2022 Budget

Including:

- Comparative Operating Statement
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BENTON P.U.D

RP3 RELIABLE PUBLIC POWER PROVIDER
American Public Power Association

December 14, 2021

Overview

Tab 1

To: Benton PUD Commissioners

From: Rick Dunn, General Manager

Date: December 14, 2021

Re: 2022 Budget

Benton PUD's 2022 preliminary budget was presented to the Commission at a public hearing on Tuesday, November 9, 2021. The preliminary budget is a first draft of the District's forecasted revenues and proposed expenditures for the coming year. Since then, staff discussed updates to liability and property insurance premium estimates received from PURMS (the risk and insurance pool the District is a member of) with the Commission on November 23, 2021. The updated estimates result in an additional $101,400 in liability and property premiums from what was included in the 2022 preliminary budget. The main driver for the premium increase is related to wildfire and cyber security risk facing the utility industry. This change has been incorporated into the 2022 budget based on concurrence received from the Commission. The proposed 2022 budget supports our strategic goals and highest priorities. To provide a point of reference, the table below compares the 2022 budget to the original 2021 budget.

Dollars in thousands	2022 Budget	2021 Original Budget	Increase/ (Decrease)	% Change
Revenues (excluding Secondary Market Sales)	**$141,403**	**$137,671**	**$3,732**	**2.7%**
Expenses (including Secondary Market Sales)				
Purchased Power	86,840	89,895	(3,055)	(3.4%)
Purchased Transmission & Ancillary Services	15,261	14,689	572	3.9%
Net Conservation	253	325	(72)	(22.2%)
Less: Secondary Market Sales	22,218	23,428	(1,210)	(5.2%)
Net Power Expenses	**$80,136**	**$81,481**	**($1,345)**	**(1.7%)**
Transmission Operation & Maintenance	172	164	8	4.9%
Distribution Operation & Maintenance	12,530	12,344	186	1.5%
Broadband Expense	1,206	1,166	40	3.4%
Customer Accounting	4,752	4,706	46	1.0%
Administrative & General	9,120	8,412	708	8.4%
Subtotal before Taxes & Depreciation	**$27,780**	**$26,792**	**$988**	**3.7%**
Taxes	14,651	14,231	420	3.0%
Depreciation/Amortization	10,538	10,172	366	3.6%
Non-Power Operating Expenses	**$52,969**	**$51,195**	**$1,774**	**3.5%**
Gross Capital	26,450	21,269	5,181	24.4%
Less: Capital Contributions	2,600	2,452	148	6.0%
Net Capital Additions	**$23,850**	**$18,817**	**$5,033**	**26.7%**
Debt Service (including BABs Subsidy)	**$5,248**	**$5,228**	**$20**	**0.4%**

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. As we look forward to 2022, the need to exercise great care in developing the budget has been more important than ever in light of the uncertainties of the ongoing global pandemic.

Fortunately, staff has been able to develop a 2022 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 2021 budget, the 2022 budget includes a forecasted increase in retail revenues due to business-customer loads returning to pre-pandemic levels; a modest increase in non-power operating expenses; a decrease in net power expenses; 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 27, 2021 with a forecasted annual retail load growth of 0.6% over the next five years.

Most of the $3.73 million increase in 2022 budgeted revenues compared to 2021 is directly associated with the general service rate class. Staff adjusted the 2021 original budget revenues based on electricity consumption analytics which reflected a 15% reduction in general service loads to start the year and assumed a three-year linear recovery period. General service customers normally account for about $37 million (or just under 30%) of the District's total retail electric revenues so a 15% reduction was significant. However, general service loads returned to pre-pandemic levels by March of 2021, much quicker than staff estimated. 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)

Net Power Expenses typically represent nearly 60% of the District's annual costs, however for 2022 the percentage is slightly lower due to a larger than typical capital budget. These expenses include purchased power (net of revenue from selling surplus electricity into the wholesale power market), and transmission services.

The 2022 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 be achieved.

Overall, 2022 net power expenses are expected to be $1.3 million less than the 2021 original budget which represents a 1.7% reduction. The main driver for the decrease is lower BPA wholesale power supply rates announced for the next two-year period resulting in a net BPA cost decrease of $1.1 million.

Non-Power Operating Expenses

Non-power operating expenses are expected to increase $1.8 million or 3.5% over the 2021 original budget, of which $0.8 million is related to taxes and depreciation. Taxes are expected to increase 3.0% as a function of higher expected revenues and depreciation is expected to increase 3.6% as a result of new capital additions in recent years. That leaves an expected increase of $1.0 million (or 3.7%) 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 capacity to meet customer growth and support economic development. The District's 2022 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 2022 capital budget is higher than typical as it includes final construction cost estimates for a major transmission system improvement project carried over into 2022 along with a small cell wireless project in our Broadband business. These projects were originally budgeted in 2021 but have been moved to 2022 due to delays in engineering design and permitting along with ongoing supply chain difficulties being experienced worldwide. The 2022 capital budget also includes nearly $1.0 million for physical security projects to help ensure employee and customer safety through modernization of District facilities.

The 2022 total gross capital budget has been set at $26.4 million including the following six categories: $14.8 million (56.0%) for substation and distribution projects; $6.2 million (23.5%) for transmission system additions; $1.8 million (7.1%) for broadband projects; $1.5 million (5.7%) for general plant; $1.0 million (4.0%) for information technology projects; and $1.0 million (3.7%) for security projects. A credit of $2.6 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 2022 Net Capital Additions of $23.8 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 and levelize debt service payments in 2021 and 2022.

Conclusion

Overall, staff believes the 2022 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

2022 BUDGET - KEY ASSUMPTIONS

REVENUES

- The 2022 Budget reflects no revenue increase.
- Gross retail energy sales of $136.7 million are based on 201.1 aMW of retail load.
- Sales for resale are estimated at $22.2 million.
- 797 new customer connections are included in the 2022 load forecast (see Tab 8) and of these new customer connections, 725 are residential.

POWER & TRANSMISSION COSTS *(see Tab 10, 2022 Power Supply Plan, Section 4, for more details)*

- **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 2022.
  - Conservation program costs for CY 2022 are $2.4 million, offset by a $2.2 million reimbursement from BPA.
  - No Cost Recovery Adjustment Clauses (CRACs) are assumed for CY 2022.
  - Court ordered additional spill costs are included in BPA's rates for 2022.
  - No slice true-up credit is assumed for CY 2022.
  - Power cost assumptions include the Frederickson contract cost through the contract period.
  - 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.

INTERNAL DISTRICT COSTS

- Employee benefits and payroll taxes of $6.6 million are based on total District labor of $16.4 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).

2022 BUDGET - KEY ASSUMPTIONS

(CONTINUED)

FINANCING

- No debt issuance is assumed in the 2022 Budget.

CAPITAL

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

- Includes $6.2 million for new transmission line planning and design.
  - New transmission line from Phillips to Spaw
  - Spaw Phillips 115kV Breaker
  - Plymouth Transmission Tie Switch

- Includes $14.8 million for distribution system upgrades and additions.
  - $5.3 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
  - $2.2 million for repair and replacement of aging underground cable

- Includes $1.0 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 $1.5 million for equipment replacements and facilities improvements/replacements.
  - Bucket Trucks for Kennewick and Prosser
  - Overhead Puller
  - Replace Asphalt Courtyard Parking Lot

Annual Budget Summary

Tab 3

Comparative Operating Statement
Public Utility District No. 1 of Benton County
2022 Budget

	2022 Budget	2021 Original Budget	Increase/ (Decrease)	% Change
OPERATING REVENUES				
Energy Sales - Retail	$136,768,696	$132,983,984	$3,784,712	2.8%
Energy Secondary Market Sales	21,118,273	22,527,727	(1,409,454)	(6.3%)
Transmission of Power for Others	1,100,000	900,000	200,000	22.2%
Broadband Revenue	3,082,142	2,921,407	160,735	5.5%
Other Revenue	1,409,982	1,415,720	(5,738)	(0.4%)
TOTAL OPERATING REVENUES	**163,479,093**	**160,748,838**	**2,730,255**	**1.7%**
OPERATING EXPENSES				
Purchased Power	86,839,587	89,894,685	(3,055,098)	(3.4%)
Purchased Transmission and Ancillary Services	15,261,004	14,689,033	571,971	3.9%
Conservation	252,810	325,298	(72,488)	(22.3%)
Total Power Supply	102,353,401	104,909,017	(2,555,616)	(2.4%)
Transmission Operation & Maintenance	171,866	164,242	7,624	4.6%
Distribution Operation & Maintenance	12,530,301	12,343,707	186,594	1.5%
Broadband Expense	1,205,854	1,166,295	39,559	3.4%
Customer Accounting, Collection and Information	4,751,609	4,705,890	45,719	1.0%
Administrative & General	9,119,546	8,412,372	707,174	8.4%
Subtotal before Taxes & Depreciation	27,779,175	26,792,505	986,670	3.7%
Taxes	14,651,000	14,231,000	420,000	3.0%
Depreciation & Amortization	10,538,140	10,172,186	365,954	3.6%
Total Other Operating Expenses	52,968,315	51,195,691	1,772,624	3.5%
TOTAL OPERATING EXPENSES	**155,321,716**	**156,104,708**	**(782,992)**	**(0.5%)**
OPERATING INCOME (LOSS)	**8,157,377**	**4,644,130**	**3,513,247**	**75.6%**
NONOPERATING REVENUES & EXPENSES				
Interest Income	100,000	350,000	(250,000)	(71.4%)
Other Income	412,198	376,070	36,128	9.6%
Interest Expense	(2,826,486)	(2,907,621)	81,135	(2.8%)
Debt Discount & Expense Amortization	402,824	418,421	(15,597)	(3.7%)
TOTAL NONOPERATING REVENUES & EXPENSES	**(1,911,464)**	**(1,763,130)**	**(148,334)**	**8.4%**
INCOME (LOSS) BEFORE CONTRIBUTIONS	**6,245,913**	**2,881,000**	**3,364,913**	**116.8%**
CAPITAL CONTRIBUTIONS	**2,599,537**	**2,451,526**	**148,011**	**6.0%**
CHANGE IN NET POSITION	**$8,845,450**	**$5,332,526**	**$3,512,924**	**65.9%**
NET POWER	**$80,135,128**	**$81,481,290**	**($1,346,162)**	**(1.7%)**
CHANGE IN NET POSITION	**$8,845,450**	**$5,332,526**	**$3,512,924**	**65.9%**
Less: Gross Capital in Excess of Depreciation	(15,911,428)	(11,096,315)	(4,815,113)	43.4%
Less: Principal Payment on Outstanding Debt	(3,195,000)	(3,115,000)	(80,000)	2.6%
Plus: Non-Cash Items (Prepaid Expense Amortizations, etc.)	614,312	598,715	15,597	2.6%
ESTIMATED ADDITION/(REDUCTION) TO CASH RESERVES	**($9,646,666)**	**($8,280,074)**	**($1,366,592)**	**16.5%**

Comparative Capital Budget
Public Utility District No. 1 of Benton County
2022 Budget

Capital Category	Project Group	2022 Budget	2021 Original Budget	Increase/ (Decrease)	% Change
Transmission	Transmission Projects	$6,223,927	$3,805,851	$2,418,076	63.5%
Distribution	Capacity & Reliability	5,842,945	4,087,891	1,755,054	42.9%
	Customer Growth	5,402,840	5,249,445	153,395	2.9%
	General Plant	630,000	200,000	430,000	215.0%
	Other	770,592	690,288	80,304	11.6%
	Repair & Replace	2,158,091	1,992,898	165,193	8.3%
Total Distribution		14,804,468	12,220,522	2,583,946	21.1%
Broadband	Broadband	1,868,731	1,827,034	41,697	2.3%
General Plant	General Plant	1,503,000	1,655,755	(152,755)	(9.2%)
Information Technology	Information Technology	1,057,802	1,145,103	(87,301)	(7.6%)
Security	Security	991,640	614,236	377,404	61.4%
Grand Total (Gross)		**26,449,568**	**21,268,501**	**4,803,663**	**22.6%**
Contributions in Aid	Broadband	(58,800)	(58,800)	-	0.0%
	Capacity & Reliability	-	(691,300)	691,300	N/A
	Customer Growth	(2,487,712)	(1,648,401)	(839,311)	50.9%
	Other	(53,025)	(53,025)	-	0.0%
Total Contributions in Aid		(2,599,537)	(2,451,526)	(148,011)	6.0%
Net Capital		**$23,850,031**	**$18,816,975**	**$4,655,652**	**24.7%**

Comparative Budget by Activity Code
Public Utility District No. 1 of Benton County
2022 Budget

		2022 Budget	2021 Original Budget	Increase/ (Decrease)	% Change
Allocated Costs:					
88	Payroll Taxes	$1,241,105	$1,182,365	$58,740	5.0%
101	Employee Benefits	5,403,233	5,361,679	41,554	0.8%
	Allocated Cost Total	**6,644,338**	**6,544,044**	**100,294**	**1.5%**
Payroll:					
10	District Overtime Labor	876,918	771,322	105,596	13.7%
11	All Other District Labor	15,564,091	14,899,809	664,282	4.5%
	District Labor Total	**16,441,009**	**15,671,131**	**769,878**	**4.9%**
Power Cost:					
9	Purchased Power	98,691,958	101,166,751	(2,474,793)	(2.4%)
	Power Cost Total	**98,691,958**	**101,166,751**	**(2,474,793)**	**(2.4%)**
System Costs:					
12	Materials & Supplies	7,179,674	5,650,580	1,529,094	27.1%
13	Store Expense - Non Labor	25,000	25,000	-	0.0%
14	Small Tools & Materials	105,950	119,950	(14,000)	(11.7%)
15	Transportation Expense-Gas&Oil	225,000	225,000	-	0.0%
16	Transportation Exp-Repair&Main	192,000	192,000	-	0.0%
17	Operation & Maintenance Exp	758,922	434,922	324,000	74.5%
18	Misc Construction Expense	304,617	229,665	74,952	32.6%
19	Tree Trimming - Contract	866,000	825,000	41,000	5.0%
20	Off-the-Dock Labor	955,450	1,075,897	(120,447)	(11.2%)
21	Elec Construction Contracts	5,529,448	4,263,249	1,266,199	29.7%
23	Environmental	26,000	22,000	4,000	18.2%
	System Cost Total	**16,168,061**	**13,063,263**	**3,104,799**	**23.8%**
General Expenditures:					
25	Maintenance of Software	1,261,049	1,163,433	97,616	8.4%
26	Computer Hardware & Equip Exp	140,500	91,000	49,500	54.4%
27	Personal Computer Software	141,500	87,200	54,300	62.3%
28	Personal Computer O&M Costs	205,700	200,700	5,000	2.5%
29	Personal Computer Supplies&Exp	10,500	10,000	500	5.0%
30	Customer Service Expenses	515,046	452,364	62,682	13.9%
33	Office Supplies & Expenses	85,200	81,200	4,000	4.9%
34	Insurance	817,950	643,450	174,500	27.1%
37	Grounds Care	94,524	93,000	1,524	1.6%
38	Maint of Bldg & Improvements	310,900	308,000	2,900	0.9%
39	Maint of Equipment	39,400	40,400	(1,000)	(2.5%)
40	Rents	350,316	323,011	27,305	8.5%
41	Insurance Damages & Other Reim	10,000	10,000	-	0.0%
42	Business Expense & Travel	227,450	167,325	60,125	35.9%

Comparative Budget by Activity Code
Public Utility District No. 1 of Benton County
2022 Budget

	2022 Budget	2021 Original Budget	Increase/ (Decrease)	% Change
43 Training Expense & Travel	190,606	163,301	27,305	16.7%
44 Other General Expenses	1,143,569	1,073,094	70,475	6.6%
45 Subscriptions & Publications	24,606	23,991	615	2.6%
46 Treasurer Expenses	491,000	485,000	6,000	1.2%
General Expenditure Total	**6,059,816**	**5,416,469**	**643,346**	**11.9%**
Utilities:				
50 Telephone & Answering Services	273,500	266,500	7,000	2.6%
51 Water,Garbage,Irrigation&Other	79,000	79,000	-	0.0%
Utilities Total	**352,500**	**345,500**	**7,000**	**2.0%**
Outside Services:				
60 Audit Examination - State	113,500	87,000	26,500	30.5%
61 Professional Services	2,141,152	2,177,192	(36,040)	(1.7%)
Outside Services Total	**2,254,652**	**2,264,192**	**(9,540)**	**(0.4%)**
Dues and Assessments:				
70 Civic & Service Organizations	19,415	19,380	35	0.2%
72 Industry Assoc Assessments	617,552	544,856	72,696	13.3%
73 Other Assessments	-	35,000	(35,000)	n/a
Dues and Assessments Total	**636,967**	**599,236**	**37,731**	**6.3%**
Taxes:				
80 Public Utility & Excise Tax	5,477,000	5,327,000	150,000	2.8%
81 State Privilege Tax	2,797,000	2,720,000	77,000	2.8%
82 City Occupation Taxes	6,377,000	6,184,000	193,000	3.1%
Taxes Total	**14,651,000**	**14,231,000**	**420,000**	**3.0%**
Other Employee Costs:				
104 Other Employee Costs	243,074	216,694	26,380	12.2%
Other Employee Costs Total	**243,074**	**216,694**	**26,380**	**12.2%**
Energy Resources:				
111 Inspection Services	5,000	-	5,000	n/a
112 Residential Conservation Exp	481,000	621,000	(140,000)	(22.5%)
113 Commercial Conservation Exp	330,000	334,000	(4,000)	(1.2%)
114 Industrial Conservation Exp	480,000	486,000	(6,000)	(1.2%)
115 Agriculture Conservation Exp	170,000	104,000	66,000	63.5%
117 Customer Installed Measures	19,000	19,000	-	0.0%
118 Low Income Conservation	300,000	250,000	50,000	20.0%
Energy Resources Total	**1,785,000**	**1,814,000**	**(29,000)**	**(1.6%)**

