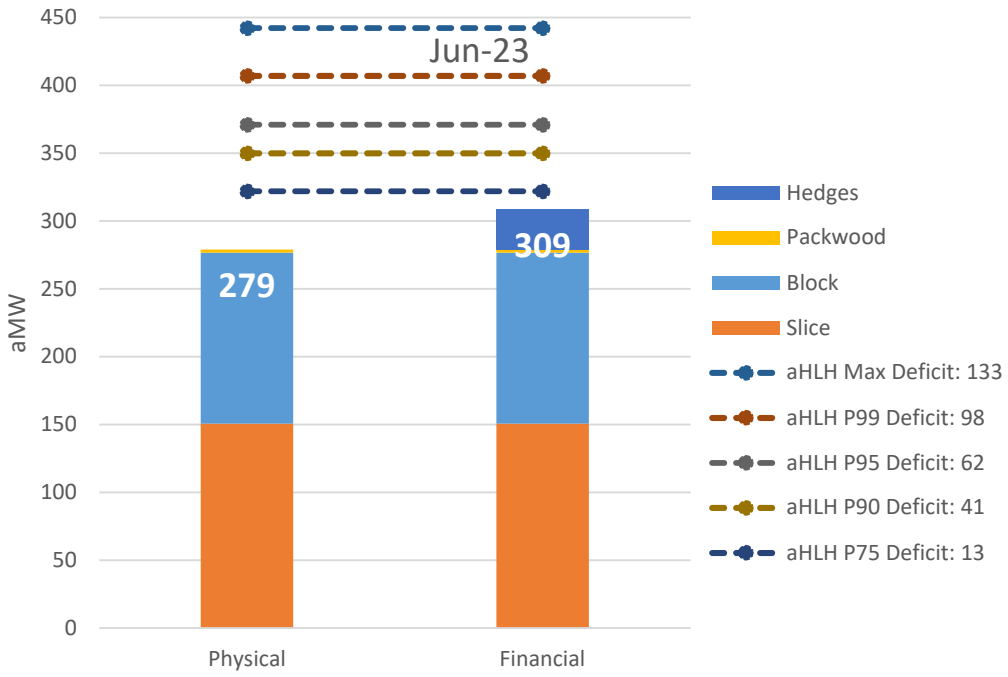
The District's maximum energy needs typically occur on hot summer days when air conditioning and irrigation loads are peaking. The District compared historical average daily HLH loads against current expected resources to examine the potential risk facing the District in a capacity event. On the hottest of those days, maximum temperatures reached upwards of 109°F. While significantly warmer than average, it is a near guarantee that the District experiences temperatures in excess of 100°F every year. It is important for District staff to understand its energy position for a near annual event. **Figure 7** shows that

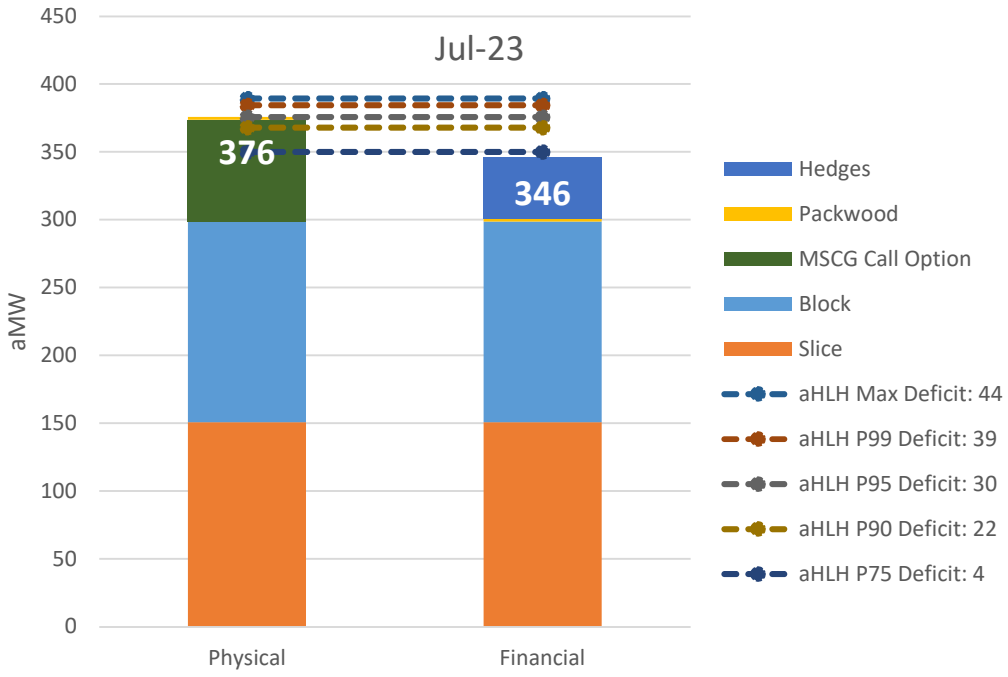
over the past decade, average daily HLH loads reached as high as 442 aMW in the summer, and 338 aMW in the winter.

aHLH	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max	338	303	271	254	314	442	390	364	282	212	256	312
99%	310	282	246	233	311	407	384	353	270	208	248	286
95%	266	254	202	221	296	371	376	344	251	195	225	265
90%	237	244	189	214	281	350	368	332	234	189	215	243
75%	218	203	179	200	261	322	350	305	216	181	190	224
50%	199	179	170	186	230	292	328	280	196	173	170	204

FIGURE 7: HISTORICAL DAILY AVERAGE HLH LOADS FROM 2011-2021

District staff has historically utilized two separate tools to manage against cold weather events: outright power purchases (hedges) and options. Outright power purchases are preferred when the temperature is colder, or water conditions are worse than average. During average water and temperature conditions, the District is traditionally surplus during the winter. Purchasing power to protect against a 1-in-2 or worse peak event increases the surplus position, and thus increases risk. Utilizing options, however, provides the District with an insurance policy. It gives the District the right, but not the obligation, to purchase power at a predetermined price in exchange for a smaller upfront option premium per MWh (the total premium can be significant depending on the volume purchased). Starting in December 2022 the District has a 25 MW HLH winter call option that can be exercised during the months of December, January, and February, and a 75 MW HLH summer call option that can be exercised in July and August.


Jun-23
aMW
450
400
350
300
250
200
150
100
50
0
279
309
Physical
Financial
Hedges
Packwood
Block
Slice
aHLH Max Deficit: 133
aHLH P99 Deficit: 98
aHLH P95 Deficit: 62
aHLH P90 Deficit: 41
aHLH P75 Deficit: 13


Jul-23
aMW
450
400
350
300
250
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150
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50
0
376
346
Physical
Financial
Hedges
Packwood
MSCG Call Option
Block
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aHLH P75 Deficit: 4