Comparative Budget by Activity Code
Public Utility District No. 1 of Benton County
2022 Budget

		2022 Budget	2021 Original Budget	Increase/ (Decrease)	% Change
Public Information:					
119	Public Information Expenses	319,960	303,000	16,960	5.6%
	Public Information Total	**319,960**	**303,000**	**16,960**	**5.6%**
Purchased Electric Plant & Equip:					
120	Substation Xfrs & Regulators	345,000	-	345,000	n/a
121	Substation Equip & Materials	1,195,511	807,535	387,976	48.0%
122	Line Devices	379,600	303,236	76,364	25.2%
123	Transformers & Related Items	1,500,000	1,200,000	300,000	25.0%
124	Meters & Related Items	550,000	200,000	350,000	175.0%
125	Land & Land Rights - Electric	27,500	328,864	(301,364)	(91.6%)
127	SCADA Communications Equipment	38,059	80,252	(42,193)	(52.6%)
128	SCADA Substation Equipment	31,739	30,000	1,739	5.8%
	Purchased Electric Plant and Equip Total	**4,067,410**	**2,949,887**	**1,117,523**	**37.9%**
Purchased General Plant & Equip:					
131	Structures & Improvements	552,000	498,000	54,000	64.7%
132	Office Equipment	7,000	7,000	-	0.0%
133	Transportation Equipment	1,107,000	950,000	157,000	16.5%
134	Tools, Shop & Stores Equipment	18,100	247,100	(229,000)	64.7%
135	Laboratory & Test Equipment	159,000	118,755	40,245	33.9%
136	Communication Equipment	205,000	155,000	50,000	32.3%
137	Capitalized Computer Software	495,000	273,000	222,000	81.3%
138	Computer Equipment	720,000	805,000	(85,000)	(10.6%)
	Purchased General Plant & Equip Total	**3,263,100**	**3,053,855**	**209,245**	**6.9%**
Debt Service:					
150	Principal	3,195,000	3,115,000	80,000	2.6%
151	Interest	2,013,214	2,073,130	(59,916)	(2.9%)
	Debt Service Total	**5,208,214**	**5,188,130**	**20,084**	**0.4%**
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)	10,538,140	10,172,186	365,954	3.6%
	Transportation Equipment - Allocation	388,300	296,000	92,300	31.2%
	Depreciation Total	**10,926,440**	**10,468,186**	**458,254**	**4.4%**
	Grand Total	**$187,719,499**	**$183,301,338**	**$4,418,161**	**2.4%**

Comparative Broadband Budget
Public Utility District No. 1 of Benton County
2022 Budget

	2022 Budget [1]	2021 Original Budget	Increase/ (Decrease)	% Change
Revenue	$3,082,142	$2,921,407	$160,735	5.5%
Operating Expenses	(1,205,854)	(1,166,295)	(39,559)	3.4%
Net Income (Loss)	**1,876,288**	**1,755,112**	**121,176**	**6.9%**
Broadband Capital:				
Base Capital Expenditures	1,195,231	1,011,184	184,047	18.2%
Small Cell	673,500	815,850	(142,350)	(17.4%)
Capital Contributions	(58,800)	(58,800)	-	0.0%
Net Capital Expenditures	**1,809,931**	**1,768,234**	**41,697**	**2.4%**
Net Cash from / (to) Broadband	**$66,357**	**($13,122)**	**$79,479**	**N/A**

	Future 5 Years (2022-2026)[1]	Previous 5 Years (2017-2021)
Five Year Rolling Net Cash Test[2]	$3,941,587	$1,525,757

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
2022 Budget

	2022 Budget	2021 Original Budget	Increase/ (Decrease)	% Change
Retail Power Sales	$136,848,696	$133,063,984	$3,784,712	2.8%
Wholesale Power Sales	22,218,273	23,427,727	(1,209,454)	(5.2%)
Broadband Revenues	3,082,142	2,921,407	160,735	5.5%
Interest Income and Other	470,448	726,070	(255,622)	(35.2%)
Other Electric Revenue	1,371,734	1,335,720	36,014	2.7%
Joint Use Cost Share	700,000	700,000	-	0.0%
Capital Contributions:				
Electric Facilities	2,540,737	2,392,726	148,011	6.2%
Broadband Facilities	58,800	58,800	-	0.0%
Total Revenue	**$167,290,830**	**$164,626,434**	**$2,664,396**	**1.6%**

Comparative Revenues

Public Utility District No. 1 of Benton County

2022 Budget

	2022 Budget	2021 Original Budget	Increase/ (Decrease)	% Change
Finance and Customer Service				
Finance				
515 Interest Income	$100,000	$350,000	($250,000)	(71.4%)
151 BAB's Subsidy	370,448	376,070	(5,622)	(1.5%)
560 Insurance/Claims Reimbursements	141,750	100,000	41,750	41.8%
Total Finance	612,198	826,070	(213,872)	(25.9%)
Customer Service				
545 Other Electric Revenue	500,001	510,000	(9,999)	(2.0%)
Total Customer Service	500,001	510,000	(9,999)	(2.0%)
Total Finance and Customer Service	**1,112,199**	**1,336,070**	**(223,871)**	**(16.8%)**
Engineering				
523 Pole Contact Revenue				
Pole Contact Fees	450,000	440,000	10,000	2.3%
525 Capital Contributions				
Angus Franklin Transmission	21,775	21,775	-	0.0%
Joint Use Deficiency Correction CAIC	31,250	31,250	-	0.0%
Ridgeline Under Pass	-	691,300	(691,300)	n/a
Misc. Customer Fees (Primary, etc.)	2,487,712	1,648,401	839,311	50.9%
545 Other Electric Revenue	700,000	700,000	-	0.0%
Total Engineering	**3,690,737**	**3,532,726**	**158,011**	**4.5%**
Power Management				
505 Wholesale Power Sales Revenue				
Slice Power Sales for Resale	9,422,037	9,289,120	132,917	1.4%
Fredrickson Power Sales for Resale	11,696,236	12,616,837	(920,601)	(7.3%)
Fredrickson Gas Sales for Resale	-	621,770	(621,770)	n/a
510 Wholesale Transmission Sales Revenue	1,100,000	900,000	200,000	22.2%
Total Power Management	**22,218,273**	**23,427,727**	**(1,209,454)**	**(5.2%)**
Broadband				
550 Products and Services Revenue				
Ethernet Revenue	1,700,602	1,790,107	(89,505)	(5.0%)
TDM Revenue	36,000	36,000	-	0.0%
Wireless Revenue	15,000	42,300	(27,300)	(64.5%)
Internet Transport Revenue	88,000	54,000	34,000	63.0%
Access Internet Revenue	488,000	349,000	139,000	39.8%
USC Cran	99,540	-	99,540	n/a
Broadband Revenue-Other (Incl. Fiber Leases)	655,000	650,000	5,000	0.8%
525 Capital Contributions				
Advanced Wireless/Small Cell	58,800	58,800	-	0.0%
Total Broadband	**3,140,942**	**2,980,207**	**160,735**	**5.4%**
Operations				
Supt. of Transmission & Distribution				
550 Products and Services Revenue				
Pre-Notifier - Tree Trimming	53,830	52,120	1,710	3.3%
Total Supt. of Transmission & Distribution	53,830	52,120	1,710	3.3%
Supt. of Operations				
535 Microwave Site Rental	67,956	67,700	256	0.4%
Rattlesnake Site Rental	44,197	51,900	(7,703)	(14.8%)
545 Other Electric Revenue				
Windfarm Maintenance	114,000	114,000	-	0.0%
Total Supt. of Operations	226,153	233,600	(7,447)	(3.2%)

Comparative Revenues

Public Utility District No. 1 of Benton County

2022 Budget

	2022 Budget	2021 Original Budget	Increase/ (Decrease)	% Change
Total Operations	**279,983**	**285,720**	**(5,737)**	**(2.0%)**
Non-Departmental				
501 Retail Energy Sales Total	130,647,933	127,049,130	3,598,803	2.8%
503 Bad Debt Expense	(256,237)	(249,146)	(7,091)	2.8%
502 City Occupation Taxes Collected	6,377,000	6,184,000	193,000	3.1%
520 Temporary Service Revenue	80,000	80,000	-	0.0%
Total Non-Departmental	**136,848,696**	**133,063,984**	**3,784,712**	**2.8%**
Grand Total Revenue	**$167,290,830**	**$164,626,434**	**$2,664,396**	**1.6%**

Labor Staffing

Tab 5

Public Utility District No. 1 of Benton County
2022 Labor & Benefits Budget

District Labor	2022 Budget	2021 Original Budget	Increase (Decrease)	% Change
Regular Labor - Activity 11	$15,564,091	$14,899,809	$664,282	4.5%
Overtime Labor - Activity 10	876,918	771,322	105,596	13.7%
Total Labor	**$16,441,009**	**$15,671,131**	**$769,878**	**4.9%**
District Labor Taxes & Benefits				
Payroll Taxes - Activity 88	$1,241,105	$1,182,365	$58,740	5.0%
Employee Benefits - Activity 101	5,403,233	5,361,678	41,555	0.8%
Total Labor Taxes & Benefits	**$6,644,338**	**$6,544,043**	**$100,295**	**1.5%**

District Staffing	2022 Budget	2021 Original Budget	Increase (Decrease)	% Change
Full Time Equivalent Positions (FTEs)	155.50	155.00	0.50	0.3%

Public Utility District No. 1 of Benton County
2022 Staffing Plan

Full Time Equivalent Positions (FTEs)

Directorate	2022 Budget	2021 Original Budget	Increase/ (Decrease)
Executive / Human Resources / Communications & Government	11.25	10.00	1.25
Finance & Customer Service	35.25	36.25	(1.00)
Engineering	16.25	16.25	0.00
Power Management	10.00	11.00	(1.00)
Operations	65.50	63.50	2.00
IT	17.25	18.00	(0.75)
Authorized District Positions	**155.50**	**155.00**	**0.50**
Less: FTEs utilized by other local utilities - Vegetation Management	(0.50)	(0.50)	0.00
District Adjusted FTEs	**155.00**	**154.50**	**0.50**

Change in FTEs	**0.50**
Dept. 1 - General Manager	**1.00**
Add - Security Program Manager	1.00
Dept. 2 - Human Resources	**0.25**
Add - HR Intern	0.25
Dept. 18 - IT System Applications	**(0.75)**
Add - IT Intern	0.25
Remove - Applications Analyst II	(1.00)
Dept. 22 - Customer Engineering	**0.00**
Remove - Engineering Technician (LA)	(1.00)
Add - Department Assistant I	1.00
Dept. 31 - Operations	**1.00**
Add - Superintendent - Operations	1.00
Dept. 32 - Superintendent Transmission & Distribution	**1.00**
Add - Journeyman Lineman - Retirement Overlap	1.00
Dept. 44 - Customer Service	**(1.00)**
Remove - Customer Service Representative II	(1.00)
Dept. 45 - Energy Programs	**(1.00)**
Remove - Energy Efficiency Advisor (Retirement Overlap)	(1.00)

Public Utility District No. 1 of Benton County
2022 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	2022 Budget	2021 Original Budget	Increase/ (Decrease)	Notes
Labor charged to Expense	$10,072,215	$10,007,094	$65,121	
Labor charged to Capital	2,731,175	2,260,773	470,402	
Labor charged to Warehouse & Equipment Maintenance	569,829	534,068	35,761	
Total Productive Labor	$13,373,219	$12,801,935	$571,284	
Paid Leave - Includes Holidays and Personal Leave	$2,190,872	$2,097,874	$92,998	
Total Regular Labor	**$15,564,091**	**$14,899,809**	**$664,282**	
Benefits/Taxes				
Social Security	$1,002,710	$955,134	$47,576	
Medicare	238,395	227,231	11,164	
State Industrial	138,382	131,065	7,317	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	12,000	13,000	(1,000)	The District does not pay unemployment tax but instead reimburses the State for benefits paid to former employees.
PERS	1,632,836	1,762,752	(129,916)	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 9/1/2021, the employer rate for PERS was set at 10.25%, a decease of 2.72% from the previous rate (2020/2021). The 2022 projected rate is expected to stay at 10.25%.
Deferred Compensation	448,988	430,562	18,426	
VEBA Contribution	360,000	360,000	-	
Medical Insurance	2,315,442	2,196,543	118,899	The 2022 budget assumes a 3% increase for medical, and no increases for dental and vision insurance on 1/1/2022. The additional increase was the result of more family medical plans being selected which are the more expensive plans.
Dental Insurance	209,951	205,372	4,579	
Vision Insurance	37,633	36,812	821	
Life Insurance	45,000	72,573	(27,573)	Updated budget based on estimated rates from new provider.
STD Admin Fee	3,000	3,000	-	
Total Benefits/Taxes	$6,444,338	$6,394,044	$50,294	
Leave				
Change PL Liability	$200,000	$150,000	$50,000	The change in PL Liability is due to wage escalation and employees earning more leave than is used or cashed out. The change can vary greatly from year to year based on employee turnover.
Paid Time Off	2,190,872	2,097,874	92,998	
Leave Subtotal	$2,390,872	$2,247,874	$142,998	
Total Benefits/Taxes and Leave	**$8,835,210**	**$8,641,918**	**$193,292**	

Allocation Rate - Regular and Overtime	
Total Regular Benefits/Taxes and Leave	$8,835,210
Total Regular Productive Labor	$13,373,219
Allocation Rate - Regular Time	**66.07%**

Budget by Directorate

Tab 6

Revenue and Expense Summary by Department
Public Utility District No. 1 of Benton County
2022 Budget

	2022 Budget	2021 Original Budget	Increase/ (Decrease)	% Change
REVENUE				
Finance and Customer Service	$1,112,199	$1,336,070	($223,871)	(16.8%)
Broadband	3,140,942	2,980,207	160,735	5.4%
Engineering	3,690,737	3,532,726	158,011	4.5%
Power Management	22,218,273	23,427,727	(1,209,454)	(5.2%)
Operations	279,983	285,720	(5,737)	(2.0%)
Non-Departmental	136,848,696	133,063,984	3,784,712	2.8%
Total Revenue	**$167,290,830**	**$164,626,434**	**$2,664,396**	**1.6%**
EXPENSES				
Executive Administration	$3,110,533	$2,836,324	$274,209	9.7%
Finance & Customer Service	4,764,408	4,503,095	261,313	5.8%
Information Technology	5,806,563	5,389,555	417,008	7.7%
Broadband	2,983,020	2,684,740	298,280	11.1%
Engineering	17,556,237	14,402,070	3,154,167	21.9%
Power Management	101,780,674	104,307,794	(2,527,120)	(2.4%)
Operations	14,388,072	12,631,400	1,756,672	13.9%
Non-Departmental	36,629,992	35,846,360	783,632	2.2%
Total Expenses	**$187,019,499**	**$182,601,338**	**$4,418,161**	**2.4%**

Executive

Tab 6

PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY
2022 Budget
Summary of Expense by Directorate

Executive Administration

Department(s)		Totals
01	General Manager, Commission	2,147,771
02	Human Resources	412,187
12	Communications & Government	550,575
Grand Total Expenses	**Executive Administration**	$3,110,533

Directorate Budget by Department and Activity
2022 Budget Compared to 2021 Original Budget

Directorate	Executive

Department	Activity	2022 Budget	2021 Original Budget	Increase / (Decrease)	% Increase / (Decrease)
1 - General Manager, Commission	11 - All Other District Labor	$1,385,866	$1,233,979	$151,887	12.3%
	33 - Office Supplies & Expenses	14,200	11,200	3,000	26.8%
	42 - Business Expense & Travel	76,300	46,200	30,100	65.2%
	43 - Training Expense & Travel	9,900	11,300	(1,400)	(12.4%)
	44 - Other General Expenses	35,000	30,000	5,000	16.7%
	45 - Subscriptions & Publications	10,536	9,036	1,500	16.6%
	61 - Professional Services	85,000	115,000	(30,000)	(26.1%)
	72 - Industry Assoc Assessments	530,969	448,654	82,315	18.3%
1 - General Manager, Commission Total		**2,147,771**	**1,905,369**	**242,402**	**12.7%**
2 - Human Resources	42 - Business Expense & Travel	11,450	10,500	950	9.0%
	43 - Training Expense & Travel	3,800	3,800	-	0.0%
	44 - Other General Expenses	43,250	40,500	2,750	6.8%
	45 - Subscriptions & Publications	5,500	5,800	(300)	(5.2%)
	61 - Professional Services	161,000	225,500	(64,500)	(28.6%)
	72 - Industry Assoc Assessments	36,687	37,340	(653)	(1.7%)
	104 - Other Employee Costs	150,500	82,000	68,500	83.5%
2 - Human Resources Total		**412,187**	**405,440**	**6,747**	**1.7%**
12 - Communications & Government	42 - Business Expense & Travel	23,000	14,900	8,100	54.4%
	45 - Subscriptions & Publications	800	800	-	0.0%
	61 - Professional Services	189,000	154,000	35,000	22.7%
	70 - Civic & Service Organizations	16,265	16,265	-	0.0%
	72 - Industry Assoc Assessments	4,050	4,050	-	0.0%
	73 - Other Assessments	-	35,000	(35,000)	(100.0%)
	119 - Public Information Expenses	317,460	300,500	16,960	5.6%
12 - Communications & Government Total		**550,575**	**525,515**	**25,060**	**4.8%**
Grand Total		**$3,110,533**	**$2,836,324**	**$274,209**	**9.7%**

Department 01 General Manager, Commission

Activity	Description	GL/FERC	BU Project	Amount
011	**All Other District Labor**			**$1,385,866**
	Labor - Admin General	920.00		$1,064,198
	Labor - Customer Accounting	903.00		$114,611
	Labor - Leave	184.30		$194,021
	Labor - Power	557.00		$13,036
033	**Office Supplies & Expenses**			**$14,200**
	Misc Office Supplies	921.00		$8,000
	Off-Site Storage of Permanent Records (CI Shred)	921.00		$1,200
	Records Mgmt - Shredding Services (CI Shred)	921.00		$5,000
042	**Business Expense and Travel**			**$76,300**
	Commission Travel	930.20		$53,000
	General Manager	921.00		$22,000
	WPUDA Annual Assistant's Meeting 2/Year (Assistant)	921.00		$700
	WPUDA Records Roundtable (Administrator)	921.00		$600
043	**Training Expense & Travel**			**$9,900**
	ARMA Local/In-State Training (Administrator/Supervisor)	921.00		$2,600
	Misc Training (Local Seminars/Trainings)	921.00		$1,900
	WA Municipal Clerks Association Conference & 3 Exec Committee Mtgs (Marshall)	921.00		$1,400
	WAPRO Training 2/Year (Administrator/Supervisor/Director)	921.00		$4,000
044	**Other General Expenses**			**$35,000**
	Election Costs (Annual Fee)	930.20		$35,000
045	**Subscriptions & Publications**			**$10,536**
	Clearing Up (NewsData)	930.20		$8,300
	Columbia Basin Bulletin (General Manager)	930.20		$96
	Energy GPS Newsletter (General Manager)	930.20		$1,600
	Wall Street Journal (Commissioner)	930.20		$540
061	**Professional Services**			**$85,000**
	Contract Attorney	930.20		$75,000
	Misc. Legal (Gordon Thomas Honeywell)	930.20		$10,000
072	**Industry Association Assessment**			**$530,969**

Department 01 General Manager, Commission

Activity	Description	GL/FERC	BU Project	Amount
	APPA	930.20		$49,821
	ARMA Membership - Includes Local Chapter (Administrator)	921.00		$200
	Benton/Franklin Council of Governments	930.20		$7,290
	IEEE (General Manager)	921.00		$235
	International Institute of Municipal Clerks (Supervisor)	921.00		$200
	NAGARA Membership (Administrator)	921.00		$89
	Notary (Supervisor/Assistant)	921.00		$90
	NW River Partners	930.20		$58,219
	NW River Partners Media Campaign Ask	930.20		$43,664
	NWPPA	930.20		$31,500
	Pacific Northwest Waterways (PNWA)	930.20		$3,400
	PNUCC	557.00		$11,192
	PNUCC Columbia River Treaty Dues	557.00		$3,150
	PNWA (Inland Ports and Navigation Group)	930.20		$9,000
	PNWA (PNW River Values Campaign)	930.20		$10,000
	Professional Engineers License (General Manager)	921.00		$116
	Public Generating Pool (PGP)	557.00		$75,000
	Public Power Council (PPC)	557.00		$59,300
	Rotary Club of Tri Cities Sunrise (Commissioner)	930.20		$1,000
	SHRM (Assistant)	921.00		$219
	South Central WMCA (Supervisor)	921.00		$50
	TRIDEC	930.20		$20,000
	WA Municipal Clerk Association (Supervisor)	921.00		$75
	WA Public Records Officer Association (Administrator/Supervisor/Director)	921.00		$75
	WPUDA	930.20		$147,084
TOTAL EXPENSE General Manager, Commission				**$2,147,771**

Department 02 Human Resources

Activity	Description	GL/FERC	BU Project	Amount
042	**Business Expense and Travel**			**$11,450**
	CWPU Meetings	921.00		$1,000
	Executive - Leadership Planning Workshop	921.00		$500
	HR - Affiliate Conferences	921.00		$3,900
	HR - AWC Labor Relations Institute	921.00		$1,750
	HR - Business Travel	921.00		$1,000
	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**			**$43,250**
	Driver Abstracts/Clearinghouse Queries	921.00		$2,000
	Employee Recognition & Programs	921.00		$7,000
	Energy Northwest Internship Program	921.00		$2,000
	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**			**$5,500**
	Labor Law Poster Updates	921.00		$300
	Salary Survey - Misc.	921.00		$500
	Salary Surveys (Milliman)	921.00		$4,700
061	**Professional Services**			**$161,000**
	Consultant - Affirmative Action	921.00		$1,500
	Consultant - Policy Development	921.00		$2,000
	District - emPOWERed Training	921.00		$85,000
	District - Respectful Workforce Training	921.00		$11,500
	District - Safety Training	921.00		$5,000
	District - SHL Kenexa Access Testing Administration (Employee or Candidate)	921.00		$3,000
	Leadership Training Series	921.00		$40,000

Department 02 Human Resources

Activity	Description	GL/FERC	BU Project	Amount
	Legal Services	921.00		$10,000
	Trucking Consortium (Service Fee & Training)	923.00		$3,000
072	**Industry Association Assessment**			**$36,687**
	CWPU Membership Assessments	921.00		$35,000
	District - Assoc. of WA Cities Membership	921.00		$500
	HR Staff - SHRM Professional Memberships (3)	921.00		$657
	HR Staff - World at Work Memberships (2)	921.00		$530
104	**Other Employee Costs**			**$150,500**
	360 Wellbeing Program	926.10		$41,000
	Assessments - ADA, Ergonomic & Fitness For Duty	926.10		$1,000
	Assessments - CDL Medical Certifications	926.10		$3,000
	COBRA Administration	926.10		$2,000
	ComPsych EAP Administration	926.10		$2,500
	CWPU Wellness Program/Catapult	926.10		$11,000
	Employee Assistance Program (EAP) Mediation	926.10		$500
	Flex 125 Plan Administration	926.10		$2,500
	HealthInvest Administration Fee	926.10		$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		$35,000
	Tuition Reimbursement	926.10		$30,000
TOTAL EXPENSE Human Resources				**$412,187**

Department 12 Communications & Government

Activity	Description	GL/FERC	BU Project	Amount
042	**Business Expense and Travel**			**$23,000**
	Adobe Max, NWPPA, WPUDA (Specialist)	921.00		$8,500
	APPA, NWPPA, PPC, WPUDA (Manager	921.00		$14,500
045	**Subscriptions & Publications**			**$800**
	Seattle Times, Shutterstock, Survey Monkey, Tri-City Herald	921.00		$800
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**			**$16,265**
	Tri-Cities Hispanic Chamber of Commerce	921.00		$450
	Tri-Cities Regional Chamber of Commerce	921.00		$10,815
	Visit Tri-Cities	921.00		$5,000
072	**Industry Association Assessment**			**$4,050**
	Foundation for Water & Energy Education	910.00		$500
	Leadership TC Alumni Association Dues (Manager)	910.00		$50
	Smart Energy Consumer Collaborative	910.00		$2,500
	TC Public Relations Society of America (Manager/Specialist)	910.00		$1,000
119	**Public Information Expenses**			**$317,460**
	Advertising (Print & Online)	910.00		$27,060
	Printing (Newsletter, Brochures, Inserts, Direct Mail, etc.)	910.00		$84,500
	Public Education/Community Outreach	910.00		$61,900
	TV/Radio	910.00		$144,000
TOTAL EXPENSE Communications & Government				**$550,575**

Finance & Customer Service

Tab 6

PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY
2022 Budget
Summary of Expense by Directorate

Finance & Customer Service

Department(s)		Totals
11	Finance & Business Services	815,468
14	General Accounting	609,886
16	Risk Management & Treasury	1,356,430
17	Contracts & Purchasing	19,795
43	Marketing & Key Accounts	275,693
44	Customer Service	1,687,136
Grand Total Expenses	**Finance & Customer Service**	$4,764,408

Directorate Budget by Department and Activity
2022 Budget Compared to 2021 Original Budget

Directorate	Finance & Customer Services

Department	Activity	2022 Budget	2021 Original Budget	Increase / (Decrease)	% Increase / (Decrease)
11 - Finance & Business Services	10 - District Overtime Labor	$2,000	$2,000	$0	0.0%
	11 - All Other District Labor	803,151	779,266	23,885	3.1%
	33 - Office Supplies & Expenses	5,000	5,000	-	0.0%
	42 - Business Expense & Travel	1,300	1,300	-	0.0%
	43 - Training Expense & Travel	2,600	2,600	-	0.0%
	45 - Subscriptions & Publications	200	200	-	0.0%
	72 - Industry Assoc Assessments	1,217	1,207	10	0.8%
11 - Finance & Business Services Total		**815,468**	**791,573**	**23,895**	**3.0%**
14 - General Accounting	10 - District Overtime Labor	1,000	1,000	-	0.0%
	11 - All Other District Labor	521,748	504,160	17,588	3.5%
	43 - Training Expense & Travel	4,000	3,900	100	2.6%
	45 - Subscriptions & Publications	2,220	2,305	(85)	(3.7%)
	60 - Audit Examination - State	79,500	76,500	3,000	3.9%
	72 - Industry Assoc Assessments	1,418	1,615	(197)	(12.2%)
14 - General Accounting Total		**609,886**	**589,480**	**20,406**	**3.5%**
16 - Treasurer	34 - Insurance	817,950	643,450	174,500	27.1%
	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%
	45 - Subscriptions & Publications	-	500	(500)	(100.0%)
	46 - Treasurer Expenses	491,000	485,000	6,000	1.2%
	61 - Professional Services	32,500	32,500	-	0.0%
	72 - Industry Assoc Assessments	80	80	-	0.0%
16 - Treasurer Total		**1,356,430**	**1,176,430**	**180,000**	**15.3%**
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	430	430	-	0.0%
17 - Purchasing Total		**19,795**	**19,795**	**-**	**0.0%**
42 - Prosser Branch	10 - District Overtime Labor	-	5,012	(5,012)	(100.0%)
	11 - All Other District Labor	-	323,729	(323,729)	(100.0%)
	30 - Customer Service Expenses	-	15,800	(15,800)	(100.0%)
	33 - Office Supplies & Expenses	-	3,000	(3,000)	(100.0%)
	39 - Maint of Equipment	-	1,000	(1,000)	(100.0%)
	42 - Business Expense & Travel	-	1,300	(1,300)	(100.0%)
	43 - Training Expense & Travel	-	2,000	(2,000)	(100.0%)
	51 - Water,Garbage,Irrigation&Other	-	19,000	(19,000)	(100.0%)
	70 - Civic & Service Organizations	-	3,115	(3,115)	(100.0%)
	72 - Industry Assoc Assessments	-	4,500	(4,500)	(100.0%)
42 - Prosser Branch Total			**378,456**	**(378,456)**	**(100.0%)**
43 - Marketing & Key Accounts	11 - All Other District Labor	263,543	-	263,543	N/A
	42 - Business Expense & Travel	1,500	-	1,500	N/A
	43 - Training Expense & Travel	3,000	-	3,000	N/A
	70 - Civic & Service Organizations	3,150	-	3,150	N/A
	72 - Industry Assoc Assessments	4,500	-	4,500	N/A
43 - Marketing & Key Accounts Total		**275,693**		**275,693**	**N/A**
44 - Customer Service	10 - District Overtime Labor	21,868	20,607	1,261	6.1%
	11 - All Other District Labor	1,093,422	1,030,390	63,032	6.1%
	30 - Customer Service Expenses	515,046	436,564	78,482	18.0%
	33 - Office Supplies & Expenses	24,000	24,000	-	0.0%
	39 - Maint of Equipment	3,400	3,400	-	0.0%
	42 - Business Expense & Travel	7,200	7,200	-	0.0%
	43 - Training Expense & Travel	3,500	6,500	(3,000)	(46.2%)
	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		**1,687,136**	**1,547,361**	**139,775**	**9.0%**
Grand Total		**$4,764,408**	**$4,503,095**	**$261,313**	**5.8%**

Department 11 Finance & Business Services

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**			**$803,151**
	Labor - Admin General	920.00		$522,037
	Labor - Customer Accounting	903.00		$36,077
	Labor - Distribution	588.00		$88,097
	Labor - Leave	184.30		$112,441
	Labor - Purchased Power	557.00		$44,499
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**			**$2,600**
	APPA/GFOA/Accounting/Auditing Standards Training (Director)	921.00		$1,000
	Office Training (Assistant)	921.00		$1,000
	WPUDA (Director)	921.00		$600
045	**Subscriptions & Publications**			**$200**
	Miscellaneous Publications	921.00		$200
072	**Industry Association Assessment**			**$1,217**
	AICPA (American Institute of CPA's) Membership (Director)	921.00		$295
	CMA License - IMA (Inst of Mgmt Accountants) (Director)	921.00		$260
	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				**$815,468**

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**			**$521,748**
	Labor - Admin General	920.00		$448,703
	Labor - Leave	184.30		$73,045
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**			**$2,220**
	APA Basic Guide to Payroll	921.00		$500
	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**			**$79,500**
	Financial Statement External Audit	923.00		$58,500
	State Auditor's Office	923.00		$21,000
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				**$609,886**

Department 16 Risk Management & Treasury

Activity	Description	GL/FERC	BU Project	Amount
034	**Insurance**			**$817,950**
	Crime Policy	925.00		$4,050
	Cyber Security Insurance	925.00		$35,100
	Fiduciary Liability Policy	925.00		$16,000
	Liability, Directors & Officers	925.00		$20,100
	Liability, Excess $65 million, EIM	925.00		$71,200
	Liability, Excess General & Professional, AEGIS	925.00		$254,000
	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		$178,500
	Property, General Assessment	925.00		$80,000
	Railroad	925.00		$3,000
	Special Trips	925.00		$4,000
	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**			**$491,000**
	Bank Service Fees (Bank of America)	921.00		$25,000
	Credit Card Processor Fees (NISC)	903.00		$400,000
	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		$10,000
	Fitch Ratings	923.00		$7,500
	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 **$1,356,430**

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**			**$430**
	ISM Membership Dues (Manager)	588.00		$180
	NIGP Membership Dues (Base Agency Fee) (Manager)	588.00		$190
	NIGP Membership Dues (Buyer)	588.00		$60
TOTAL EXPENSE Contracts & Purchasing				**$19,795**

Department 43 Marketing & Key Accounts

Activity	Description	GL/FERC	BU Project	Amount
011	**All Other District Labor**			**$263,543**
	Labor - Customer Accounting	903.00		$226,647
	Labor - Leave	184.30		$36,896
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**			**$3,150**
	Benton City Chamber of Commerce	903.00		$300
	Prosser Chamber of Commerce	903.00		$350
	Prosser Economic Development Assoc Dues	903.00		$2,500
072	**Industry Association Assessment**			**$4,500**
	Columbia Snake River Irrigators Association Dues	903.00		$4,500
TOTAL EXPENSE Marketing & Key Accounts				**$275,693**