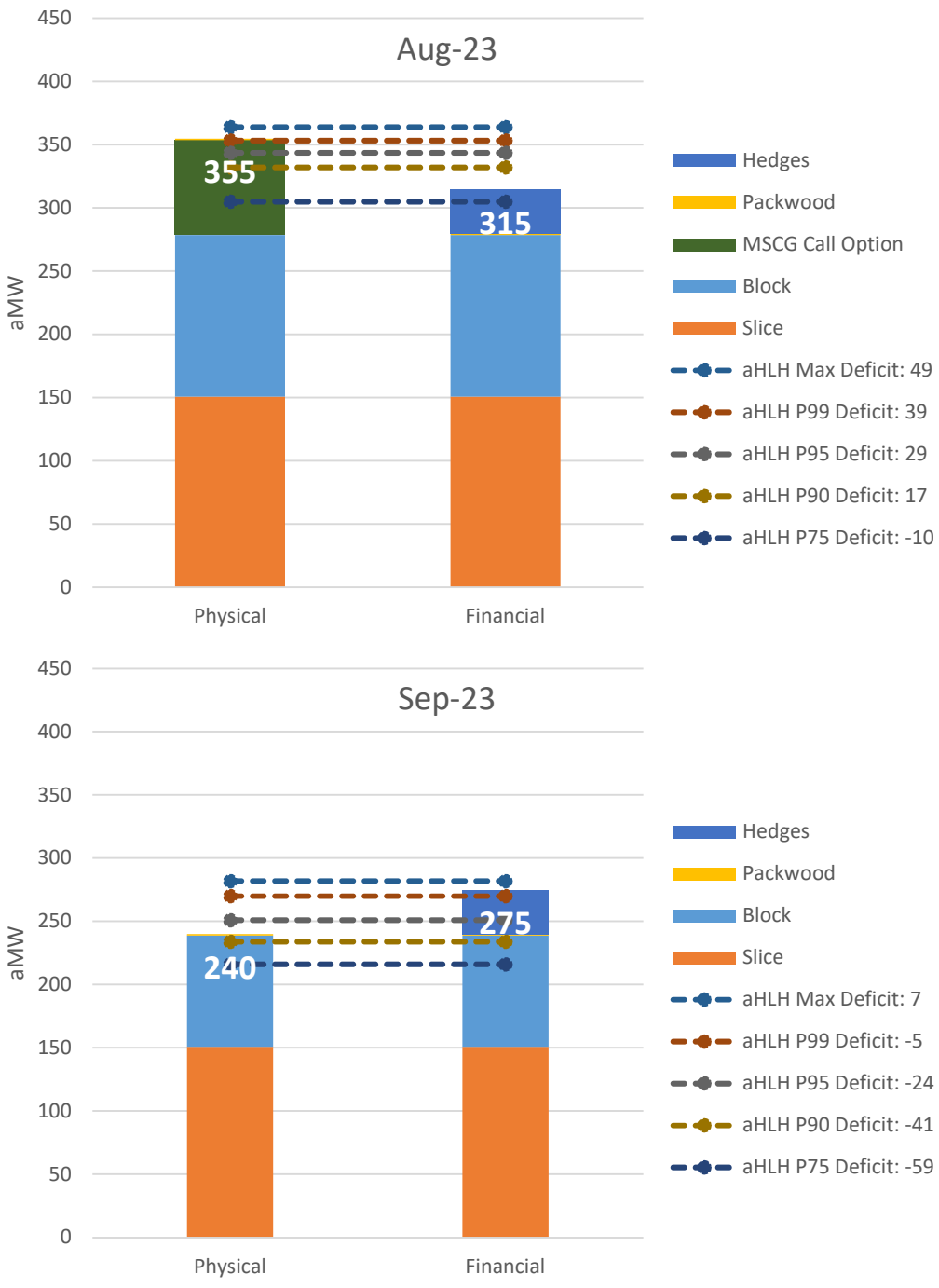

FIGURE 8: SUMMER DAILY AVERAGE HLH CAPACITY POSITIONS

Figure 8 above shows the forecasted summer capacity positions for June-September 2023. The District is forecasted to be short of meeting its loads during a 2023 summer peak event. The District purchased an average of 35 MW swaps for summer HLH periods to serve as financial protection against high market prices.

Peak load events can also occur in the winter, though to a much lesser extent than in the summer. **Figure 9** shows the District's winter capacity positions for January and February 2023.

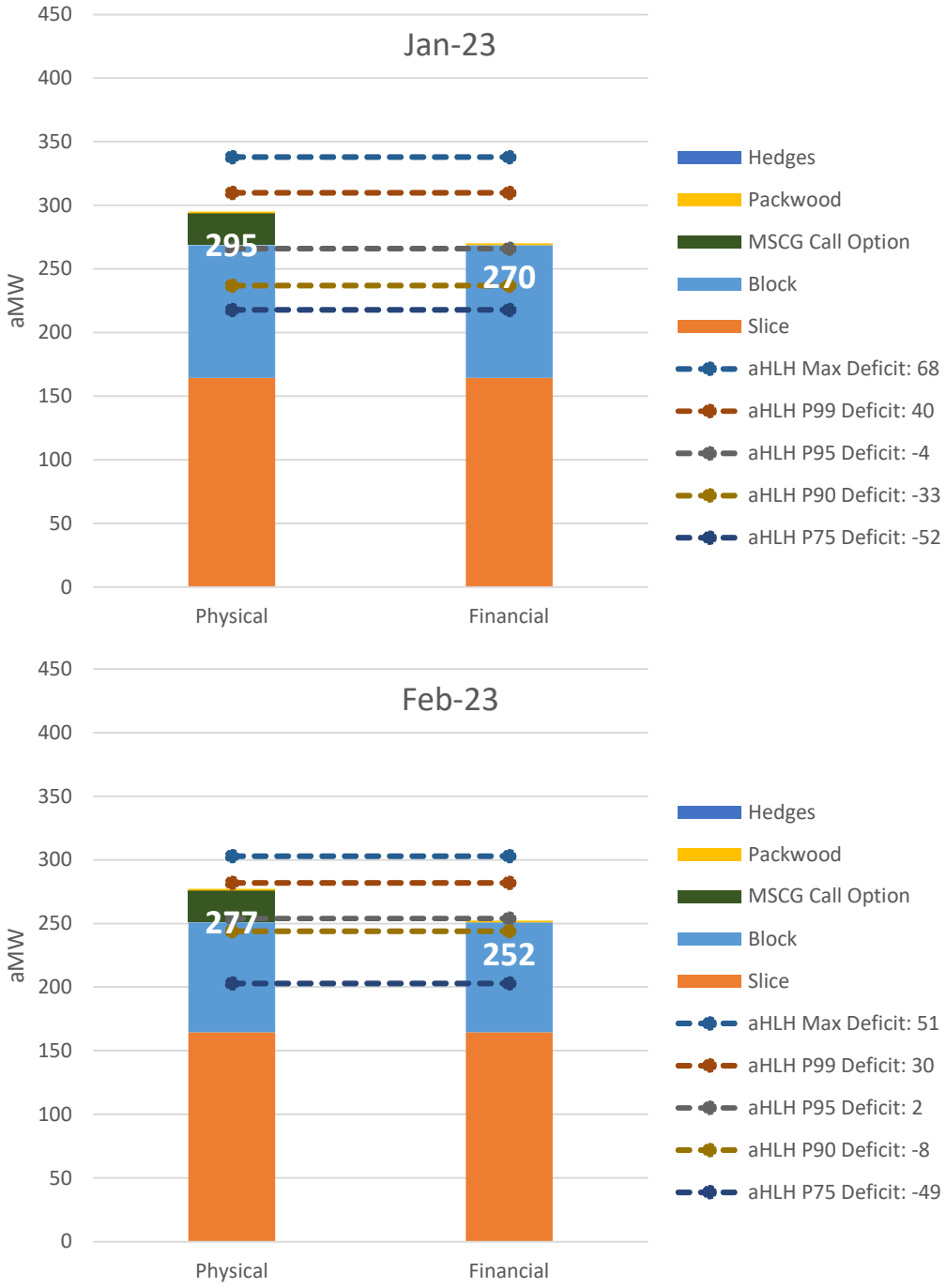

FIGURE 9: WINTER DAILY AVERAGE HLH CAPACITY POSITIONS

ANNUAL LOAD/RESOURCE BALANCE: 2023

The following section shows the District's annual average load/resource balance for the final year of the Slice/Block product in 2023. **Figure 10** represents the District's current resource stack, which on an annual basis is more than necessary to meet the District's annual average energy needs of 215.2 aMW in 2023. With the switch to Load Following in October 2023, the District expects BPA to maintain load/resource balance as part of the new Load Following contract.

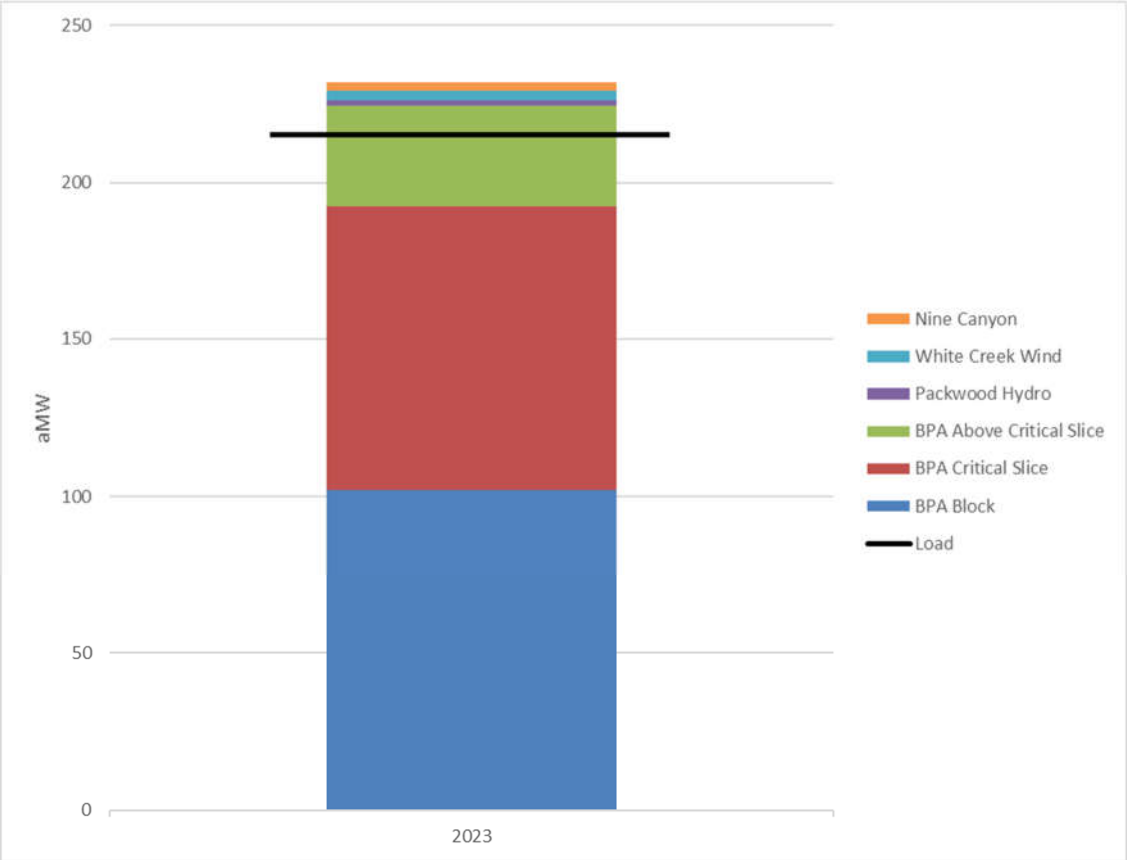

FIGURE 10: DISTRICT'S 2023 RESOURCE STACK

RENEWABLE LOAD/RESOURCE BALANCE: 2023-2027

In order to comply with the EIA's Renewable Portfolio Standard (RPS) requirements, the District must meet at least fifteen percent of its two-year average load with qualifying renewable energy, or renewable energy credits (RECs). The District has three renewable energy resources that qualify under EIA as well as multiple renewable energy credit contracts.