Department 44 Customer Service

Activity	Description	GL/FERC	BU Project	Amount
010	**District Overtime Labor**			**$21,868**
	Labor - Overtime - Customer Accounting	903.00		$21,868
011	**All Other District Labor**			**$1,093,422**
	Labor - Admin General	920.00		$1,678
	Labor - Customer Accounting	903.00		$938,665
	Labor - Leave	184.30		$153,079
030	**Customer Service Expenditures**			**$515,046**
	Application Processing Fees (Helping Hands/Disabled Disc Programs)	903.00		$9,800
	Armored Car, Kennewick & Prosser Kiosks, Dropbox	903.00		$17,500
	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		$3,000
	NISC - Messenger Letters, Urgent Notices, LL, Autopay, Budget Plan	903.00		$89,465
	NISC - Print & Mail Services (forms,envelopes, data)	903.00		$318,226
	NISC - Special Handle Bill Postage/Online Payments RPPS/Fiserv	903.00		$6,500
	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**			**$3,400**
	Postage Meter & Mail Insert Machine Expenses	903.00		$3,400
042	**Business Expense and Travel**			**$7,200**
	CS Week/NWPPA	903.00		$1,500
	NISC LUC and Users Groups	903.00		$1,700
	NISC MIC	903.00		$4,000
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 **$1,687,136**

Information Technology / Broadband

Tab 6

PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY
2022 Budget
Summary of Expense by Directorate

Information Technology (IT)

Department(s)		Totals
15	IT Infrastructure	2,561,958
18	IT Applications	3,244,605
Grand Total Expenses	**Information Technology (IT)**	$5,806,563

Directorate Budget by Department and Activity
2022 Budget Compared to 2021 Original Budget

Directorate	Information Technology

Department	Activity	2022 Budget	2021 Original Budget	Increase / (Decrease)	% Increase / (Decrease)
15 - IT Infrastructure	10 - District Overtime Labor	$2,000	$3,500	($1,500)	(42.9%)
	11 - All Other District Labor	729,058	706,326	22,732	3.2%
	25 - Maintenance of Software	340,950	320,650	20,300	6.3%
	26 - Computer Hardware & Equip Exp	123,000	73,500	49,500	67.3%
	27 - Personal Computer Software	128,000	74,500	53,500	71.8%
	28 - Personal Computer O&M Costs	146,700	141,700	5,000	3.5%
	29 - Personal Computer Supplies&Exp	9,000	9,000	-	0.0%
	33 - Office Supplies & Expenses	14,000	10,000	4,000	40.0%
	42 - Business Expense & Travel	18,000	11,700	6,300	53.8%
	43 - Training Expense & Travel	19,500	12,675	6,825	53.8%
	45 - Subscriptions & Publications	250	250	-	0.0%
	50 - Telephone & Answering Services	146,500	144,500	2,000	1.4%
	61 - Professional Services	110,000	214,000	(104,000)	(48.6%)
	137 - Capitalized Computer Software	55,000	208,000	(153,000)	(73.6%)
	138 - Computer Equipment	720,000	805,000	(85,000)	(10.6%)
15 - IT Infrastructure Total		**2,561,958**	**2,735,301**	**(173,343)**	**(6.3%)**
18 - IT Applications	11 - All Other District Labor	1,160,781	1,205,071	(44,290)	(3.7%)
	17 - Operation & Maintenance Exp	68,400	68,400	-	0.0%
	25 - Maintenance of Software	920,099	842,783	77,316	9.2%
	26 - Computer Hardware & Equip Exp	17,500	17,500	-	0.0%
	27 - Personal Computer Software	10,000	9,700	300	3.1%
	33 - Office Supplies & Expenses	1,500	1,500	-	0.0%
	42 - Business Expense & Travel	27,500	19,175	8,325	43.4%
	43 - Training Expense & Travel	14,225	10,725	3,500	32.6%
	45 - Subscriptions & Publications	250	250	-	0.0%
	61 - Professional Services	576,350	406,150	170,200	41.9%
	72 - Industry Assoc Assessments	8,000	8,000	-	0.0%
	137 - Capitalized Computer Software	440,000	65,000	375,000	576.9%
18 - IT Applications Total		**3,244,605**	**2,654,254**	**590,351**	**22.2%**
Grand Total		**$5,806,563**	**$5,389,555**	**$417,008**	**7.7%**

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**			**$729,058**
	Communications Monitors	391.00	25	$5,000
	Fiber to Prior #1	380.00	144	$850
	Labor - Admin General	920.00		$424,823
	Labor - Customer Accounting	903.00		$60,689
	Labor - Distribution	588.00		$121,378
	Labor - Leave	184.30		$102,068
	Network Switch purchase	391.00	33	$5,000
	Video Conference Room Upgrades	391.00	24	$4,250
	Windows Datacenter Licenses	391.00	38	$5,000
025	**Maintenance of Software**			**$340,950**
	1Password	921.00		$5,200
	Accellion (FTP Software)	921.00		$8,600
	Accellops	921.00		$7,500
	Acronis (Desktop/Server Imaging)	921.00		$2,300
	Archive Social	921.00		$1,800
	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
	FoxIT	921.00		$2,000
	Kemp Load Balancers	921.00		$2,500
	Manager Engine	921.00		$7,000
	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		$25,000
	Net App Software Renewal (Kennewick)	921.00		$48,000
	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

Department 15 IT Infrastructure

Activity	Description	GL/FERC	BU Project	Amount
	Room Tech Monitoring	921.00		$500
	RSA (Network Authentication)	921.00		$3,000
	Secret Server	921.00		$2,200
	SmartNet (Ironport, Firepower)	921.00		$36,500
	SmartNet (Phone)	921.00		$22,500
	Solar Winds (Network Monitoring)	921.00		$25,000
	Solar Winds (Storage, VM)	921.00		$6,000
	SpecOPS Password Enforcer	921.00		$2,500
	Third Tier Backup Software (Veeam)	921.00		$23,500
	Trackit (Help Desk Ticket Tracker)	921.00		$3,800
	VMWare (Server Virtualization)	921.00		$45,000
	VMWare (VDI)	921.00		$16,500
	Wallboard	903.00		$1,800
026	**Computer Hardware & Equip Exp**			**$123,000**
	Commission Technology	921.00		$1,500
	General PC needs (HD, Mouse, DVD Burner, Cables, etc)	921.00		$6,000
	Printers for Labels @ Desktops	921.00		$3,000
	Replacement Desktop (8)	921.00		$20,000
	Replacement Laptops (3)	921.00		$20,000
	Replacement Monitors (20)	921.00		$6,000
	Replacement projectors - (Conference Room)	921.00		$3,000
	Tablets - iPads (60)	588.00		$60,000
	Zero Clients (10)	921.00		$3,500
027	**Personal Computer Software**			**$128,000**
	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		$110,000
028	**Personal Computer O&M Costs**			**$146,700**
	Cisco SmartNets	921.00		$100,000
	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

Department 15 IT Infrastructure

Activity	Description	GL/FERC	BU Project	Amount
	MFP Maintenance - Prosser	921.00		$1,000
	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**			**$14,000**
	Cisco Phones	921.00		$10,000
	CyberSecurity Materials	921.00		$4,000
042	**Business Expense and Travel**			**$18,000**
	IT Management/Strategic Planing (Manager)	921.00		$3,500
	SAN/VMWare Conference (Administrator)	921.00		$6,000
	Security Conference (Network Engineer)	921.00		$6,000
	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**			**$146,500**
	Aircards - Operations (Cradlepoint)	588.00		$6,500
	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**			**$110,000**
	Datacenter Redesign	391.00	269	$30,000
	Exchange Support	921.00		$5,000
	Infrastructure Support	921.00		$10,000
	OT/SCADA Architectural Review	921.00		$45,000
	Phone System Support	921.00		$10,000
	Technology Asset Management Audit	921.00		$10,000
137	**Capitalized Computer Software**			**$55,000**
	SQL Software - Database Licenses	391.00	271	$30,000
	Windows Datacenter Licenses	391.00	38	$25,000
138	**Computer Equipment**			**$720,000**
	Big Data Storage Array	391.00	327	$100,000
	Cisco Blade Server	391.00	44	$200,000
	Communications Monitors	391.00	25	$50,000
	CWDM for Datacenter connection	391.00	329	$25,000
	Multi-Function Printer	391.00	302	$35,000
	Network Switch purchase	391.00	33	$40,000
	Storage Area Network (SAN) Upgrade	391.00	267	$120,000
	UCS Memory	391.00	303	$40,000
	Veeam repository	391.00	328	$70,000
	Video Conference Room Upgrades	391.00	24	$40,000
TOTAL EXPENSE IT Infrastructure				**$2,561,958**

Department 18 IT Applications

Activity	Description	GL/FERC	BU Project	Amount
011	**All Other District Labor**			**$1,160,781**
	Enterprise Security System	391.00	222	$10,000
	iVUE Enhancements	391.00	31	$10,000
	Labor - Admin General	920.00		$466,233
	Labor - Broadband	935.20		$5,521
	Labor - Customer Accounting	903.00		$160,395
	Labor - Distribution	588.00		$291,838
	Labor - Leave	184.30		$162,509
	Labor - Transmission	566.00		$4,285
	NoaNET NCS and District Labor	397.20	22	$15,000
	SCADA Historian Enhancements	391.00	247	$30,000
	TRIM Upgrade	391.00	266	$5,000
017	**Operation & Maintenance Expense**			**$68,400**
	Benton County Aerial Imagery (Orthophotos)	588.00		$6,000
	Benton County Plat Imagery	588.00		$900
	Sensus Flexnet Meter Reading Fee	902.00		$61,500
025	**Maintenance of Software**			**$920,099**
	Adobe Creative Cloud	921.00		$1,010
	Alden	588.00		$4,048
	AutoCAD Network License	588.00		$4,000
	Cascade (Asset Management)	588.00		$20,750
	CrisisGo	921.00		$3,000
	Doble Software Maintenance	588.00		$3,450
	DocuSign	921.00		$3,350
	ESRI (GIS)	588.00		$27,200
	Foglight	920.00		$27,000
	Google Translate Service (Website)	921.00		$24,000
	Hoodsuite	921.00		$640
	IKE GPS Software Services	588.00		$4,200
	Kapish EasyLink	921.00		$900
	Kentico License (Website)	921.00		$1,350
	MilSoft (Analysis)	588.00		$12,000
	NeoGov	921.00		$35,500
	NISC Monthly Recurring Costs	588.00		$103,500
	NISC Monthly Recurring Costs	921.00		$189,500

Department 18 IT Applications

Activity	Description	GL/FERC	BU Project	Amount
	NISC Monthly Recurring Costs	902.00		$32,000
	NISC Monthly Recurring Costs	903.00		$46,000
	Oracle (Database, Partitioning, Tuning/Diagnostics)	921.00		$81,000
	Osmose Ocalc Licenses (8)	588.00		$3,200
	PI Historian Annual Maintenance	588.00		$11,000
	PowerApps	921.00		$15,000
	PowerWorld Transmission Software	588.00		$3,800
	Prezi	921.00		$3,400
	Red Hat Openshift Container Platform - Production Server	921.00		$6,500
	Reporting Workflow Software	921.00		$2,000
	Sag10	588.00		$1,300
	Sensus Alarm Manager	902.00		$7,000
	Sensus RNI	902.00		$92,000
	SentryOne Annual Maintenance (SSIS)	921.00		$3,000
	SQL Server SA	921.00		$33,000
	SSIS Additional Add-on's (CozyRoc)	921.00		$2,000
	Survalent (SCADA)	592.30		$26,000
	Tableau Business Intelligence Software	921.00		$36,000
	Toad Data Point	921.00		$160
	Toad for Oracle (Xpert Edition - 2)	921.00		$1,200
	Toad for Oracle Base Edition (3 - Analysts)	921.00		$806
	Toad for Oracle DBA Suite	921.00		$1,450
	Toad for SQL Server Professional Edition (2)	921.00		$310
	Toad for SQL Server Xpert Edition (3)	921.00		$1,800
	TRIM	921.00		$27,000
	Vegetation Management Software	588.00		$5,000
	Vehicle Management System Maintenance	588.00		$5,900
	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**			**$10,000**
	Misc Upgrades and Software	921.00		$2,500
	Watt-Net Express License	588.00		$7,500
033	**Office Supplies & Expenses**			**$1,500**
	Misc Office Supplies	921.00		$1,500

Department 18 IT Applications

Activity	Description	GL/FERC	BU Project	Amount
042	**Business Expense and Travel**			**$27,500**
	Business Intelligence Conference	921.00		$6,000
	Data Integration & DBA Conferences	921.00		$6,000
	IT Management/Strategic Planning (Director)	921.00		$3,000
	IT Mgmt/Strategic Planning (Manager)	921.00		$2,500
	NISC User Group (Analyst)	921.00		$6,000
	SCADA User Group (Analyst)	588.00		$2,000
	Sensus User Conference (1)	902.00		$2,000
043	**Training Expense & Travel**			**$14,225**
	AppDev Training (Developers - 3)	921.00		$1,000
	Business Intelligence and Database Training	921.00		$8,725
	Database Administration Training	921.00		$2,500
	SCADA/Historian Training	588.00		$2,000
045	**Subscriptions & Publications**			**$250**
	Subscription & Publications	921.00		$250
061	**Professional Services**			**$576,350**
	AMI Enhanced Support	902.00		$42,000
	BI Consulting	921.00		$15,000
	Enterprise Security System	391.00	222	$150,000
	Intranet Redesign Study	921.00		$10,000
	iVUE Enhancements	391.00	31	$82,000
	NISC Programming (Expense)	921.00		$5,000
	Survalent Consulting (TEA Rewrite)	588.00		$35,000
	TRIM Maintenance/Consulting	921.00		$24,000
	TRIM Upgrade	391.00	266	$25,000
	Website Annual Upgrades & Misc Programming	921.00		$20,350
	Website Redesign	921.00		$150,000
	Website Support & Maintenance	921.00		$18,000
072	**Industry Association Assessment**			**$8,000**
	Utility Analytics Membership	921.00		$8,000
137	**Capitalized Computer Software**			**$440,000**
	Enterprise Security System	391.00	222	$400,000

Department 18 IT Applications

Activity	Description	GL/FERC	BU Project	Amount
	SCADA Historian Enhancements	391.00	247	$40,000
TOTAL EXPENSE	**IT Applications**			**$3,244,605**

PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY
2022 Budget
Summary of Expense by Directorate

Broadband

Department(s)		Totals
46	Broadband	2,983,020
Grand Total Expenses	**Broadband**	$2,983,020

Directorate Budget by Department and Activity
2022 Budget Compared to 2021 Original Budget

Directorate	Broadband

Department	Activity	2022 Budget	2021 Original Budget	Increase / (Decrease)	% Increase / (Decrease)
46 - Broadband	12 - Materials & Supplies	$495,550	$366,603	$128,947	35.2%
	17 - Operation & Maintenance Exp	46,500	46,500	-	0.0%
	18 - Misc Construction Expense	20,000	20,000	-	0.0%
	20 - Off-the-Dock Labor	942,950	905,397	37,553	4.1%
	28 - Personal Computer O&M Costs	59,000	59,000	-	0.0%
	38 - Maint of Bldg & Improvements	3,500	7,500	(4,000)	(53.3%)
	40 - Rents	157,766	134,711	23,055	17.1%
	44 - Other General Expenses	1,057,754	995,029	62,725	6.3%
	136 - Communication Equipment	200,000	150,000	50,000	33.3%
46 - Broadband Total		**2,983,020**	**2,684,740**	**298,280**	**11.1%**
Grand Total		**$2,983,020**	**$2,684,740**	**$298,280**	**11.1%**

Department 46 Broadband

Activity	Description	GL/FERC	BU Project	Amount
012	**Materials & Supplies**			**$495,550**
	Advanced Wireless/Small Cell	397.30	214	$202,050
	Fiber Backbone & Laterals	397.30	134	$37,500
	Fiber Conduit	397.20	19	$6,000
	Fiber Customer Connects - LEC	397.20	135	$150,000
	System Improvement Projects	397.20	349	$100,000
017	**Operation & Maintenance Expense**			**$46,500**
	21-46-01 NCS - Fiber Replacement and Restoration	935.30		$40,000
	Fiber Reel Testing	935.20		$6,500
018	**Miscellaneous Construction Expense**			**$20,000**
	Franchise BB Facility Relocations	397.30	252	$20,000
020	**Off-the-Dock Labor**			**$942,950**
	Advanced Wireless/Small Cell	397.30	214	$471,450
	Fiber Backbone & Laterals	397.30	134	$87,500
	Fiber Conduit	397.20	19	$14,000
	Fiber Customer Connects - LEC	397.20	135	$350,000
	Joint Use Audit Corrective Actions	935.30		$20,000
028	**Personal Computer O&M Costs**			**$59,000**
	Curvature Cisco Equipment Maintenance	935.20		$22,000
	Nokia - MPLS Equipment M&S	935.20		$37,000
038	**Maint of Bldg & Improvements - General**			**$3,500**
	Maintenance Expense (Nodes and Building)	935.20		$3,500
040	**Rents**			**$157,766**
	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
	18-46-06 COR - DFL - 651 Truman	935.20		$1,620
	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
	19-46-06 COR - Dark Fiber Lease - BIPIN	935.20		$3,240
	19-46-07 COR - Dark Fiber Lease - Columbia REA	935.20		$1,620

Department 46 Broadband

Activity	Description	GL/FERC	BU Project	Amount
	19-46-08 COR - Dark Fiber Lease - Preferred Freezer	935.20		$6,420
	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
	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)	935.20		$8,600
044	**Other General Expenses**			**$1,057,754**
	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	935.20		$4,200
	18-46-02 NCS; NoaNet Labor Allocation to O&M	935.20		$821,083
	Franklin PUD Recurring Transport Charges	935.20		$2,200
	NoaNET NCS and District Labor	397.20	22	$205,271
136	**Communication Equipment**			**$200,000**
	Backbone System Electronics	397.40	133	$125,000

Department 46 Broadband

Activity	Description	GL/FERC	BU Project	Amount
	Premise Electronics	397.25	136	$75,000
TOTAL EXPENSE	**Broadband**			**$2,983,020**

Engineering

Tab 6

PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY
2022 Budget
Summary of Expense by Directorate

Engineering

Department(s)		Totals
21	Engineering	16,533,765
22	Customer Engineering	1,022,472
Grand Total Expenses	**Engineering**	$17,556,237

Directorate Budget by Department and Activity
2022 Budget Compared to 2021 Original Budget

Directorate	Engineering

Department	Activity	2022 Budget	2021 Original Budget	Increase / (Decrease)	% Increase / (Decrease)
21 - Engineering	11 - All Other District Labor	$704,467	$683,756	$20,711	3.0%
	12 - Materials & Supplies	6,494,124	5,219,477	1,274,647	24.4%
	18 - Misc Construction Expense	190,660	101,260	89,400	88.3%
	20 - Off-the-Dock Labor	2,500	10,000	(7,500)	(75.0%)
	21 - Elec Construction Contracts	5,307,448	4,153,249	1,154,199	27.8%
	33 - Office Supplies & Expenses	4,000	4,000	-	0.0%
	42 - Business Expense & Travel	1,000	1,000	-	0.0%
	43 - Training Expense & Travel	10,400	10,400	-	0.0%
	45 - Subscriptions & Publications	2,500	2,500	-	0.0%
	61 - Professional Services	325,602	627,942	(302,340)	(48.1%)
	72 - Industry Assoc Assessments	10,154	15,154	(5,000)	(33.0%)
	120 - Substation Xfrs & Regulators	345,000	-	345,000	N/A
	121 - Substation Equip & Materials	1,195,511	807,535	387,976	48.0%
	122 - Line Devices	379,600	303,236	76,364	25.2%
	123 - Transformers & Related Items	1,500,000	1,200,000	300,000	25.0%
	125 - Land & Land Rights - Electric	-	328,864	(328,864)	(100.0%)
	127 - SCADA Communications Equipment	33,059	75,252	(42,193)	(56.1%)
	128 - SCADA Substation Equipment	26,739	25,000	1,739	7.0%
	132 - Office Equipment	1,000	1,000	-	0.0%
21 - Engineering Total		**16,533,765**	**13,569,625**	**2,964,140**	**21.8%**
22 - Customer Engineering	10 - District Overtime Labor	25,000	15,000	10,000	66.7%
	11 - All Other District Labor	726,265	724,790	1,475	0.2%
	14 - Small Tools & Materials	850	850	-	0.0%
	17 - Operation & Maintenance Exp	3,600	3,600	-	0.0%
	18 - Misc Construction Expense	16,457	30,905	(14,448)	(46.7%)
	29 - Personal Computer Supplies&Exp	1,500	1,000	500	50.0%
	33 - Office Supplies & Expenses	1,000	1,000	-	0.0%
	40 - Rents	15,000	15,000	-	0.0%
	42 - Business Expense & Travel	5,900	5,900	-	0.0%
	43 - Training Expense & Travel	17,800	17,800	-	0.0%
	61 - Professional Services	175,000	10,000	165,000	1650.0%
	125 - Land & Land Rights - Electric	27,500	-	27,500	N/A
	132 - Office Equipment	1,000	1,000	-	0.0%
	134 - Tools, Shop & Stores Equipment	5,600	5,600	-	0.0%
22 - Customer Engineering Total		**1,022,472**	**832,445**	**190,027**	**22.8%**
Grand Total		**$17,556,237**	**$14,402,070**	**$3,154,167**	**21.9%**

Department 21 Engineering

Activity	Description	GL/FERC	BU Project	Amount
011	**All Other District Labor**			**$704,467**
	Angus Bay #1 Feeder Breaker & Relay Replacement	362.01	318	$7,061
	Angus Bay #2 Feeder Breaker & Bay Relay Replacement	362.01	287	$7,061
	Angus Substation Scada Ugrades	380.00	202	$4,500
	Fiber to Prior #1	380.00	144	$1,765
	Kennewick Battery Bank Replacement	362.01	330	$500
	Labor - Admin General	920.00		$2,182
	Labor - Broadband	935.20		$25,451
	Labor - Customer Accounting	903.00		$4,048
	Labor - Distribution	588.00		$462,076
	Labor - Leave	184.30		$98,625
	Labor - Transmission	566.00		$51,564
	Prosser Bay #1 Voltage Reg Replacement	362.01	351	$4,238
	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	$10,000
	Transmission Line-Phillips to Spaw	355.00	212	$6,000
	Transmission Study-River System	355.00	299	$3,508
	Vista Substation Scada Ugrades	380.00	202	$4,500
	Zephyr Height SCADA Upgrades	380.00	202	$4,000
012	**Materials & Supplies**			**$6,494,124**
	Angus Substation SCADA Ugrades	380.00	202	$7,500
	Clodfelter Reconductor	365.00	324	$40,000
	Dist Base Growth	366.00	140	$847,354
	Dist Base Growth	365.00	140	$452,568
	Dist System Improvements	365.00	141	$165,488
	Distribution Pole Replacement	364.00	160	$5,136
	Distribution-Inventory Issued for O&M	588.00		$100,000
	Fiber to Prior #1	380.00	144	$2,386
	JU - NESC Compliance Program	364.00	145	$30,000
	JU - NESC Compliance Program	365.00	145	$95,000
	Plymouth Transmission Tie Switch	355.00	300	$275,040
	Poles & Fixtures, Misc Repairs	355.00	75	$100,000
	POS#102-HED-4 Getaway Reconductor	367.00	288	$30,575
	POS#11 - GUM-4, HED-3, recond. 3/0, Bowles Rd.	365.00	331	$120,000
	POS#111 - RTA-3 Recond Utilize 4" for 3 phase	367.00	290	$16,489

Department 21 Engineering

Activity	Description	GL/FERC	BU Project	Amount
	POS#115 - RTA-2 to RTA-1 Offload	365.00	291	$75,000
	POS#115 - RTA-2 to RTA-1 Offload	367.00	291	$55,000
	POS#119 - PSR-3 Reconductor	365.00	332	$59,860
	POS#119 - PSR-3 Reconductor	367.00	332	$63,000
	POS#38 - VIS-1 to Vis-6 Across Quinalt	367.00	152	$31,800
	POS#58 - BEC-3, new feeder to east to tie with SSR-1	365.00	205	$212,455
	POS#58 - BEC-3, new feeder to east to tie with SSR-1	364.00	205	$83,678
	POS#81 - PHI-8, new feeder north to Cochrane	365.00	297	$58,176
	POS#81 - PHI-8, new feeder north to Cochrane	367.00	297	$59,530
	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
	Southridge S1,S2,S3 Feeder Getaways	367.00	207	$330,222
	Spaw Phillips 115kV Breaker	355.00	334	$20,000
	Transmission Line-Phillips to Spaw	355.00	212	$2,069,800
	Vista Substation Feeder Getaways	367.00	296	$358,054
	Vista Substation Scada Ugrades	380.00	202	$5,000
018	**Miscellaneous Construction Expense**			**$190,660**
	Distribution Pole Replacement	364.00	160	$2,660
	Hedges 115kV Metering Point	355.00	169	$30,000
	Prosser Bay #1 Voltage Reg Replacement	362.01	351	$18,000
	Ridgeline Substation Fence/Gravel	360.00	325	$15,000
	Transmission Line-Phillips to Spaw	355.00	212	$125,000
020	**Off-the-Dock Labor**			**$2,500**
	Fiber to Prior #1	380.00	144	$2,500
021	**Electric Construction Contracts**			**$5,307,448**
	Dock Crew Joint Use Deficiency Corrections	590.10		$1,035,609
	Hedges 115kV Metering Point	355.00	169	$23,020
	Plymouth Transmission Tie Switch	355.00	300	$50,000
	POS#58 - BEC-3, new feeder to east to tie with SSR-1	365.00	205	$84,993
	POS#58 - BEC-3, new feeder to east to tie with SSR-1	364.00	205	$56,661
	Repair & Replacement-Cable	367.00	147	$1,015,446

Department 21 Engineering

Activity	Description	GL/FERC	BU Project	Amount
	Southridge S1,S2,S3 Feeder Getaways	367.00	207	$415,329
	Spaw Phillips 115kV Breaker	355.00	334	$250,000
	Transmission Line-Phillips to Spaw	355.00	212	$2,310,390
	Vista Substation Feeder Getaways	367.00	296	$66,000
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**			**$10,400**
	Technical Training (Assistant)	588.00		$1,000
	Technical Training (Manager)	588.00		$1,900
	Technical Training (Distribution Designer)	588.00		$700
	Technical Training (Engineer)	588.00		$1,900
	Technical Training (Engineer)	588.00		$1,900
	Technical Training (Engineer)	557.00		$1,100
	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**			**$325,602**
	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
	NERC/WECC Consulting - GDS #10-51-06	560.01		$30,000
	Plymouth Transmission Tie Switch	355.00	300	$30,000
	SCADA Communications Network Study	380.00	333	$75,000
	Transmission Line-Phillips to Spaw	355.00	212	$60,000
	Transmission Study - River System	355.00	299	$53,602
072	**Industry Association Assessment**			**$10,154**
	IEEE Membership (Manager/Senior Engineer/Engineer (4))	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

Department 21 Engineering

Activity	Description	GL/FERC	BU Project	Amount
	Smart Electric Power Alliance (SEPA)	588.00		$0
	WSU Power Engineering Program	588.00		$8,000
120	**Substation Transformers & Regulators**			**$345,000**
	Prosser Bay #1 Voltage Reg Replacement	362.01	351	$345,000
121	**Substation Equipment & Materials**			**$1,195,511**
	Angus Bay #1 Feeder Breaker & Relay Replacement	362.01	318	$115,784
	Angus Bay #2 Feeder Breaker & Bay Relay Replacement	362.01	287	$115,784
	Fire Mitigation - OH Line Reconstruction	365.00	312	$250,000
	Hedges 115kV Metering Point	355.00	169	$100,000
	Kennewick Battery Bank Replacement	362.01	330	$9,000
	POS#38 - VIS-1 to Vis-6 Across Quinalt	367.00	152	$55,700
	POS#58 - BEC-3, new feeder to east to tie with SSR-1	365.00	205	$32,749
	Prosser Bay #1 Voltage Reg Replacement	362.01	351	$8,625
	Spaw Phillips 115kV Breaker	355.00	334	$332,470
	Substation Inventory Issued for O&M	592.00		$100,000
	Substation Misc. Aux Equip, Relays/Controls	362.01	148	$25,000
	Vista Substation Feeder Getaways	367.00	296	$50,400
122	**Line Devices**			**$379,600**
	Distribution - Inventory Issued for O&M	595.00		$100,000
	Distribution Regulators	368.20	323	$156,000
	Plymouth Transmission Tie Switch	355.00	300	$40,000
	POS#102 - HED-4 Getaway Reconductor	365.00	288	$9,600
	Switch Upgrade/Additions	355.00	137	$74,000
123	**Transformers & Related Items**			**$1,500,000**
	Services, Set Xfmrs, Run Secondary	368.10	94	$1,500,000
127	**SCADA Communications Equipment**			**$33,059**
	Fiber to Prior #1	380.00	144	$3,059
	Hedges 115kV Metering Point	355.00	169	$30,000
128	**SCADA Substation Equipment**			**$26,739**
	Angus Substation SCADA	380.00	202	$7,002
	Upgrades Fiber to Prior #1	380.00	144	$5,732
	Vista Substation SCADA Upgrades	380.00	202	$7,002

Department 21 Engineering

Activity	Description	GL/FERC	BU Project	Amount
	Zephyr Height SCADA Upgrades	380.00	202	$7,002
132	**Office Equipment**			**$1,000**
	Miscellaneous Office Furniture	588.00		$1,000
TOTAL EXPENSE Engineering				**$16,533,765**

Department 22 Customer Engineering

Activity	Description	GL/FERC	BU Project	Amount
010	**District Overtime Labor**			**$25,000**
	Labor - Overtime - Distribution	588.00		$25,000
011	**All Other District Labor**			**$726,265**
	Clodfelter Reconductor	365.00	324	$2,666
	Dist Base Growth	365.00	140	$97,402
	Dist Base Growth	366.00	140	$88,544
	Dist System Improvements	365.00	141	$150,000
	Distribution Pole Replacement	364.00	160	$1,536
	Labor - Customer Accounting	903.00		$957
	Labor - Distribution	588.00		$62,308
	Labor - Leave	184.30		$101,677
	POS#102 - HED-4 Getaway Reconductor	367.00	288	$2,650
	POS#11 - GUM-4, HED-3, Recond. 3/0, Bowles Rd.	365.00	331	$2,500
	POS#111 - RTA-3 Recond Utilize 4" for 3 phase	367.00	290	$1,250
	POS#115 - RTA-2 to RTA-1 Offload	365.00	291	$6,000
	POS#115 - RTA-2 to RTA-1 Offload	367.00	291	$2,000
	POS#119 - PSR-3 Reconductor	367.00	332	$6,500
	POS#58 - BEC-3, new feeder to east to tie with SSR-1	364.00	205	$2,100
	POS#81 - PHI-8, new feeder north to Cochrane	367.00	297	$2,120
	POS#81 - PHI-8, new feeder north to Cochrane	365.00	297	$2,120
	Repair & Replacement - Cable	367.00	147	$113,350
	Services, Set Xfmrs, Run Secondary	369.10	94	$71,585
	Vista Substation Feeder Getaways	367.00	296	$9,000
014	**Small Tools & Materials**			**$850**
	GPS Batteries - Replacement/Purchase	588.00		$200
	GPS Cables - Replacement/Purchase	588.00		$200
	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 Mtnce for VRS Net (GPS Signals)	588.00		$600

Department 22 Customer Engineering

Activity	Description	GL/FERC	BU Project	Amount
018	**Miscellaneous Construction Expense**			**$16,457**
	Dist Base Growth	361.00	140	$16,457
029	**Personal Computer Supplies & Expenses**			**$1,500**
	Printer / Plotter Paper	588.00		$1,500
033	**Office Supplies & Expenses**			**$1,000**
	Labeling / Binding Supplies	588.00		$1,000
040	**Rents**			**$15,000**
	Maintenance Crossing Permits (Railroad, DOT, etc)	588.00		$10,000
	Pole Contact Fee (us on their poles)	588.00		$5,000
042	**Business Expense and Travel**			**$5,900**
	Design Software User Group (Distribution Design Technician)	588.00		$2,000
	NWPPA E&O (Supervisor/ Distribution Designer)	588.00		$2,600
	Trimble Dimensions GPS Conference (Engineering Technician)	588.00		$1,300
043	**Training Expense & Travel**			**$17,800**
	NESC Code Update or Other Advanced Tech Training (3) (Distribution Designer)	588.00		$3,900
	NWPPA Staking Certification Courses (2) (Technician)	588.00		$8,100
	Technical Training (2) (Engineering Technician)	588.00		$2,000
	Technical Training Class (Distribution Designer)	588.00		$1,900
	Training Admin Staff (Assistant)	588.00		$1,900
061	**Professional Services**			**$175,000**
	Drafting Services - Map Correction Project	588.00		$150,000
	POS#58 - BEC-3, new feeder to east to tie with SSR-1	364.00	205	$4,500
	POS#58 - BEC-3, new feeder to east to tie with SSR-1	365.00	205	$10,500
	Surveying for O&M Support	588.00		$10,000
125	**Land & Land Rights - Electric**			**$27,500**
	County Recording Fees - Easements	362.10	140	$15,000
	New Permits (Crossing, etc.)	362.10	140	$10,000
	Title Reports for Construction Projects	362.10	140	$2,500
132	**Office Equipment**			**$1,000**

Department 22 Customer Engineering

Activity	Description	GL/FERC	BU Project	Amount
	Office Furniture	588.00		$1,000
134	**Tools, Shop & Stores Equipment**			**$5,600**
	GPS, Staking or Other Related Tools and Equipment	588.00		$5,000
	Survey Supplies (Stakes, Flags, etc)	588.00		$600
TOTAL EXPENSE	**Customer Engineering**			**$1,022,472**

Power Management

Tab 6

PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY
2022 Budget
Summary of Expense by Directorate