As can be observed in Table 9, it's anticipated that the District will have sufficient renewable resources to meet RPS requirements through 2024. Once the Idaho Wind Projects (IWP) contract expires, the District falls short of the requirement by 2.8 aMW starting in 2025.

	Calendar Year									
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
RPS Requirement %	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
RPS Load Basis aMW	204.6	203.3	204.1	204.9	205.6	206.1	206.5	207.0	207.4	207.9
RPS Requirement aMW	30.7	30.5	30.6	30.7	30.8	30.9	31.0	31.0	31.1	31.2
REC Contracts										
IWP	4.0	4.0								
Biofuels	7.5	7.5	7.5							
White Creek	2.7	2.7	2.7	2.7	1.8					
BPA	3.7	3.4	3.4	3.4	3.0	2.5				
3Degrees	6.8	6.8	6.8	6.8	6.8	6.8				
RPS Advisors	4.6	4.6	4.6	4.6	4.6	4.6	4.6			
Nine Canyon	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.4		
Contract Total aMW	32.0	31.8	27.8	20.2	18.9	16.6	7.3	1.4		
RPS Net Position	**1.3**	**1.3**	**-2.8**	**-10.5**	**-11.9**	**-14.3**	**-23.7**	**-29.7**	**-31.1**	**-31.2**

TABLE 9: RENEWABLE PORTFOLIO STANDARD NET POSITION

As shown in **Table 10** in addition to the District's qualifying renewable resources, the District also entered into an agreement with Emerald City Renewables (previously Biofuel) to purchase approximately 33,000 RECs per year beginning 2016 through 2025. On September 18, 2013, the Washington Department of Commerce issued an opinion that the Biofuels landfill gas plant would qualify as a renewable distributed-generation (DG) facility under the state's Energy Independence Act, passed as Initiative 937 in 2006. DG facilities are awarded a bonus REC in addition to each generated REC, meaning the EIA qualifying quantity of the Emerald City Renewable contract RECs are 66,000 per year. The District also contracted to purchase unbundled RECs from the Idaho Wind Partners for output from the Yahoo Creek Wind Park, LLC from 2015 through 2024. For planning purposes, the District assumes a delivery of 35,003 RECs per year through the end of the contract; however, the output from Yahoo Creek can fluctuate due to the variability of wind. On September 11, 2018, the Commission approved a firm contract with 3Degrees Group Inc. to purchase 60,000 RECs per year starting in 2019 through 2028. Additionally, on September 10, 2019, the Commission approved a firm contract with RPS Advisors to supply 40,000 RECs per year starting in 2020 through 2029. If RECs are under-delivered during a year, the District may rely on the market to secure the requisite EIA compliant RECs. BPA has the rights to 231.1 MW of wind generating capacity in the WECC. The District is also entitled to approximately 12,000 wind RECs and 20,000 incremental hydro RECs produced by BPA. These incremental hydro RECs must be used in the year they are generated.

Wind generation can vary year to year and therefore REC generation also varies year to year. Buying additional RECs can help mitigate the losses from the poor wind years and increasing curtailments.

Year	2023	2024	2025	2026	2027
IWP	35,003/$6.75	35,003/$6.75	35,003/$8.00*	101,003/$8.00*	101,003/$8.00*
BioFuels	33,000/$12.22	33,000/$12.83	33,000/$13.47		
3 Degrees	60,000/$5.90	60,000/$5.90	60,000/$5.90	60,000/$5.90	60,000/$5.90
RPS Advisors	40,000/$5.50	40,000/$5.50	40,000/$5.50	40,000/$5.50	40,000/$5.50
***IWP/Biofuels replacement, estimated cost per REC**					

TABLE 10: REC PURCHASES

SECTION IV: BUDGETING

FINANCIAL MODEL ASSUMPTIONS

This section outlines the major cost and revenue assumptions made in the Financial Model and used in the development of the District's budget.

FIXED COST ASSUMPTIONS

The following assumptions were developed by Benton PUD Power Management staff and The Energy Authority (TEA) and reviewed by Benton PUD Risk Management Committee. Assumptions are for the five-year period of calendar years (CY) 2023-2027. Assumptions are updated at least annually. Note: Fiscal Year (FY) refers to the BPA Fiscal Year which runs from October 1 through September 30.

BPA FIXED COSTS, RATES & ESCALATION ASSUMPTIONS

- **BPA Composite Charge**: This charge is designed to collect revenue for BPA based on the majority of its costs. It is based on the District's Tier One Cost Allocator (TOCA) and the BPA Composite rate. TOCA is calculated as the lesser of the District's Net Requirements (NR) and Rate Period High Water Mark (RHWM), divided by the sum of all of BPA's customer's RHWM. The NR and RHWM is 191.661 aMW in FY2023. The District's total retail load forecast for FY23 is 210.637 aMW, with 191.661 aMW being served with BPA resources in critical water conditions, with an additional 18.1 aMW that the District is responsible for procuring itself. The RHWM is the limiting factor in FY2023-2027 when accounting for expected future load growth. The FY2023 TOCA is 2.845170% and the Composite Charge is $1,998,417/TOCA%/month. The Composite Charge will increase by about 3.15% in FY2024, to $2,061,416/TOCA%/month. The total Composite charge in CY2023 is expected to be $68,801,703.
- **Non-Slice Charge:** This charge is in reality is a credit. It is designed to return to customers certain BPA credits, primarily BPA's sale of surplus and forecast resultant wholesale sales revenues. It is based on the District's Non-Slice TOCA (NSTOCA) and the Non-Slice BPA Rate. The NSTOCA is the difference between the District's TOCA (2.845170%) and its Slice percentage (1.36792%). In FY2023, NSTOCA is 1.479340%. The Non-Slice Rate is ($329,943)/NSTOCA %/month in FY2023, increasing to ($345,741)/NSTOCA %/month in FY2024. The total credit in CY 2023 is expected to be ($7,343,345).
- **Demand Charge:** This charge will take effect in October 2023 with the product switch to the Load Following contract. For each month, a Demand Determinant is calculated to estimate the monthly charge by taking the difference between the District's resources and its Customer System Peak (the District's 1-hour peak that coincides with BPA's overall monthly 1-hour system peak).
- **BPA Cost Recovery Adjustment Charge (CRAC):** BPA rates have the provision for an adjustment to the base rates if BPA is projecting end of year reserve for risk levels lower than $0M. These EOY forecast are updated in each QBR, but are currently not expected to trigger.

- **Financial Reserve Policy (FRP) Surcharge:** BPA added the FRP surcharge in the BP-20 rate case. It is a provision to add $30M to rates if power reserves for risk are below 60 days cash on hand. As of BPA's 3rd Quarter Financial Review, the FRP that can be as much as $40M per fiscal year, is not expected to be called for due to sufficient cash on hand at the agency through the FY2023-2024 period.
- **Reserve Distribution Clause (RDC) credit:** Resulting from the Settlement process between BPA and its customers for BP-24, a Power RDC credit will be triggered for FY23. This is because the level of financial reserves available for risk that are attributed to Power Services reached such a point to trigger this clause, which will result in a large credit to the District. The amount of the RDC credit for CY2023 is expected to be $6,104,878.
- **Slice True-Up**: Energy Northwest's long-term debt was restructured during FY2014-16, resulting in Slice True-Up credits for FY2014-17. While the refinancing is not expected to change the overall cost of the debt, it back-end loaded the debt such that Slice costs are expected to be lower in the near term and higher in the long term. BPA did not project any refinancing opportunities in 2021. FY2023 the District might see a slice true up charge from BPA. This is based on IPR results showing no increase in 2022/2023 over 2018/2019, which suggests BPA will likely struggle to underspend line items. For the purposes of the CY2023 budget, however, the District is assuming no Slice True-Up charge.
- **Tier 2 Charge**: The District has elected to take Tier 2 Energy from BPA to serve its AHWM needs, which for FY24 is 9.324 aMW. The expected cost for Tier 2 energy is $63.83 per MWh.
- **Load Shaping Charge:** Under the TRM, the Load Shaping Charge only applies to Load Following and Block Products. The Composite and Non-Slice Rates assume that customers receive monthly diurnal BPA power based on the monthly diurnal critical water shape of the FCRPS, which is how power is provided under the Slice product. Since the District takes the block product, it is subject to the load shaping charge. In some months, its block energy will be greater than its share of critical FCRPS and some months it will be less. The monthly diurnal difference will be multiplied by the BPA load shaping rate to determine the load shaping charge. The load shaping rate is BPA's two-year rate case forecast of the Mid-C market, HLH and LLH. The District's forecasted load shaping charge is actually a credit of $1,925,536 for CY2023. This will change to an expected charge starting in CY 2024, the first full year of the District's new Load Following contract.
- **Long-Term Point-to-Point (PTP) and Network Transmission (NT) Cost:** The District has a PTP contract through the end of FY2023, at which point the District is switching to NT. The PTP costs are mostly fixed, whereas the NT costs vary with loads. The total fixed cost for PTP is expected to be $7,842,840 in CY2023 and NT costs are expected to be $1,831,214 for October-December 2013. In CY2024, PTP costs will be $23,568 for the 1 MW of PTP the District will retain, and NT costs are expected to be $9,144,696. Staff is planning for a 3% rate increase over FY2024-25 for the BPA FY2026-27 period
- **Load Regulation Cost:** Load regulation costs are forecasted to be $812,679 in CY2023. The Load Regulation rate is expected to increase by 3% in FY2026.
- **Operating Reserves – Spinning:** $624,267 in CY2023. Spinning Reserves are 3% of total transmission schedules for generation and 3% of schedules for load.