Power Management

Department(s)		Totals
45	Energy Programs	229,418
51	Power Management	101,551,256
Grand Total Expenses	**Power Management**	$101,780,674

Directorate Budget by Department and Activity
2022 Budget Compared to 2021 Original Budget

Directorate	Power Management

Department	Activity	2022 Budget	2021 Original Budget	Increase / (Decrease)	% Increase / (Decrease)
45 - Energy Programs	9 - Purchased Power	($2,196,000)	($2,265,000)	$69,000	(3.0%)
	11 - All Other District Labor	559,493	629,649	(70,156)	(11.1%)
	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	5,200	1,400	26.9%
	45 - Subscriptions & Publications	150	150	-	0.0%
	60 - Audit Examination - State	34,000	10,500	23,500	223.8%
	61 - Professional Services	15,000	15,000	-	0.0%
	72 - Industry Assoc Assessments	10,375	14,575	(4,200)	(28.8%)
	111 - Electric Vehicle	5,000	-	5,000	N/A
	112 - Residential Conservation Exp	481,000	621,000	(140,000)	(22.5%)
	113 - Commercial Conservation Exp	330,000	334,000	(4,000)	(1.2%)
	114 - Industrial Conservation Expense	480,000	486,000	(6,000)	(1.2%)
	115 - Agriculture Conservation Expense	170,000	104,000	66,000	63.5%
	117 - Residential Appliance & Lighting Program	19,000	19,000	-	0.0%
	118 - Low Income Conservation	300,000	250,000	50,000	20.0%
45 - Energy Programs Total		**229,418**	**238,874**	**(9,456)**	**(4.0%)**
51 - Power Management	9 - Purchased Power	100,887,958	103,431,751	(2,543,793)	(2.5%)
	11 - All Other District Labor	427,271	415,658	11,613	2.8%
	33 - Office Supplies & Expenses	1,500	1,500	-	0.0%
	42 - Business Expense & Travel	19,000	14,200	4,800	33.8%
	43 - Training Expense & Travel	6,000	4,900	1,100	22.4%
	61 - Professional Services	201,200	192,600	8,600	4.5%
	72 - Industry Assoc Assessments	8,327	8,311	16	0.2%
51 - Power Management Total		**101,551,256**	**104,068,920**	**(2,517,664)**	**(2.4%)**
Grand Total		**$101,780,674**	**$104,307,794**	**($2,527,120)**	**(2.4%)**

Department 45 Energy Programs

Activity	Description	GL/FERC	BU Project	Amount
009	**Purchased Power**			**($2,196,000)**
	EEI Reimbursement - Rebates	555.71		($2,196,000)
011	**All Other District Labor**			**$559,493**
	Labor - Conservation Program	908.30		$375,308
	Labor - EV	908.60		$38,493
	Labor - Leave	184.30		$78,329
	Labor - Purchased Power	557.00		$38,493
	Labor - Solar Connections	908.97		$28,870
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**			**$34,000**
	CETA SAO Audit Examination Fees	557.00		$10,000
	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**			**$15,000**
	Legal Expense- K&L Gates, EES CPA Audit Support	557.00		$15,000
072	**Industry Association Assessment**			**$10,375**
	APPA - DEED Program	921.00		$5,000
	Home Builders Association Dues	908.30		$375

Department 45 Energy Programs

Activity	Description	GL/FERC	BU Project	Amount
	Smart Electric Power Alliance (SEPA)	588.00		$0
	White Creek Cash Call	557.00		$4,000
	WREGIS Annual Dues & Fees	555.52		$1,000
111	**Electric Vehicle**			**$5,000**
	Electric Vehicle Rebate	908.60		$5,000
112	**Residential Conservation Expenses**			**$481,000**
	Residential Conservation Expenses	908.30		$481,000
113	**Commercial Conservation Expenses**			**$330,000**
	Commercial Conservation Expenses	908.32		$330,000
114	**Industrial Conservation Expenses**			**$480,000**
	Industrial Conservation Expenses	908.31		$480,000
115	**Irrigation Conservation Expenses**			**$170,000**
	Agriculture /Irrigation Conservation Expenses	908.33		$170,000
117	**Customer Installed Measures**			**$19,000**
	Residential Appliance Expense	908.30		$19,000
118	**Low Income Conservation Expenses**			**$300,000**
	Residential CAC Low Income Program	908.34		$200,000
	Residential District Low Income Program	908.30		$100,000

TOTAL EXPENSE Energy Programs **$229,418**

Department 51 Power Management

Activity	Description	GL/FERC	BU Project	Amount
009	**Purchased Power**			**$100,887,958**
	Ancillary Services (includes TEA Scheduling & Risk Management)	557.00		$1,744,810
	BPA Prepay Credit	555.72		($161,256)
	BPA Transmission	565.05		$9,969,264
	BPA Transmission Ancillary Costs	565.05		$2,322,610
	Frederickson CT Fixed Expense	555.51		$5,381,955
	Frederickson Variable Expense	555.51		$8,931,763
	GTA Delivery Charge	557.00		$12,687
	Irrigation Mitigation	555.01		($3,403,407)
	Load Shaping	555.03		($607,535)
	Non-Slice (Block)	555.01		($5,868,894)
	Other Purchases - Options Premium	555.50		$193,750
	Other Purchases - Power	555.50		$8,663,517
	Packwood	555.50		$464,744
	Renewable Energy Credit Purchases	555.52		$1,194,390
	Renewables (Nine Canyon, White Creek)	555.50		$3,698,423
	Tier 1 Composite Block	555.01		$35,547,042
	Tier 1 Composite Slice	555.00		$32,804,095
011	**All Other District Labor**			**$427,271**
	Labor - Leave	184.30		$59,818
	Labor - Purchased Power	557.00		$367,453
033	**Office Supplies & Expenses**			**$1,500**
	Misc Office Supplies	557.00		$1,500
042	**Business Expense and Travel**			**$19,000**
	BPA, PPC, TEA, PNUCC (Director/Senior Engineer/ Analyst)	557.00		$14,000
	Utility Analytics Institute (Director/Senior Engineer/Analyst)	557.00		$5,000
043	**Training Expense & Travel**			**$6,000**
	NWPPA, APPA, AMA (Director/Senior Engineer/Analyst/Specialist)	557.00		$6,000
061	**Professional Services**			**$201,200**
	Power Contracting, RMC Audit	557.00		$15,000
	Slice Implementation Group Assessment via PPC	557.00		$2,000
	TEA Consulting	557.00		$184,200

Department 51 Power Management

Activity	Description	GL/FERC	BU Project	Amount
072	**Industry Association Assessment**			**$8,327**
	GMEI Maintenance Fee	557.00		$125
	IEEE (Senior Engineer)	557.00		$116
	Notary (Specialist)	557.00		$45
	OATI Web Registry Fee	557.00		$350
	PE License (Senior Engineer)	557.00		$241
	Peak Load Management Alliance (PLMA)	557.00		$2,450
	PPC Slice Assessment Cash Call	557.00		$5,000

TOTAL EXPENSE Power Management **$101,551,256**

Operations

Tab 6

PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY
2022 Budget
Summary of Expense by Directorate

Operations

Department(s)		Totals
31	Operations	1,085,849
32	Supt. of Transmission & Distribution	6,268,743
33	Supt. of Operations	695,386
34	Meter Shop	1,366,220
35	Transformer Shop	1,006,646
37	Automotive Shop	818,172
38	Support Services	2,686,757
39	Warehouse	460,300
Grand Total Expenses	**Operations**	$14,388,072

Directorate Budget by Department and Activity
2022 Budget Compared to 2021 Original Budget

Directorate	Operations

Department	Activity	2022 Budget	2021 Original Budget	Increase / (Decrease)	% Increase / (Decrease)
31 - Operations	11 - All Other District Labor	$951,880	$804,253	$147,627	18.4%
	33 - Office Supplies & Expenses	4,000	4,000	-	0.0%
	42 - Business Expense & Travel	1,900	1,900	-	0.0%
	43 - Training Expense & Travel	2,000	2,000	-	0.0%
	45 - Subscriptions & Publications	500	500	-	0.0%
	61 - Professional Services	106,000	153,000	(47,000)	(30.7%)
	72 - Industry Assoc Assessments	845	940	(95)	(10.1%)
	104 - Other Employee Costs	13,724	58,844	(45,120)	(76.7%)
	132 - Office Equipment	5,000	5,000	-	0.0%
31 - Operations Total		**1,085,849**	**1,030,437**	**55,412**	**5.4%**
32 - Supt of Transm & Distribution	10 - District Overtime Labor	680,000	601,917	78,083	13.0%
	11 - All Other District Labor	3,994,092	3,728,948	265,144	7.1%
	12 - Materials & Supplies	190,000	-	190,000	N/A
	14 - Small Tools & Materials	71,500	88,000	(16,500)	(18.8%)
	17 - Operation & Maintenance Exp	30,000	30,000	-	0.0%
	18 - Misc Construction Expense	67,500	67,500	-	0.0%
	19 - Tree Trimming - Contract	866,000	825,000	41,000	5.0%
	20 - Off-the-Dock Labor	10,000	10,000	-	0.0%
	21 - Elec Construction Contracts	222,000	110,000	112,000	101.8%
	39 - Maint of Equipment	15,000	15,000	-	0.0%
	42 - Business Expense & Travel	7,100	7,950	(850)	(10.7%)
	43 - Training Expense & Travel	33,001	20,701	12,300	59.4%
	50 - Telephone & Answering Services	12,000	10,000	2,000	20.0%
	61 - Professional Services	10,000	10,000	-	0.0%
	104 - Other Employee Costs	48,050	45,050	3,000	6.7%
	134 - Tools, Shop & Stores Equipment	12,500	241,500	(229,000)	(94.8%)
32 - Supt of Transm & Distribution Total		**6,268,743**	**5,811,566**	**457,177**	**7.9%**
33 - Supt of Operations	10 - District Overtime Labor	25,600	21,689	3,911	18.0%
	11 - All Other District Labor	177,236	172,485	4,751	2.8%
	17 - Operation & Maintenance Exp	52,500	48,500	4,000	8.2%
	40 - Rents	177,550	173,300	4,250	2.5%
	42 - Business Expense & Travel	3,500	-	3,500	N/A
	43 - Training Expense & Travel	10,500	7,000	3,500	50.0%
	50 - Telephone & Answering Services	115,000	112,000	3,000	2.7%
	61 - Professional Services	133,000	-	133,000	N/A
	72 - Industry Assoc Assessments	500	-	500	N/A
33 - Supt of Operations Total		**695,386**	**534,974**	**160,412**	**30.0%**
34 - Meter Shop	10 - District Overtime Labor	35,600	28,712	6,888	24.0%
	11 - All Other District Labor	680,340	639,051	41,289	6.5%
	14 - Small Tools & Materials	4,000	4,000	-	0.0%
	17 - Operation & Maintenance Exp	7,500	7,500	-	0.0%
	39 - Maint of Equipment	10,000	10,000	-	0.0%
	42 - Business Expense & Travel	1,500	1,500	-	0.0%
	43 - Training Expense & Travel	12,780	10,800	1,980	18.3%
	45 - Subscriptions & Publications	500	500	-	0.0%
	124 - Meters & Related Items	550,000	200,000	350,000	175.0%
	127 - SCADA Communications Equipment	5,000	5,000	-	0.0%
	128 - SCADA Substation Equipment	5,000	5,000	-	0.0%
	135 - Laboratory & Test Equipment	49,000	85,000	(36,000)	(42.4%)
	136 - Communication Equipment	5,000	5,000	-	0.0%
34 - Meter Shop Total		**1,366,220**	**1,002,063**	**364,157**	**36.3%**
35 - Transformer Shop	10 - District Overtime Labor	46,500	42,324	4,176	9.9%
	11 - All Other District Labor	682,724	663,919	18,806	2.8%
	14 - Small Tools & Materials	10,500	8,000	2,500	31.3%
	17 - Operation & Maintenance Exp	133,922	133,922	-	0.0%
	18 - Misc Construction Expense	10,000	10,000	-	0.0%
	42 - Business Expense & Travel	4,300	4,300	-	0.0%
	43 - Training Expense & Travel	8,200	8,200	-	0.0%
	45 - Subscriptions & Publications	500	500	-	0.0%
	135 - Laboratory & Test Equipment	110,000	33,755	76,245	225.9%
35 - Transformer Shop Total		**1,006,646**	**904,920**	**101,727**	**11.2%**
37 - Automotive Shop	10 - District Overtime Labor	9,350	8,755	595	6.8%
	11 - All Other District Labor	367,622	358,362	9,260	2.6%
	14 - Small Tools & Materials	12,100	12,100	-	0.0%
	15 - Transportation Expense-Gas&Oil	225,000	225,000	-	0.0%

Department	Activity	2022 Budget	2021 Original Budget	Increase / (Decrease)	% Increase / (Decrease)
	16 - Transportation Exp-Repair&Main	192,000	192,000	-	0.0%
	17 - Operation & Maintenance Exp	1,000	1,000	-	0.0%
	39 - Maint of Equipment	6,000	6,000	-	0.0%
	42 - Business Expense & Travel	1,200	1,200	-	0.0%
	43 - Training Expense & Travel	3,900	3,900	-	0.0%
37 - Automotive Shop Total		**818,172**	**808,317**	**9,855**	**1.2%**
38 - Support Services	10 - District Overtime Labor	28,000	20,806	7,194	34.6%
	11 - All Other District Labor	435,133	396,018	39,115	9.9%
	14 - Small Tools & Materials	3,000	3,000	-	0.0%
	17 - Operation & Maintenance Exp	17,500	17,500	-	0.0%
	23 - Environmental	26,000	22,000	4,000	18.2%
	27 - Personal Computer Software	3,500	3,000	500	16.7%
	37 - Grounds Care	94,524	93,000	1,524	1.6%
	38 - Maint of Bldg & Improvements	307,400	300,500	6,900	2.3%
	39 - Maint of Equipment	5,000	5,000	-	0.0%
	42 - Business Expense & Travel	2,400	3,700	(1,300)	(35.1%)
	43 - Training Expense & Travel	7,500	7,500	-	0.0%
	45 - Subscriptions & Publications	500	500	-	0.0%
	51 - Water,Garbage,Irrigation&Other	79,000	60,000	19,000	31.7%
	61 - Professional Services	16,500	16,500	-	0.0%
	104 - Other Employee Costs	1,800	1,800	-	0.0%
	131 - Structures & Improvements	552,000	498,000	54,000	10.8%
	133 - Transportation Equipment	1,107,000	950,000	157,000	16.5%
38 - Support Services Total		**2,686,757**	**2,398,824**	**287,933**	**12.0%**
39 - Warehouse	13 - Store Expense - Non Labor	25,000	25,000	-	0.0%
	14 - Small Tools & Materials	4,000	4,000	-	0.0%
	17 - Operation & Maintenance Exp	398,000	78,000	320,000	410.3%
	42 - Business Expense & Travel	1,000	1,000	-	0.0%
	43 - Training Expense & Travel	3,300	3,300	-	0.0%
	104 - Other Employee Costs	29,000	29,000	-	0.0%
39 - Warehouse Total		**460,300**	**140,300**	**320,000**	**228.1%**
Grand Total		**$14,388,072**	**$12,631,400**	**$1,756,672**	**13.9%**

Department 31 Operations

Activity	Description	GL/FERC	BU Project	Amount
011	**All Other District Labor**			**$951,880**
	Labor - Admin General	920.00		$78,004
	Labor - Automotive Shop	184.12		$22,572
	Labor - Customer Accounting	903.00		$21,822
	Labor - Distribution	588.00		$468,670
	Labor - Inventory	163.00		$19,927
	Labor - Leave	184.30		$133,263
	POS#102 - HED-4 Getaway Reconductor	367.00	288	$10,600
	POS#111 - RTA-3 Recond Utilize 4" for 3 phase	367.00	290	$12,500
	POS#115 - RTA-2 to RTA-1 Offload	367.00	291	$25,000
	POS#115 - RTA-2 to RTA-1 Offload	365.00	291	$50,000
	POS#81 - PHI-8, new feeder north to Cochrane	365.00	297	$42,400
	POS#81 - PHI-8, new feeder north to Cochrane	367.00	297	$27,216
	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**			**$1,900**
	Travel (Senior Director/Assistant)	588.00		$1,900
043	**Training Expense & Travel**			**$2,000**
	Training (Senior Director/Executive Assistant)	588.00		$2,000
045	**Subscriptions & Publications**			**$500**
	Publications	588.00		$500
061	**Professional Services**			**$106,000**
	Safety Committee Consultant	588.00		$10,000
	Safety Coordinator	588.00		$96,000
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	580.00		$50

Department 31 Operations

Activity	Description	GL/FERC	BU Project	Amount
	PE License (Senior Director)	588.00		$150
	UDIG (Superintendent)	588.00		$50
104	**Other Employee Costs**			**$13,724**
	AED Pads	588.00		$1,500
	CDL Endorsement Reimbursement - Ops	588.00		$1,224
	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
132	**Office Equipment**			**$5,000**
	Projected Capital Equip - Ops	390.00	66	$5,000
TOTAL EXPENSE	**Operations**			**$1,085,849**