- **Operating Reserves – Supplemental:** $407,892 in CY2023. Like spinning reserves, supplemental reserves are 3% of total transmission schedules for generation and 3% of schedules for load.
- **Energy Imbalance/UAI: Roughly** $192,000 per year. Imbalance charges are based on the difference between scheduled and actual load and assuming random error. The sum should theoretically be close to zero over a long period. Unauthorized increases (UAI) are the result of scheduling errors and an amount is budgeted to cover operational errors.
- **GTA Wheeling Credit, Klickitat Transmission Transfer Net:** $48,419 in CY2023.
- **Reliability Coordinator Charges (CAISO/WECC):** $147,760 in CY2023.
- **Short-Term Firm/Non-Firm Transmission Costs:** This captures the cost of transmission from White Creek Wind to Rock Creek Substation and market purchases during periods where the District's transmission needs are greater than its long-term firm contracted quantity (i.e. during spring runoff months). The cost is forecasted to be $58,482 in CY2023.
- **Irrigation Mitigation Credit:** This credit is received each year from May through September. It is computed based on the energy values in Ex. D of the BPA Contract and a rate of $10.90 per MWh resulting in $3,403,407 in CY2023. **Table 11** displays the monthly credit that the District receives.

May	June	July	August	September
($578,958)	($820,152)	($970,139)	($684,988)	($349,170)

TABLE 11: IRRIGATION MITIGATION CREDIT AMOUNTS

- **Net Cost of Conservation:**

Year	BPA EEI Allocation	Cost of Conservation	Net Cost of Conservation
2023	$ (1,763,524)	$ 2,136,976	$ 373,452
2024	$ (2,196,000)	$ 2,572,274	$ 376,274
2025	$ (1,692,000)	$ 2,699,443	$ 1,007,443
2026	$ (2,196,000)	$ 2,830,426	$ 634,426
2027	$ (1,692,000)	$ 2,965,339	$ 1,273,339

TABLE 12: ANNUAL CONSERVATION COST (CREDIT), NET

- **BPA Prepay Credit:** The District entered into an agreement with BPA to prepay for the future delivery of power consistent with the existing Slice/Block Power Sales Agreement, except that payment provisions would be revised to reflect the prepayment. The District made a lump-sum up-front payment of $6.8 million to receive a total of $9.3 million in credits through September 2028. The variance between the total paid and the credits received results in a credit of $13,348 per month for the remainder of the term.

OTHER COSTS

- **Benton PUD Internal Costs:** $1,159,681 in 2023, increasing to $1,305,231 by 2027.

- **The Energy Authority (TEA)** provides power, fuel, and risk management services to the District. The fee that TEA charges the District for these services is broken into two components:

  - Ongoing services where the level of effort is reasonably predictable. Examples of the types of services include scheduling, tagging, trading, month-end settlement, and risk management reporting and RMC meeting attendance. A total fee of $1,468,858 is budgeted for Scheduling and Risk Management Services in 2023. With the product switch to Load Following in October 2023, the level of required Scheduling and Risk Management Services is expected to decrease. As such, $300,000 is currently budgeted for CY2024, escalating 3% annually thereafter.
  - An estimated charge for consulting services is $52,600 for CY2023. Consulting expenditures are for non-recurring work items, and/or work items where the level of effort is more difficult to predict. Consulting charges are billed at TEA's hourly billing rates multiplied by actual hours worked. The consulting charge also includes charges for third-party vendors such as attorneys and some consulting work that is contracted through TEA in support of the District's and possibly others' power and risk management requirements.

NON-BPA RESOURCE COSTS

- **Options and Capacity Product costs:** $2,518,750 is budgeted for option premiums in 2023. The amount decreases to $943,750 in 2024, the first complete year under the Load Following contract where capacity concerns will be under the responsibility of BPA. Additional purchases of call options in 2023 are anticipated to make up for the reduction in generation capacity.
- **White Creek Wind 1:** $1,097,815 in 2023. Costs escalate by approximately 1.4% annually.
- **LL&P Wind:** $612,674 in 2023. Costs escalate by 2% per year.
- **Nine Canyon Wind Phases 1 & 3:** $1,583,747 in 2023 including transmission.
- **Packwood:** $474,548 in 2023 and escalates about 3% per year.

FIVE YEAR BUDGET PROPOSAL

Historically, the District has used Monte Carlo analysis to set its annual power supply budget. Specifically, the stochastic model simulates the distribution of annual power cost by generating a thousand scenarios of the variable inputs including: Slice generation, load, power prices and natural gas prices. With the District switching its BPA product from Slice/Block to Load Following in October 2023, the existing stochastic model can only be utilized for the first 9 months of the year. For the remaining 3 months of 2023, and for future years, the District is making use of historical monthly peak loads to estimate power costs, since monthly peak load is the determining variable for the Load Following Product's cost. The District sets its 2023 budget at the 25th percentile net power cost (i.e., the probability of meeting budget is 75%), and the 50th percentile for forecasting years beyond 2023.

Table 13 is the summary power cost information associated with the District's budget for 2023-2027**.**

Section V: Monte Carlo Analysis explains the Stochastic Model in more detail, as well as providing further results related to budgeting.

Description	2023	2024	2025	2026	2027
Bonneville Power Administration Power					
Composite - Block	$ 26,607,044				
Composite - Slice	$ 24,603,071				
Non-Slice	$ (4,392,881)				
Slice True-up/CRAC/Power RDC	$ (6,104,878)	$ -	$ -	$ -	$ -
Composite Charge (% of System) - LF	$ 17,591,588	$ 70,366,353	$ 70,894,100	$ 72,477,343	$ 73,020,923
Non-Slice Charge - LF	$ (2,950,464)	$ (11,801,855)	$ (11,801,855)	$ (11,801,855)	$ (11,801,855)
Demand	$ 1,302,747	$ 4,623,909	$ 4,452,475	$ 4,417,589	$ 4,294,592
Load Shaping HLH	$ (334,158)				
Load Shaping LLH	$ 1,538,358				
Load Shaping HLH - LF	$ (2,318,155)	$ (199,095)	$ (127,465)	$ (138,774)	$ (87,642)
Load Shaping LLH - LF	$ (811,581)	$ 769,977	$ 774,219	$ 757,721	$ 771,239
Tier 2 Short Term	$ 1,314,646	$ 5,398,217	$ 5,945,456	$ 6,193,423	$ 6,469,496
Tier 2 Load Growth					
Resource related charges (RSS, GMS, TSS, etc.)	$ 1,644	$ 6,576	$ 6,576	$ 6,576	$ 6,576
Tier 2 or New Resource Remarketing					
Irrigation Rate Discount	$ (3,403,407)	$ (3,625,097)	$ (3,625,097)	$ (3,625,097)	$ (3,625,097)
Low Density Discount					
Prepayment Credit	$ (161,256)	$ (161,256)	$ (161,256)	$ (161,256)	$ (161,256)
Transfer River System Credit	$ (191,088)	$ (191,088)	$ (191,088)	$ (191,088)	$ (191,088)
Load Shaping True-Up					
BPA Power Total	**$ 52,291,230.10**	**$ 65,186,640.14**	**$ 66,166,065.16**	**$ 67,934,581.37**	**$ 68,695,888.17**
Bonneville Power Administration Transmission					
Network Rate (kW/month)	$ 1,536,858	$ 7,674,743	$ 7,760,412	$ 7,960,840	$ 8,033,419
SCD NT (Sched, Sys Control & Dispatch)	$ 294,356	$ 1,469,953	$ 1,486,362	$ 1,524,750	$ 1,538,651
Long Term PTP (kW/month)	$ 6,278,880	$ 19,776	$ 19,924	$ 20,369	$ 20,522
SCD PTP (Sched, Sys Control & Dispatch)	$ 1,203,960	$ 3,792	$ 3,820	$ 3,906	$ 3,935
Load Regulation/Reg Freq Response	$ 812,679	$ 817,083	$ 824,204	$ 845,015	$ 852,988
Spin Reserves	$ 624,267	$ 652,799	$ 655,326	$ 672,909	$ 675,227
Supp Reserves	$ 407,892	$ 426,535	$ 428,186	$ 439,674	$ 441,189
PEAK/CAISO/WECC Dues	$ 147,760	$ 148,560	$ 149,855	$ 153,639	$ 155,089
Short Term (ST) PTP	$ 58,482	$ -	$ -	$ -	$ -
Energy Imbalance	$ 192,000	$ 192,000	$ 192,000	$ 192,000	$ 192,000
KPUD Transfer of Power	$ 48,419	$ 48,369	$ 48,334	$ 48,314	$ 33,495
PTP Resales	$ (724,258)	$ -	$ -	$ -	$ -
GTA Use of Facilities	$ (35,796)	$ (35,796)	$ (35,796)	$ (35,796)	$ (35,796)
BPA Transmission Total	**$ 10,845,499.01**	**$ 11,417,814.30**	**$ 11,532,627.18**	**$ 11,825,618.68**	**$ 11,910,719.54**
Renewables/Existing Resources					
White Creek	$ 1,710,490	$ 1,738,336	$ 1,766,913	$ 1,794,683	$ 1,672,709
Nine Canyon	$ 1,753,295	$ 1,715,916	$ 1,715,916	$ 1,715,916	$ 1,715,916
Packwood	$ 474,548	$ 488,784	$ 503,448	$ 518,551	$ 534,108
Renewables Total	**$ 3,938,332.25**	**$ 3,943,036.44**	**$ 3,986,276.71**	**$ 4,029,150.41**	**$ 3,922,733.04**
Other Costs					
Internal Costs	$ 1,159,681	$ 1,194,471	$ 1,230,306	$ 1,267,215	$ 1,305,231
TEA Scheduling & Risk Management	$ 1,468,858	$ 300,000	$ 309,000	$ 318,270	$ 327,818
TEA Consulting	$ 52,600	$ 100,000	$ 100,000	$ 100,000	$ 100,000
Cost of Conservation	$ 2,136,976	$ 2,572,274	$ 2,699,443	$ 2,830,426	$ 2,965,339
Conservation Credit	$ (1,763,524)	$ (2,196,000)	$ (1,692,000)	$ (2,196,000)	$ (1,692,000)
Option Premium	$ 2,518,750	$ 943,750	$ 830,000	$ -	$ -
Renewable Energy Credits (RECs)	$ 1,213,530	$ 1,233,660	$ 1,298,534	$ 1,382,024	$ 1,382,024
Wregis Annual Dues	$ 1,030	$ 1,061	$ 1,093	$ 1,126	$ 1,159
Balancing MKT Purchase HLH	$ 3,242,945	$ -	$ -	$ -	$ -
Balancing MKT Sales HLH	$ (6,598,889)	$ -	$ -	$ -	$ -
Balancing MKT Purchase LLH	$ 1,167,444	$ -	$ -	$ -	$ -
Balancing MKT Sales LLH	$ (2,377,150)	$ -	$ -	$ -	$ -
Other Costs Total	**$ 2,222,249.62**	**$ 4,149,216.63**	**$ 4,776,374.83**	**$ 3,703,060.05**	**$ 4,389,571.14**
Hedging Costs					
Slice Forward Market Purchases HLH	$ 3,675,364	$ -	$ -	$ -	$ -
Slice Forward Market Sales HLH	$ -	$ -	$ -	$ -	$ -
Slice Forward Market Purchases LLH	$ 216,580	$ -	$ -	$ -	$ -
Slice Forward Market Sales LLH	$ (825,125)	$ -	$ -	$ -	$ -
Hedging Costs Total	**$ 3,066,819.00**	**$ -**	**$ -**	**$ -**	**$ -**
White Creek and Nine Canyon Revenues					
WC Net Revenues	$ (482,452)	$ (1,518,778)	$ (1,386,393)	$ (1,285,805)	$ (911,721)
9C Net Revenues	$ (445,646)	$ (1,333,577)	$ (1,212,805)	$ (1,134,747)	$ (1,094,399)
WC and 9C Revenues Total	**$ (928,098)**	**$ (2,852,355)**	**$ (2,599,198)**	**$ (2,420,552)**	**$ (2,006,120)**
Net Power Costs (NPC) Total	**$ 71,436,031.96**	**$ 81,844,352.47**	**$ 83,862,146.00**	**$ 85,071,858.13**	**$ 86,912,791.61**

TABLE 13: FIVE YEAR BUDGET PROPOSAL

2022 VS. 2023 BUDGET VARIANCE

The 2023 net power supply budget is significantly smaller compared to the 2022 budget, which is summarized in **Table 14**. The main driver of this difference is the RDC credit distribution in CY2023. **Table 15** shows the change in the cost per MWh from BPA.

	2022 Budget	2023 Budget	% Change
BPA Purchased Power	$58,310,045	$52,482,318	-10%
Other Purchased Power	$23,982,400	$7,830,276	-67%
Net Conservation	$252,810	$373,452	48%
Purchased Transmission and Ancillaries	$14,161,003	$22,394,594	58%
Gross Power Supply	$96,706,258	$83,080,640	-14%
Less: Sales for Resale	($16,571,131)	($11,644,608)	-30%
Net Power Supply	$80,135,127	$71,436,032	-11%

TABLE 14: POWER SUPPLY BUDGET VARIANCE SUMMARY

	2022 Budget	2023 Budget	% Change
BPA Power Cost	$58,310,045	$52,482,318	-10%
BPA Transmission Cost	$11,204,560	$11,569,757	3%
Tier 1 MWh from BPA	1,817,866	1,862,507	2%
BPA Power Cost per MWh	$32.08	$28.18	-12%
Transmission Cost per MWh	$6.16	$6.21	1%

TABLE 15: COST PER MWH FROM BPA

Table 16 on the next page compares the detailed 2023 power supply budget to the 2022 budget.

Benton PUD **Financial Model**	2022 Budget	2023 Budget	$ Change	% Change
I. FIXED COSTS				
BPA COSTS				
Tier 1				
Composite	$68,351,137	$ 68,801,703	$450,566	0.7%
Non-Slice	($5,868,894)	$ (7,343,345)	($1,474,451)	25.1%
Slice True-up/CRAC/ Power RDC	$0	$ (6,104,878)	($6,104,878)	NA
Load Shaping	($607,535)	$ (1,925,536)	($1,318,001)	216.9%
Demand	$0	$ 1,302,747	$1,302,747	NA
Other BPA				
REP Refund	$0	$0	$0	NO CHANGE
BPA Power Prepay Credit	($161,256)	($161,256)	$0	NO CHANGE
Transfer River System Credit	$0	$ (191,088)	($191,088)	NA
Irrigation Mitigation	($3,403,407)	$ (3,403,407)	$0	NO CHANGE
Conservation	($2,196,000)	$ (1,763,524)	$432,476	-19.7%
Tier 2 Short Term	$0	$ 1,314,646	$1,314,646	NA
Resource related charges (RSS, GMS, TSS, etc.)	$0	$ 1,644	$1,644	NA
Transmission				
Long-Term PTP	$9,969,264	$ 7,482,840	($2,486,424)	-24.9%
Network Transmission	$0	$ 1,831,214	$1,831,214	NA
Short-Term PTP	$77,976	$ 58,482	($19,494)	-25.0%
Load Regulation	$816,844	$ 812,679	($4,164)	-0.5%
Operating Reserves -- Spinning	$658,518	$ 624,267	($34,251)	-5.2%
Operating Reserves -- Supplemental	$430,272	$ 407,892	($22,379)	-5.2%
Energy Imbalance UAI	$192,000	$ 192,000	$0	NO CHANGE
GTA Delivery Charge	$12,687	$ 12,623	($64)	-0.5%
PEAK/CAISO/WECC Dues	$147,000	$ 147,760	$759	0.5%
PTP Resales	($1,100,000)	$ (724,258)	$375,742	-34.2%
NON BPA RESOURCE COSTS				
Frederickson	$5,381,955	$0	($5,381,955)	NA
White Creek	$1,695,839	$ 1,710,490	$14,650	0.9%
Nine Canyon	$2,002,584	$ 1,753,295	($249,289)	-12.4%
Packwood	$464,744	$ 474,548	$9,805	2.1%
OTHER POWER COSTS				
Internal Costs and WECC fees	$1,027,433	$ 1,160,711	$133,278	13.0%
TEA Scheduling & Risk Management	$1,744,810	$ 1,468,858	($275,952)	-15.8%
TEA Consulting	$184,200	$ 52,600	($131,600)	-71.4%
Cost of Conservation	$2,448,810	$ 2,136,976	($311,834)	-12.7%
Option Premium	$193,750	$ 2,518,750	$2,325,000	1200.0%
REC PPAs	$1,195,390	$ 1,213,530	$18,140	1.5%
II. VARIABLE COSTS				
RESOURCE VARIABLE COSTS				
Frederickson				
Volumetric Charges	$1,394,151	$0	($1,394,151)	NA
Spot Gas	$3,481,724	$0	($3,481,724)	NA
Forward Gas Purchases	$2,736,000	$0	($2,736,000)	NA
Forward Gas Sales	$0	$0	$0	NA
Forward Power Purchases	$0	$0	$0	NA
Forward Power Sales	($5,086,769)	$0	$5,086,769	NA
Spot Power HLH	($3,104,184)	$0	$3,104,184	NA
Spot Power LLH	($2,185,395)	$0	$2,185,395	NA
BALANCING MARKET				
HLH Sales	($3,831,898)	$ (6,598,889)	($2,766,991)	72.2%
HLH Purchases	$1,354,890	$ 3,242,945	$1,888,055	139.4%
LLH Sales	($1,718,371)	$ (2,377,150)	($658,779)	38.3%
LLH Purchases	$712,861	$ 1,167,444	$454,583	63.8%
REC Sales	$0	$0	$0	NO CHANGE
FORWARD MARKET				
Sales HLH	($355,720)	$ -	$355,720	-100.0%
Sales LLH	($288,794)	$ (825,125)	($536,331)	185.7%
Purchases HLH	$3,271,884	$ 3,675,364	$403,480	12.3%
Purchases LLH	$96,628	$ 216,580	$119,952	124.1%
Option Value HLH	$0	$0	$0	NO CHANGE
Option Value LLH	$0	$0	$0	NO CHANGE
WHITE CREEK AND NINE CANYON REVENUES				
WC Net Revenues	$0	($482,452)	$0	NA
9C Net Revenues	$0	($445,646)	$0	NA
NET POWER COST	$ 80,135,127	$ 71,436,032	($8,699,095)	-10.9%