Department 32 Supt. of Transmission & Distribution

Activity	Description	GL/FERC	BU Project	Amount
010	**District Overtime Labor**			**$680,000**
	Labor - Overtime - Distribution	588.00		$680,000
011	**All Other District Labor**			**$3,994,092**
	Clodfelter Reconductor	365.00	324	$30,000
	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		$3,633
	Labor - Broadband	935.20		$7,705
	Labor - Customer Accounting	903.00		$89,870
	Labor - Distribution	588.00		$1,729,947
	Labor - Leave	184.30		$557,073
	Labor - Transmission	566.00		$13,963
	Meal Reimbursement	588.00		$15,000
	POS#11 - GUM-4, HED-3, Recond. 3/0, Bowles Rd.	365.00	331	$65,000
	POS#119 - PSR-3 Reconductor	367.00	332	$11,250
	POS#119 - PSR-3 Reconductor	365.00	332	$36,000
	POS#38 - VIS-1 to Vis-6 Across Quinalt	367.00	152	$29,680
	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
	Southridge S1,S2,S3 Feeder Getaways	367.00	207	$5,000
	Trouble Orders	365.00	149	$50,000
	Vista Substation Feeder Getaways	367.00	296	$331,141
012	**Materials & Supplies**			**$190,000**
	Trouble Orders	365.00	149	$190,000
014	**Small Tools & Materials**			**$71,500**
	Cut-off Saw	588.00		$1,500
	Small Tool Expense	588.00		$70,000
017	**Operation & Maintenance Expense**			**$30,000**
	Other Dist Exp	588.00		$30,000
018	**Miscellaneous Construction Expense**			**$67,500**

Department 32 Supt. of Transmission & Distribution

Activity	Description	GL/FERC	BU Project	Amount
	Misc. Construction Capital Expense - Line Department	364.00	60	$67,500
019	**Tree Trimming - Contract**			**$866,000**
	Herbicide	593.40		$1,000
	Tree Replacement	593.40		$20,000
	Tree Trimming-Contract	593.40		$845,000
020	**Off-the-Dock Labor**			**$10,000**
	Pole Stubbing	364.00	64	$10,000
021	**Electric Construction Contracts**			**$222,000**
	Pole Testing	593.10		$172,000
	Steel Pole Testing	593.10		$50,000
039	**Maintenance of Equipment**			**$15,000**
	Maint of Tools	588.00		$15,000
042	**Business Expense and Travel**			**$7,100**
	E&O (2)	588.00		$2,500
	Supt Business (2)	588.00		$2,500
	Tree Coordinator Business Exp	588.00		$2,100
043	**Training Expense & Travel**			**$33,001**
	Lineman Rodeo	588.00		$1
	NESC	588.00		$12,000
	Pre-Apprentice In-House Interest (1-3)	588.00		$8,500
	Training (Line Apprentices)	588.00		$12,500
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**			**$48,050**
	FR Clothing (New Hires)	588.00		$5,250
	FR Clothing (Rain Gear)	588.00		$1,800
	FR Clothing and Gloves (Current Employees)	588.00		$41,000

Department 32 Supt. of Transmission & Distribution

Activity	Description	GL/FERC	BU Project	Amount
134	**Tools, Shop & Stores Equipment**			**$12,500**
	15-Ton Press	394.00	284	$5,500
	Infrared Camera	394.00	335	$7,000
TOTAL EXPENSE	**Supt. of Transmission & Distribution**			**$6,268,743**

Department 33 Supt. of Operations

Activity	Description	GL/FERC	BU Project	Amount
010	**District Overtime Labor**			**$25,600**
	Labor - Overtime - Distribution	588.00		$25,600
011	**All Other District Labor**			**$177,236**
	Labor - Admin General	920.00		$137
	Labor - Customer Accounting	903.00		$2,648
	Labor - Distribution	588.00		$149,638
	Labor - Leave	184.30		$24,813
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**			**$177,550**
	800 MHz Usage Fee - BCES	588.00		$37,000
	Badger Mtn Site AMI Fee	935.00		$3,700
	DNR Billing - Jump Off Joe	935.02		$42,950
	Microwave Circuit Billing - BCES	588.00		$35,000
	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**			**$10,500**
	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**			**$133,000**
	Communications Contracting	588.00		$25,000

Department 33 Supt. of Operations

Activity	Description	GL/FERC	BU Project	Amount
	Meter Change Out/Replacement Program	370.00	336	$80,000
	Meter Testing	586.10		$28,000
072	**Industry Association Assessment**			**$500**
	Electrician License Renewal	588.00		$500
TOTAL EXPENSE Supt. of Operations				**$695,386**

Department 34 Meter Shop

Activity	Description	GL/FERC	BU Project	Amount
010	**District Overtime Labor**			**$35,600**
	Labor - Overtime - Distribution	588.00		$35,600
011	**All Other District Labor**			**$680,340**
	Angus Bay #1 Feeder Breaker & Relay Replacement	362.01	318	$26,939
	Angus Bay #2 Feeder Breaker & Bay Relay Replacement	362.01	287	$26,939
	Angus Substation Scada Ugrades	380.00	202	$23,990
	Fiber to Prior #1	380.00	144	$2,699
	Hedges 115kV Metering Point	355.00	169	$5,000
	Labor - Admin General	920.00		$547
	Labor - Customer Accounting	903.00		$5,056
	Labor - Distribution	588.00		$397,542
	Labor - Leave	184.30		$95,248
	Prosser Bay #1 Voltage Reg Replacement	362.01	351	$13,018
	Services, Set Xfmrs, Run Secondary	370.00	94	$56,127
	Vista Substation Scada Ugrades	380.00	202	$15,850
	Zephyr Height SCADA Upgrades	380.00	202	$11,385
014	**Small Tools & Materials**			**$4,000**
	Small Tool Expense	597.00		$4,000
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**			**$12,780**
	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

Department 34 Meter Shop

Activity	Description	GL/FERC	BU Project	Amount
	Training (Meterman Apprentice)	588.00		$6,480
045	**Subscriptions & Publications**			**$500**
	Subscription & Publications	588.00		$500
124	**Meters & Related Items**			**$550,000**
	Meter Change-outs	370.00	336	$350,000
	Meters	370.00	86	$200,000
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**			**$49,000**
	CT Verification Tester	395.00	273	$34,000
	Power Quality Recorder	395.00	337	$15,000
136	**Communication Equipment**			**$5,000**
	Communications Equipment/800 MHz Radios	397.00	49	$5,000

TOTAL EXPENSE Meter Shop **$1,366,220**

Department 35 Transformer Shop

Activity	Description	GL/FERC	BU Project	Amount
010	**District Overtime Labor**			**$46,500**
	Labor - Overtime - Distribution	588.00		$46,500
011	**All Other District Labor**			**$682,724**
	Angus Bay #1 Feeder Breaker & Relay Replacement	362.01	318	$8,187
	Angus Bay #2 Feeder Breaker & Bay Relay Replacement	362.01	287	$8,187
	Angus Substation Scada Ugrades	380.00	202	$12,281
	Fiber to Prior #1	380.00	144	$1,842
	Hedges 115kV Metering Point	355.00	169	$5,000
	Kennewick Battery Bank Replacement	362.01	330	$4,000
	Labor - Broadband	935.20		$1,194
	Labor - Distribution	588.00		$533,187
	Labor - Leave	184.30		$95,581
	POS#102 - HED-4 Getaway Reconductor	367.00	288	$5,300
	Prosser Bay #1 Voltage Reg Replacement	362.01	351	$1,725
	Vista Substation Scada Ugrades	380.00	202	$6,240
014	**Small Tools & Materials**			**$10,500**
	Paint Sprayer	595.00		$2,500
	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**

Department 35 Transformer Shop

Activity	Description	GL/FERC	BU Project	Amount
	Cooper Reg Workshop	588.00		$1,600
	Doble Training Onsite	588.00		$1,600
	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**			**$110,000**
	Hand Held TTR	395.00	339	$5,000
	Mobile Spare Battery Bank/Trailer and Equipment	395.00	340	$64,000
	Oil Dielectric Tester	395.00	338	$15,000
	TTR and Winding Resistance Tester	395.00	276	$26,000
TOTAL EXPENSE	**Transformer Shop**			**$1,006,646**

Department 37 Automotive Shop

Activity	Description	GL/FERC	BU Project	Amount
010	**District Overtime Labor**			**$9,350**
	Labor - Overtime - Auto Shop	184.11		$9,350
011	**All Other District Labor**			**$367,622**
	Labor - Automotive Shop	184.12		$307,975
	Labor - Distribution	588.00		$8,180
	Labor - Leave	184.30		$51,467
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**			**$225,000**
	Transportation Expense - Gas and Oil	184.11		$225,000
016	**Transportation Expense - Repair & Maintenance**			**$192,000**
	Fire Extinguishers on Vehicles	184.12		$2,000
	Transportation Expense	184.12		$180,000
	Vehicle Detailing	184.12		$10,000
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**			**$818,172**

Department 38 Support Services

Activity	Description	GL/FERC	BU Project	Amount
010	**District Overtime Labor**			**$28,000**
	Labor - Overtime - Inventory	163.00		$28,000
011	**All Other District Labor**			**$435,133**
	Labor - Admin General	920.00		$60,745
	Labor - Broadband	935.20		$255
	Labor - Distribution	588.00		$91,263
	Labor - Inventory	163.00		$219,355
	Labor - Leave	184.30		$60,919
	Labor - Transmission	566.00		$2,596
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	588.00		$3,000
	Kennewick	921.00		$48,500
	Property Clean-Up	588.00		$4,000
	Prosser	935.04		$16,024
	Substations	588.00		$6,500
	Tree Maintenance	598.10		$12,500
038	**Maint of Bldg & Improvements - General**			**$307,400**
	Carpet Cleaning (Admin)	935.00		$5,000

Department 38 Support Services

Activity	Description	GL/FERC	BU Project	Amount
	Carpet Cleaning (Operations)	588.00		$4,500
	Fire Extinguishers	588.00		$3,000
	Floor Mats (Admin)	935.00		$3,000
	Floor Mats (Operations)	588.00		$8,000
	General Maintenance (Admin)	935.00		$22,000
	General Maintenance (Operations)	588.00		$22,000
	General Maintenance (Prosser)	935.04		$20,000
	Graffiti Removal	588.00		$5,000
	HVAC (Admin)	935.00		$25,000
	HVAC (Operations)	588.00		$15,000
	HVAC (Prosser)	935.04		$2,000
	Janitorial - Extra work as needed	588.00		$5,000
	Janitorial Services (Admin)	935.00		$60,500
	Janitorial Services (Operations)	588.00		$50,000
	Janitorial Services (Prosser)	935.04		$18,400
	Painting (Admin)	935.00		$6,000
	Painting (Operations)	598.10		$6,000
	Security (Radio Sites)	598.10		$22,000
	Wireless Expansion (Operations)	588.00		$5,000
039	**Maintenance of Equipment**			**$5,000**
	Maintenance	935.00		$5,000
042	**Business Expense and Travel**			**$2,400**
	Audit Disposal Facility	588.00		$1,000
	Green House Gas Meeting	588.00		$300
	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
045	**Subscriptions & Publications**			**$500**
	Subscription & Publications	588.00		$500

Department 38 Support Services

Activity	Description	GL/FERC	BU Project	Amount
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**			**$552,000**
	Fac. Physical Security Audit Recommendations Phase 1	390.00	305	$250,000
	Operations Security Wall	390.00	326	$150,000
	Replace Asphalt Courtyard Parking	390.00	344	$120,000
	Replace Drinking Fountains Admin	390.00	345	$7,000
	Security Manager's Office Remodel	390.00	305	$25,000
133	**Transportation Equipment**			**$1,107,000**
	1000KCM Cable Payout Trailer	392.00	348	$100,000
	Bucket Truck - Prosser (Replacing #73)	392.00	347	$300,000
	Engineering Half ton Pick Up (Replace #120)	392.00	343	$70,000
	Forklift for Transformer Shop	392.00	285	$60,000
	Kennewick Bucket Truck (Replace #149)	392.00	342	$300,000
	Overhead Puller	392.00	346	$200,000
	Truck #180 - Insurance Reimbursement - Superintendent of Operations	392.00	320	$42,000
	Water Tank for Fire Mitigation Program	392.00	341	$35,000

TOTAL EXPENSE Support Services **$2,686,757**

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
2022 Budget
Summary of Expense by Directorate

Non-Departmental

Department(s)		Totals
98	Non-Departmental Rev/Exp	36,629,992
Grand Total Expenses	**Non-Departmental**	$36,629,992

Directorate Budget by Department and Activity
2022 Budget Compared to 2021 Original Budget

Directorate	No Directorate

Department	Activity	2022 Budget	2021 Original Budget	Increase / (Decrease)	% Increase / (Decrease)
98 - Non-Departmental Rev/Exp	11 - All Other District Labor	($100,000)	($100,000)	$0	0.0%
	12 - Materials & Supplies	-	64,500	(64,500)	(100.0%)
	20 - Off-the-Dock Labor	-	150,500	(150,500)	(100.0%)
	80 - Public Utility & Excise Tax	5,477,000	5,327,000	150,000	2.8%
	81 - State Privilege Tax	2,797,000	2,720,000	77,000	2.8%
	82 - City Occupation Taxes	6,377,000	6,184,000	193,000	3.1%
	88 - Payroll Taxes	1,241,105	1,182,365	58,740	5.0%
	101 - Employee Benefits	5,403,233	5,361,679	41,554	0.8%
	150 - Principal	3,195,000	3,115,000	80,000	2.6%
	151 - Interest	2,013,214	2,073,130	(59,916)	(2.9%)
	301 - Depreciation	10,926,440	10,468,186	458,254	4.4%
	545 - Other Electric Revenue	(700,000)	(700,000)	-	0.0%
98 - Non-Departmental Rev/Exp Total		**36,629,992**	**35,846,360**	**783,632**	**2.2%**
Grand Total		**$36,629,992**	**$35,846,360**	**$783,632**	**2.2%**

Department 98 Non-Departmental Rev/Exp

Activity	Description	GL/FERC	BU Project	Amount
011	**All Other District Labor**			**($100,000)**
	Labor Under Run / Carry Over - Distribution	588.00		($100,000)
080	**State Public Utility Tax & Other Excise Taxes**			**$5,477,000**
	Other Excise Tax	408.08		$92,000
	Public Utility Tax	408.06		$5,385,000
081	**State Privilege Tax**			**$2,797,000**
	Privilege Tax	408.05		$2,797,000
082	**City Occupation Taxes**			**$6,377,000**
	City Occupation Tax	408.07		$6,377,000
088	**Payroll Taxes**			**$1,241,105**
	Medicare	184.34		$238,395
	Social Security	184.34		$1,002,710
101	**Employee Benefits**			**$5,403,233**
	Change in PL	184.30		$200,000
	Deferred Compensation	184.40		$448,988
	Dental	184.36		$209,951
	Life Insurance	184.32		$45,000
	Medical	184.33		$2,315,442
	PERS	184.35		$1,632,837
	State Industrial (L&I)	184.31		$138,382
	STD Admin Fee	184.39		$3,000
	Unemployment	184.38		$12,000
	VEBA Wellness ($200 per employee per month)	184.40		$360,000
	Vision	184.44		$37,633
150	**Principal**			**$3,195,000**
	Debt Service - Principal	125.00		$3,195,000
151	**Interest**			**$2,013,214**
	Amortization of Bond Loss/Gain on Defeasance	428.00		$32,026
	Amortization of Bond Premium	429.00		($434,850)
	BABs Subsidy for 2010 Bonds	427.01		($370,448)

Department 98 Non-Departmental Rev/Exp

Activity	Description	GL/FERC	BU Project	Amount
	Bond Interest Expense	427.00		$2,786,486
301	**Depreciation Expense**			**$10,926,440**
	Depr - Broadband	403.61		$902,400
	Depr - Distribution	403.60		$7,470,740
	Depr - General Plant	403.70		$1,810,000
	Depr - Generation	403.40		$88,300
	Depr - Transmission	403.50		$266,700
	Depr - Transportation Equipment	184.12		$388,300
545	**Other Electric Revenue**			**($700,000)**
	Joint Use Deficiency Corrections - Pole Attachment Reimbursements	590.10		($700,000)

TOTAL EXPENSE Non-Departmental Rev/Exp **$36,629,992**

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:

*Klein 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 and 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/Embarq - 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

2022 BUDGET
FINANCIAL PLAN - KEY ASSUMPTIONS

The Financial Plan for 2022 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 2022 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 27, 2021 (see Tab 8).
- Sales for Resale are consistent with the 2022 Power Supply Plan.