TABLE 16: 2023 AND 2022 DETAILED POWER SUPPLY COST COMPARISON

2023 PURCHASED MWHS BY MONTH

Purchased MWhs			January	February	March	April	May	June	July	August	September
	BPA										
		Slice HLH	54,873	55,028	55,072	47,005	48,925	53,020	46,816	46,006	40,995
		Slice LLH	39,562	34,821	32,294	30,641	31,374	31,978	33,119	26,117	26,121
		Block HLH	41,617	33,175	33,244	34,208	43,282	52,348	59,115	55,162	35,185
		Block LLH	35,791	24,881	23,932	27,366	34,126	38,254	50,839	39,839	28,148
	Total BPA Purchases		**171,843**	**147,905**	**144,543**	**139,221**	**157,706**	**175,600**	**189,889**	**167,124**	**130,450**
	Other Power										
		Frederickson HLH	-	-	-	-	-	-	-	-	-
		Frederickson LLH	-	-	-	-	-	-	-	-	-
		White Creek Wind HLH	1,200	1,152	1,296	1,200	1,248	1,248	1,200	1,296	1,200
		White Creek Wind LLH	1,032	864	933	960	984	912	1,032	936	960
		Nine Canyon Wind HLH	1,134	1,017	1,329	1,082	1,132	1,097	984	1,025	942
		Nine Canyon Wind LLH	975	763	956	865	893	801	846	740	754
		Packwood HLH	575	473	537	579	1,008	1,076	872	469	551
		Packwood LLH	495	355	386	463	795	787	750	339	441
		Balancing Market HLH	-	-	-	-	-	10,200	13,782	5,683	-
		Balancing Market LLH	-	-	-	-	-	2,406	9,575	5,671	-
		"Churn" Purchases HLH	1,600	1,613	1,469	4,600	6,032	5,907	4,040	3,629	4,640
		"Churn" Purchases LLH	1,376	1,210	1,057	3,680	4,756	4,317	3,474	2,621	3,712
		Swaps HLH - Slice	-	-	-	8,000	8,320	8,320	14,000	15,120	14,000
		Swaps LLH - Slice	-	-	-	3,200	3,280	3,040	-	-	-
		Swaps HLH - Thermal	-	-	-	-	-	-	-	-	-
		Swaps LLH - Thermal	-	-	-	-	-	-	-	-	-
		Options HLH (delta volume)	-	-	-	-	-	-	-	-	-
		Options LLH (delta volume)	-	-	-	-	-	-	-	-	-
	Total Other Power Purchases		**8,386**	**7,446**	**7,963**	**24,629**	**28,448**	**40,110**	**50,554**	**37,528**	**27,200**
TOTAL PURCHASES			**180,230**	**155,351**	**152,506**	**163,850**	**186,154**	**215,711**	**240,444**	**204,652**	**157,650**
Less											
	Sales for Resale										
		Balancing Market HLH	14,029	10,730	12,875	15,291	7,856	-	-	-	11,163
		Balancing Market LLH	8,253	3,645	4,346	14,571	2,884	-	-	-	4,326
		"Churn" Sales HLH	1,600	1,613	1,469	4,600	6,032	5,907	4,040	3,629	4,640
		"Churn" Sales LLH	1,376	1,210	1,057	3,680	4,756	4,317	3,474	2,621	3,712
		Swaps HLH - Slice	-	-	-	-	-	-	-	-	-
		Swaps LLH - Slice	5,160	4,320	4,665	-	-	-	-	-	-
		Swaps HLH - Thermal	-	-	-	-	-	-	-	-	-
		Swaps LLH - Thermal	-	-	-	-	-	-	-	-	-
		Options HLH (delta volume)	-	-	-	-	-	-	-	-	-
		Options LLH (delta volume)	-	-	-	-	-	-	-	-	-
	Total Sales for Resale		**30,418**	**21,518**	**24,412**	**38,143**	**21,528**	**10,224**	**7,514**	**6,250**	**23,841**
	Losses/Imbalance										
		Losses HLH	1,428	1,360	1,414	1,137	1,031	1,304	1,152	1,127	852
		Losses LLH	1,103	890	867	881	669	796	826	650	648
	Total Losses		**2,531**	**2,251**	**2,281**	**2,018**	**1,700**	**2,100**	**1,978**	**1,777**	**1,500**
TOTAL SALES/LOSSES			**32,949**	**23,769**	**26,693**	**40,160**	**23,228**	**12,324**	**9,492**	**8,027**	**25,342**
NET PURCHASES			**147,280**	**131,582**	**125,813**	**123,689**	**162,926**	**203,386**	**230,952**	**196,625**	**132,308**

WA $/MWh Secondary Sales		January	February	March	April	May	June	July	August	September
	ATC	$ 106.52	$ 98.21	$ 67.80	$ 48.81	$ 41.33	$ 50.06	$ 101.57	$ 117.70	$ 105.39

TABLE 17: 2023 PURCHASED MWHS BY MONTH

SECTION V: MONTE CARLO ANALYSIS

STOCHASTIC MODEL OVERVIEW/ASSUMPTIONS

The District faces a number of unknown variables that have a significant impact on its bottom line. Some variables, such as customer demand for energy, can be reasonably forecasted based on historical trends. Other variables (such as energy and natural gas prices, as well as hydro generation) cannot be accurately forecasted. This is fundamental to the concept of risk management; if it were possible to consistently forecast prices and the weather, there would be little to no risk for the District to manage.

Uncertainty about these key variables translates into uncertainty about the District's financial well-being. The District aims to manage its power supply portfolio so that the cost of supplying power (net power cost) is as low as possible. However, variability in supply, demand and price can result in dramatic changes in net power cost and net margins from year to year. Extreme conditions could threaten the financial viability of the PUD. The District, therefore, sets a conservative budget, maintains financial reserves and actively hedges its portfolio to guard against negative outcomes.

The purpose of the Stochastic Model is to define the distribution of possible outcomes. Specifically, the model generates the distribution of annual power cost by simulating thousands of scenarios of Slice generation, load, and power and gas prices. Once this has been accomplished, the modeled results can be used in a variety of ways. For example, the results can be used to quantify the likelihood of meeting budget at a given time, or to identify the variables that the District faces the greatest exposure to and perform sensitivity analysis. Furthermore, by highlighting possible unforeseen risks, the District is able to identify and test hedging strategies using the Stochastic Model. After hedges have been put in place their effectiveness can be tracked, by comparing the current portfolio's net power cost distribution with an unhedged portfolio's net power cost distribution.

Once the product switch to Load Following is made in October 2023, the variability of potential net power costs will be reduced, as the primary remaining variable will be loads. As such, the following contains stochastics for only the remainder of the Slice/Block contract through September 2023, and a point forecast for October through December 2023.

STOCHASTIC MODEL RESULTS – NET POWER COST: 2023

Percentile	2023
5%	$81,926,497
10%	$78,028,540
15%	$75,090,282
20%	$73,345,959
25%	$71,436,032
30%	$69,785,323
35%	$67,974,808
40%	$66,587,325
45%	$65,311,335
50%	$63,875,632
55%	$62,481,523
60%	$61,421,547
65%	$60,197,426
70%	$59,129,536
75%	$57,126,619
80%	$55,310,084
85%	$53,591,781
90%	$51,683,499
95%	$48,229,539

TABLE 18: 2023 ANNUAL NET POWER COST PERCENTILES

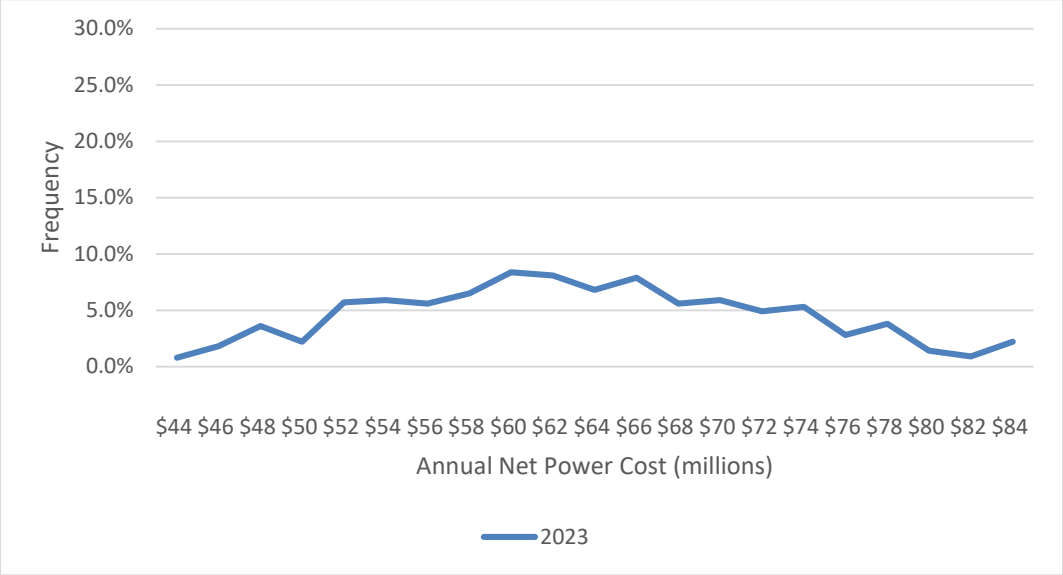

FIGURE 11: 2023 NET POWER COST DISTRIBUTION

STOCHASTIC OUTPUTS

The District is exposed to a number of unknown variables that ultimately have a significant impact on its bottom line. The Stochastic Model generates the range of outcomes, thereby making it possible to drill down on poor financial outcomes in order to determine what scenarios are most detrimental to the District. This section examines the stochastic outputs from the Stochastic Model that were used in the budgeting and financial reserves sections above. **Figure 12** shows the various components of the Stochastic Model and how each flows through to produce the financial metrics important to the District.

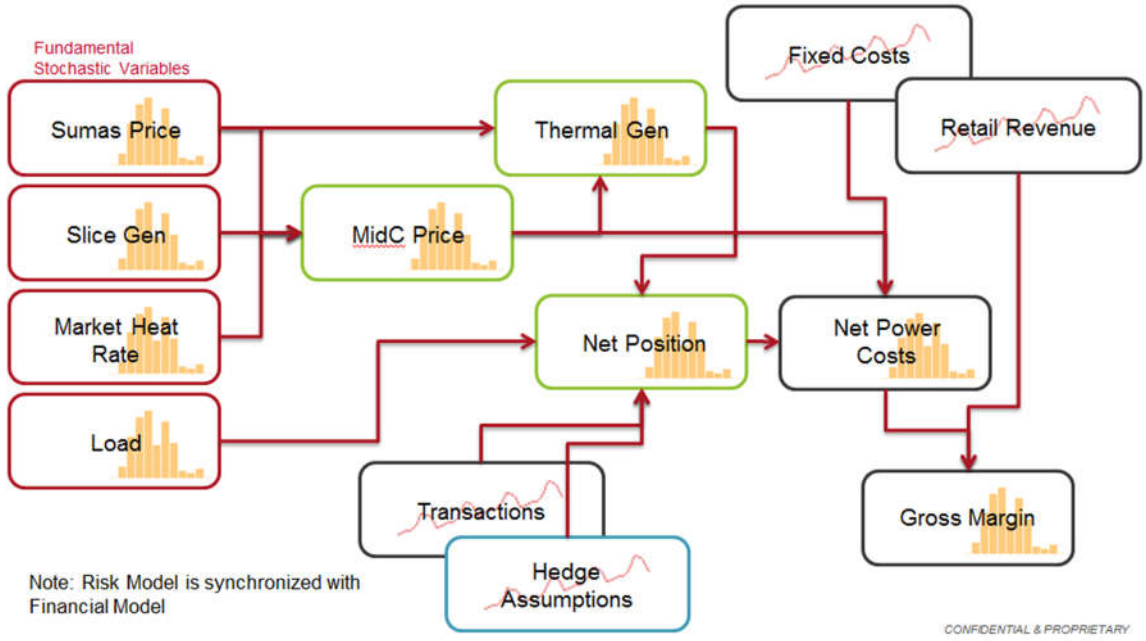

FIGURE 12: RISK MODEL COMPONENTS FLOW-CHART

LOADS

The Load Model is based on the District's load forecast. Monthly load volatility is derived by analyzing historical loads and is used to parameterize the model. The Load Model also accounts for interactions between load and other variables in the Stochastic Model. For example, if there is found to be a correlation between price and the District's load, the model will be parameterized to capture that relationship. The load scenarios generated by the model are used in conjunction with the Slice generation scenarios to arrive at the District's net position in each iteration. **Figure 13** shows the 10th and 90th percentile (i.e., 90% and 10% likelihood of greater or lesser loads) HLH load outputs relative to the HLH load forecast used to develop the 2023 budget with transmission losses included. **Figure 14** shows the 10th and 90th percentile LLH load outputs relative to the LLH load forecast used to develop the 2023 budget also with transmission losses included.

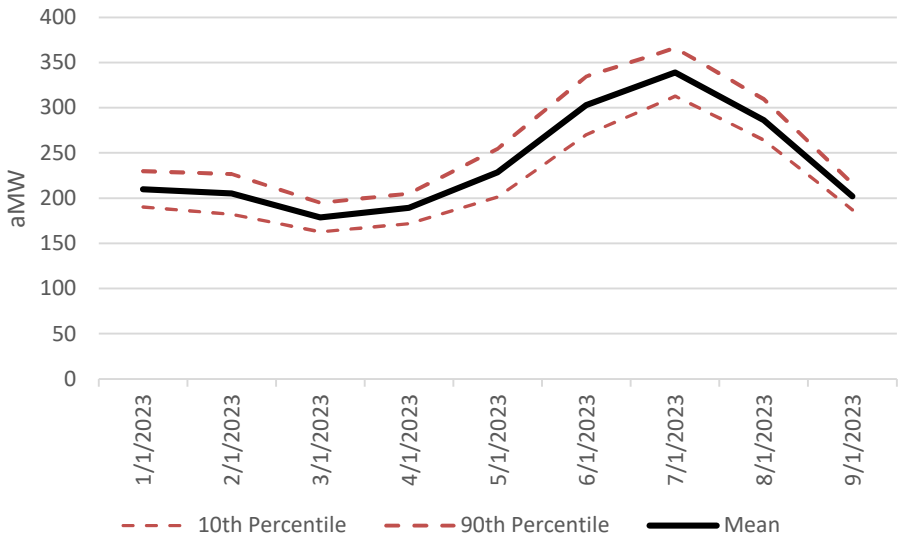

FIGURE 13: STOCHASTIC MODEL OUTPUT: 2023 HLH LOADS

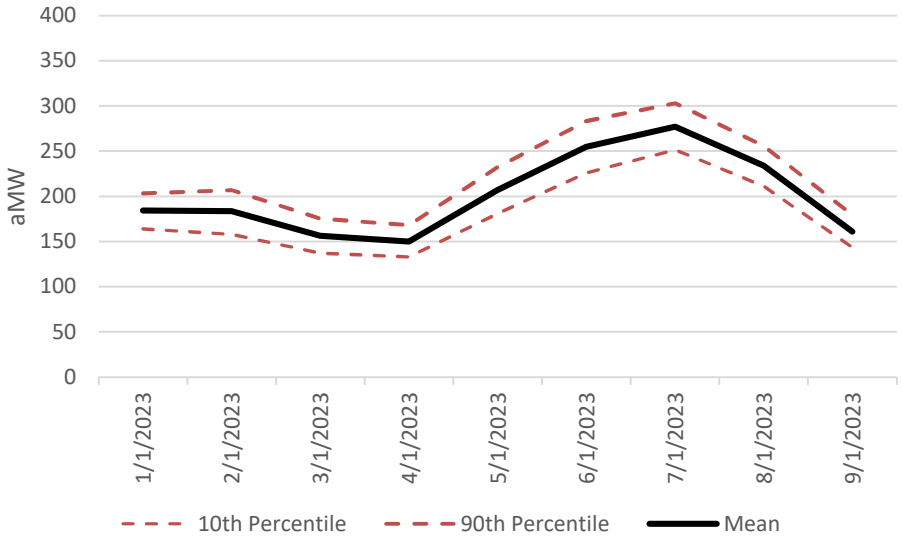

FIGURE 14: STOCHASTIC MODEL OUTPUT: 2023 LLH LOADS

SLICE

One of the major components of the Stochastic Model is the Slice Model. Each run of the Model generates a new Slice generation scenario. Slice scenarios are parameterized based on 38 years of historical Slice generation to ensure the modeled outputs behave realistically. The Slice Model breaks down generation into five primary components:

1. Variable hydro generation:
    a. Large federal projects (4,000-16,000 MW)
    b. Smaller hydro independents (150-900 MW)
2. CGS (1,100 MW)
3. Miscellaneous generation (60-100 MW)
4. System obligations (0-1,000 MW)
5. HLH/LLH allocations based on observed historical shaping capabilities

Stochastic model slice outputs are shown in **Figure 22** below, along with the District's budget Slice assumption.

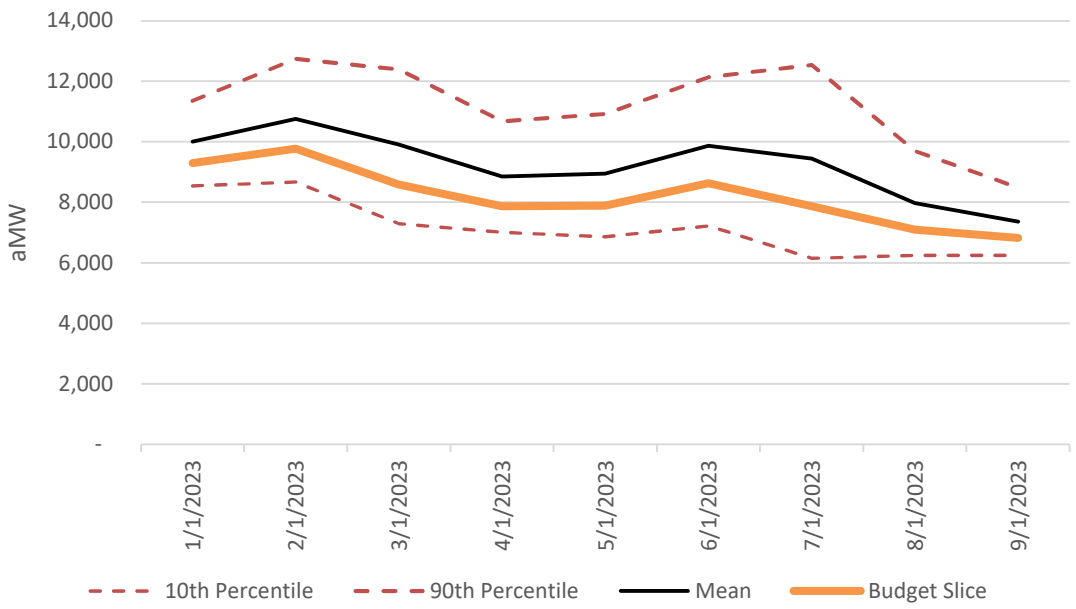

FIGURE 15: STOCHASTIC MODEL OUTPUT: 2023 SLICE GENERATION

GAS PRICES

Natural gas plants are the marginal source of generation in the Northwest; therefore, gas prices are a key driver of power price in the region. The Gas Price Model results in a distribution around forward prices based on historical volatility. Gas prices from the model are used with heat rates to arrive at simulated power prices – this process is expanded upon in the next section. **Figure 16** shows the average Sumas gas price distribution from the Stochastic Model relative to the gas price assumed in the 2023 budget.

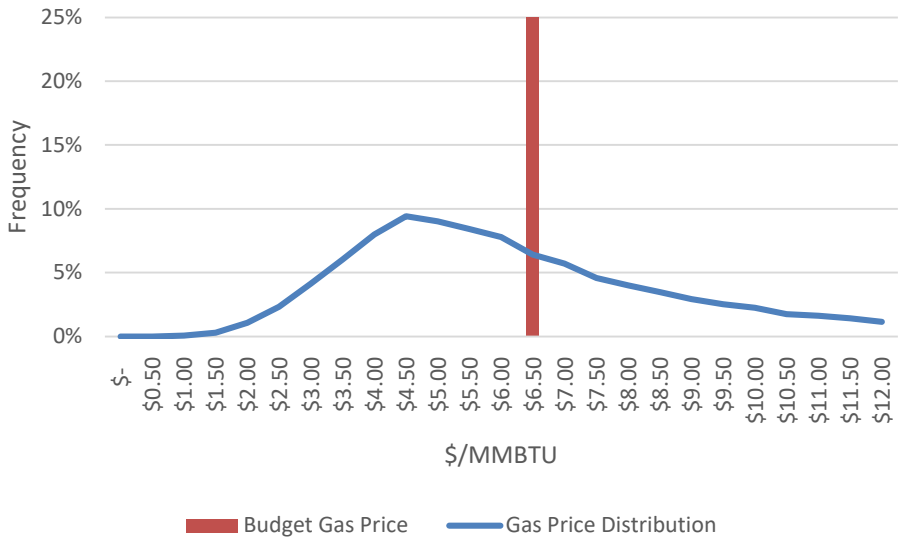

FIGURE 16: STOCHASTIC MODEL OUTPUT: 2023 SUMAS GAS PRICE DISTRIBUTION

PRICE

Power prices are a function of gas price and market heat rate in the Stochastic Model. The Price Model has been parameterized so that prices behave realistically relative to gas price and Slice generation outputs in each iteration. Simulated power prices of each iteration are used to calculate the cash flows from buying and selling, deficit and surplus power. **Figure 17** and **Figure 18** show the average HLH and LLH power price distribution from the stochastic model relative to the 2023 HLH and LLH budget price assumptions.

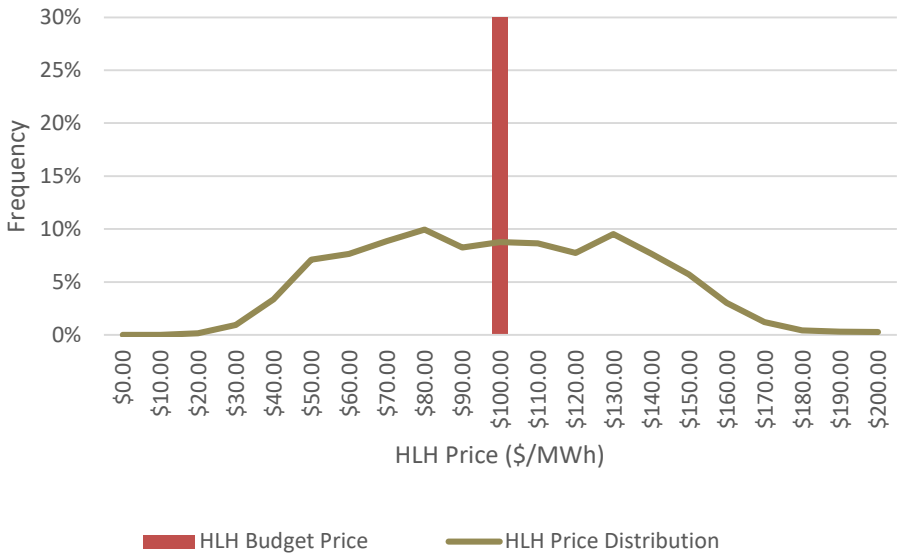

FIGURE 17: STOCHASTIC MODEL OUTPUT: 2023 HLH POWER PRICE DISTRIBUTION

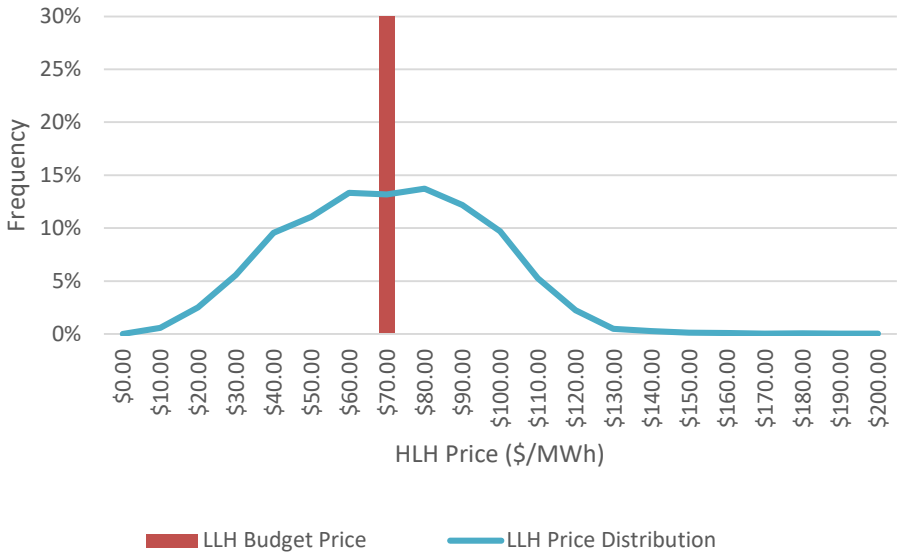

FIGURE 18: STOCHASTIC MODEL OUTPUT: 2023 LLH POWER PRICE DISTRIBUTION