POWER & TRANSMISSION COSTS *(see Tab 10, 2022 Power Supply Plan, Section 4, for more details)*

- **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 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 2022.
  - No slice true-up credit is assumed.
  - Power cost assumptions include the Frederickson contract cost through the contract period.
  - 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.

FINANCIAL PLAN - KEY ASSUMPTIONS
(CONTINUED)

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
2022 Budget

	2020 Actual	2021 Forecast	2022 Budget
Revenue Action Budget Assumption *For planning purposes only, any future rate action would require Commission approval*			**0.00%**
OPERATING REVENUES			
Energy Sales - Retail	$ 133,281,504	$ 137,014,103	$ 136,768,696
Energy Secondary Market Sales	16,024,638	32,676,464	21,118,273
Transmission of Power for Others	1,443,001	884,366	1,100,000
Broadband Revenue	2,799,123	2,921,407	3,082,142
Other Electric Revenue	1,381,032	1,415,720	1,409,982
TOTAL OPERATING REVENUES	154,929,298	174,912,060	163,479,093
OPERATING EXPENSES			
Purchased Power	83,898,194	102,386,144	86,839,587
Purchased Transmission & Ancillary Services	14,638,284	14,865,828	15,261,004
Conservation	346,063	329,312	252,810
Total Power Supply	98,882,541	117,581,284	102,353,401
Transmission Operation & Maintenance	114,119	164,242	171,866
Distribution Operation & Maintenance	10,537,318	12,343,707	12,530,301
Broadband Expense	1,161,923	1,166,295	1,205,854
Customer Accounting, Collections & Information	4,329,302	4,705,890	4,751,609
Administrative & General	7,365,965	8,412,372	9,119,546
Subtotal before Taxes & Depreciation	23,508,627	26,792,506	27,779,175
Taxes	13,969,670	14,774,000	14,651,000
Depreciation & Amortization	10,339,875	10,172,186	10,538,140
Total Other Operating Expenses	47,818,172	51,738,692	52,968,315
TOTAL OPERATING EXPENSES	146,700,713	169,319,976	155,321,716
OPERATING INCOME (LOSS)	8,228,585	5,592,084	8,157,377
NONOPERATING REVENUES & EXPENSES			
Interest Income	360,470	430,000	100,000
Unrealized Gain/(Loss) on Investments	(5,600)	-	-
Other Income (includes BABs subsidy)	675,315	376,070	412,198
Interest Expense	(2,633,566)	(2,907,621)	(2,826,486)
Debt Premium/Discount & Expense Amortization	(125,928)	418,421	402,824
TOTAL NONOPERATING REVENUES & EXPENSES	(1,729,309)	(1,683,130)	(1,911,464)
NET INCOME (LOSS) BEFORE CONTRIBUTIONS	6,499,276	3,908,954	6,245,913
CAPITAL CONTRIBUTIONS	2,206,345	2,826,924	2,599,537
CHANGE IN NET ASSETS	**$ 8,705,621**	**$ 6,735,878**	**$ 8,845,450**
CAPITAL REQUIREMENTS PLAN (Gross)	**$ 16,946,183**	**$ 19,937,260**	**$ 26,449,568**
UNRESTRICTED RESERVES (End of Year)	**$ 50,524,168**	**$ 54,992,786**	**$ 45,628,769**

Liquidity Measures
Public Utility District No. 1 of Benton County
2022 Budget

Unrestricted Reserves	2020 Actual	2021 Forecast	2022 Budget
BEGINNING BALANCE	$ 41,485,679	$ 50,524,168	$ 54,992,786
Revenues (excluding sales for resale)	138,491,844	142,157,300	141,773,018
Capital Contributions	2,206,345	2,826,924	2,599,537
Operating Expenses*	(120,015,628)	(125,086,960)	(122,565,303)
Amortization of White Creek	578,400	578,400	578,400
Debt Service and LOC	(6,195,835)	(6,035,376)	(6,038,843)
Gross Capital	(16,946,183)	(19,937,260)	(26,449,568)
BPA Prepay	438,742	438,742	438,742
Bond Proceeds to Reimburse Capital	10,480,804	9,526,848	-
Carry Over/Timing of Cash Flow Expenditures	-	-	300,000
ENDING BALANCE	**$ 50,524,168**	**$ 54,992,786**	**$ 45,628,769**

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

Days Cash on Hand	2020 Actual	2021 Forecast	2022 Budget
Unrestricted Reserves	$ 50,524,168	$ 54,992,786	$ 45,628,769
Construction Account	9,526,848	-	-
Total Reserves	$ 60,051,016	$ 54,992,786	$ 45,628,769
Gross Power Expense	98,882,541	117,581,284	102,353,401
Non-Power Operating Expenses	47,818,172	51,738,692	52,968,315
Depreciation	(10,339,875)	(10,172,186)	(10,538,140)
Amortization of White Creek/BPA Prepay	(1,017,142)	(1,017,142)	(1,017,142)
Operating Expenses (cash basis)	$ 135,343,696	$ 158,130,648	$ 143,766,434
DAYS CASH ON HAND (Unrestricted Reserves)	**137**	**127**	**116**
DAYS CASH ON HAND (Construction Account)	**26**	**0**	**0**
TOTAL DAYS CASH ON HAND	**163**	**127**	**116**

Days Liquidity on Hand	2020 Actual	2021 Forecast	2022 Budget
Unrestricted Reserves + $10M LOC	$ 60,524,168	$ 64,992,786	$ 55,628,769
Operating Expenses (cash basis)	$ 135,343,696	$ 158,130,648	$ 143,766,434
DAYS LIQUIDITY ON HAND	**163**	**150**	**141**

Debt Measures
Public Utility District No. 1 of Benton County
2022 Budget

Debt Service Coverage	2020 Actual	2021 Forecast	2022 Budget
Change in Net Assets	$ 8,705,621	$ 6,735,878	$ 8,845,450
Depreciation	10,339,875	10,172,186	10,538,140
Amortization of White Creek	578,400	578,400	578,400
Amortization of BPA Prepay	438,742	438,742	438,742
GASB 68 Pension Expense	(1,393,009)	-	-
Interest Expense	2,759,494	2,489,200	2,423,662
Funds Available for Debt Service (FADS)	$ 21,429,123	$ 20,414,406	$ 22,824,394
Debt Service	$ 6,154,946	$ 5,995,376	$ 5,998,843
DSC with capital contributions (Target = 2.0)	**3.48**	**3.41**	**3.80**
DSC without capital contributions (Target = 1.75)	**3.12**	**2.93**	**3.37**

Fixed Charge Coverage	2020 Actual	2021 Forecast	2022 Budget
Change in Net Assets	$ 8,705,621	$ 6,735,878	$ 8,845,450
Depreciation	10,339,875	10,172,186	10,538,140
Amortization of White Creek	578,400	578,400	578,400
Amortization of BPA Prepay	438,742	438,742	438,742
GASB 68 Pension Expense	(1,393,009)	-	-
Interest Expense	2,759,494	2,489,200	2,423,662
Frederickson Fixed Costs	7,937,532	7,547,242	5,381,955
36% of BPA Power & Transmission	25,580,716	25,843,217	25,425,304
Adjusted FADS	$ 54,947,371	$ 53,804,865	$ 53,631,653
Debt Service	$ 6,154,946	$ 5,995,376	$ 5,998,843
Frederickson Fixed Costs	7,937,532	7,547,242	5,381,955
36% of BPA Power & Transmission	25,580,716	25,843,217	25,425,304
Debt Service & Fixed Charges	$ 39,673,194	$ 39,385,835	$ 36,806,102
FCC Ratio (Target = 1.3)	**1.38**	**1.37**	**1.46**

Debt Ratio	2020 Actual	2021 Forecast	2022 Budget
Revenue Bonds Outstanding	$ 63,310,000	$ 60,195,000	$ 57,000,000
Capitalization (bonds + net assets)	$ 207,623,785	$ 211,244,664	$ 216,996,513
Debt Ratio	**30%**	**28%**	**26%**

Public Utility District No. 1 Of Benton County, Washington
2021 - 2025 Retail Revenue and Kilowatt Hours (kWh) Forecast
(October 2021 Forecast)

Forecast - 2021	**Revenues**	**kWh**
Residential	$64,115,366	731,663,227
Small Gen. Service	9,122,295	119,052,775
Medium Gen. Service	13,296,491	182,987,349
Large Gen. Service	15,394,468	236,023,103
Large Industrial	3,490,897	64,668,816
Small Ag Irrigation	1,131,816	16,590,637
Large Ag. Irrigation	25,888,090	463,196,507
Street Lighting	207,637	2,393,618
Security Lighting	251,861	863,878
Unmetered Accounts	212,976	3,001,913
TOTAL	**$133,111,897**	**1,820,441,825**

Forecast - 2022	**Revenues**	**kWh**
Residential	$64,716,067	737,094,595
Small Gen. Service	9,552,567	125,424,013
Medium Gen. Service	13,157,828	182,857,189
Large Gen. Service	14,718,435	228,725,036
Large Industrial	3,392,076	63,667,576
Small Ag Irrigation	1,038,700	14,922,090
Large Ag. Irrigation	23,366,618	418,317,496
Street Lighting	219,864	2,544,538
Security Lighting	268,556	902,903
Unmetered Accounts	217,222	3,059,460
TOTAL	**$130,647,933**	**1,777,514,896**

Forecast - 2023	**Revenues**	**kWh**
Residential	$65,505,731	745,526,294
Small Gen. Service	9,614,421	126,142,316
Medium Gen. Service	13,187,931	183,995,664
Large Gen. Service	14,727,560	228,827,860
Large Industrial	3,396,473	63,750,453
Small Ag Irrigation	1,032,857	14,837,454
Large Ag. Irrigation	23,600,954	418,104,996
Street Lighting	219,864	2,544,538
Security Lighting	268,556	902,903
Unmetered Accounts	217,636	3,065,296
TOTAL	**$131,771,984**	**1,787,697,774**

Forecast - 2024	**Revenues**	**kWh**
Residential	$66,292,342	753,919,272
Small Gen. Service	9,700,442	127,225,137
Medium Gen. Service	13,283,640	185,561,400
Large Gen. Service	14,763,304	228,632,974
Large Industrial	3,404,141	63,894,979
Small Ag Irrigation	1,036,118	14,889,361
Large Ag. Irrigation	23,603,863	418,159,412
Street Lighting	219,864	2,544,538
Security Lighting	268,556	902,903
Unmetered Accounts	218,119	3,072,097
TOTAL	**$132,790,389**	**1,798,802,072**

Forecast - 2025	**Revenues**	**kWh**
Residential	$66,846,779	759,174,403
Small Gen. Service	9,741,686	127,632,584
Medium Gen. Service	13,407,667	187,463,154
Large Gen. Service	14,754,346	228,096,224
Large Industrial	3,395,384	63,729,918
Small Ag Irrigation	1,024,923	14,725,934
Large Ag. Irrigation	23,603,118	418,145,477
Street Lighting	219,864	2,544,538
Security Lighting	268,556	902,903
Unmetered Accounts	217,551	3,064,094
TOTAL	**$133,479,874**	**1,805,479,231**

Total kWh for 2021-2025

Actual (January - September 2021)

Total kWh 2021	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential	82,285,898	82,713,313	65,673,818	50,903,866	41,225,048	48,647,978	68,074,713	66,796,886	50,598,955	41,079,316	56,825,290	76,838,147	731,663,227
Small Gen. Service	10,595,300	10,525,346	9,111,951	8,584,646	8,561,544	9,771,019	11,789,903	11,912,838	10,091,451	8,565,568	9,070,724	10,472,486	119,052,775
Medium Gen. Service	15,576,249	15,107,309	13,988,033	13,879,563	14,205,273	15,344,888	17,203,177	17,188,085	15,571,866	14,795,869	15,037,077	15,089,959	182,987,349
Large Gen. Service	18,349,620	17,205,580	17,486,680	18,397,120	18,552,360	19,717,740	21,637,600	23,854,800	22,774,940	20,329,311	19,356,150	18,361,202	236,023,103
Large Industrial	5,847,600	5,077,960	5,585,080	5,429,320	5,669,040	5,578,680	5,773,120	4,649,960	4,382,520	5,729,930	5,281,851	5,663,755	64,668,816
Small Ag Irrigation	68,260	64,675	213,370	1,388,556	2,436,258	2,988,326	3,479,006	2,991,620	1,862,438	925,200	122,249	50,679	16,590,637
Large Ag. Irrigation	212,977	414,168	13,044,728	42,889,378	77,782,587	101,601,693	105,036,116	65,857,503	34,640,764	18,578,831	2,852,030	285,732	463,196,507
Street Lighting	212,181	16,848	256,651	212,085	212,079	212,201	211,766	211,772	211,858	212,053	212,058	212,067	2,393,618
Security Lighting	74,619	71,765	72,618	71,387	71,078	70,585	70,405	69,807	69,481	74,348	73,969	73,816	863,878
Unmetered Accounts	260,674	233,232	251,861	265,537	249,196	248,907	248,973	248,973	248,973	249,968	249,402	246,218	3,001,913
TOTAL Retail kWh SALES:	**133,483,378**	**131,430,196**	**125,684,790**	**142,021,458**	**168,964,463**	**204,182,017**	**233,524,779**	**193,782,244**	**140,453,246**	**110,540,394**	**109,080,799**	**127,294,061**	**1,820,441,825**

Total kWh 2022	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential	87,731,884	83,083,555	77,723,967	53,458,816	41,291,051	46,918,368	53,835,356	63,357,693	52,723,192	41,603,075	57,549,810	77,817,829	737,094,595
Small Gen. Service	11,628,779	11,448,808	10,538,903	9,149,103	9,021,530	10,174,696	10,918,057	12,252,178	11,079,467	8,901,902	9,426,893	10,883,696	125,424,013
Medium Gen. Service	15,625,169	15,138,268	14,375,977	13,813,701	14,069,852	15,348,475	15,693,782	17,193,967	16,234,891	14,940,855	15,184,426	15,237,827	182,857,189
Large Gen. Service	18,331,203	17,760,540	17,151,658	17,552,246	18,233,102	19,132,553	19,572,655	22,175,575	20,979,842	20,255,412	19,285,789	18,294,458	228,725,036
Large Industrial	5,475,511	5,047,423	5,682,332	5,320,891	4,422,373	5,289,991	4,823,724	5,636,554	5,341,046	5,713,503	5,266,709	5,647,519	63,667,576
Small Ag Irrigation	60,585	43,204	170,514	627,967	2,056,596	2,706,126	3,198,808	2,935,412	2,024,703	925,240	122,255	50,681	14,922,090
Large Ag. Irrigation	276,172	385,918	4,884,837	21,315,488	61,466,497	97,011,014	104,237,064	74,546,482	32,434,264	18,615,760	2,857,698	286,300	418,317,496
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	255,497	255,903	257,197	253,911	254,000	254,135	254,161	254,184	252,746	257,390	256,807	253,529	3,059,460
TOTAL Retail kWh SALES:	**139,672,615**	**133,451,317**	**131,074,827**	**121,780,169**	**151,102,810**	**197,122,797**	**212,820,786**	**198,638,983**	**141,356,917**	**111,499,539**	**110,236,414**	**128,757,722**	**1,777,514,896**

Total kWh 2023	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential	88,735,458	84,033,956	78,613,059	54,070,336	41,763,384	47,455,072	54,451,184	64,082,448	53,326,298	42,078,977	58,208,128	78,707,995	745,526,294
Small Gen. Service	11,695,377	11,514,375	10,599,259	9,201,500	9,073,196	10,232,966	10,980,585	12,322,347	11,142,919	8,952,883	9,480,881	10,946,027	126,142,316
Medium Gen. Service	15,722,452	15,232,519	14,465,482	13,899,705	14,157,451	15,444,035	15,791,492	17,301,017	16,335,970	15,033,877	15,278,965	15,332,698	183,995,664
Large Gen. Service	18,339,444	17,768,524	17,159,369	17,560,137	18,241,299	19,141,155	19,581,454	22,185,544	20,989,274	20,264,518	19,294,460	18,302,683	228,827,860
Large Industrial	5,482,639	5,053,994	5,689,729	5,327,818	4,428,130	5,296,877	4,830,003	5,643,891	5,347,998	5,720,941	5,273,564	5,654,870	63,750,453
Small Ag Irrigation	60,241	42,959	169,547	624,405	2,044,932	2,690,777	3,180,664	2,918,763	2,013,219	919,992	121,561	50,393	14,837,454
Large Ag. Irrigation	276,032	385,722	4,882,356	21,304,660	61,435,273	96,961,734	104,184,113	74,508,613	32,417,788	18,606,304	2,856,247	286,155	418,104,996
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	255,984	256,391	257,687	254,395	254,485	254,619	254,646	254,669	253,228	257,881	257,297	254,012	3,065,296
TOTAL Retail kWh SALES:	**140,855,442**	**134,576,138**	**132,125,930**	**122,531,002**	**151,685,957**	**197,764,674**	**213,541,321**	**199,504,230**	**142,113,460**	**112,121,774**	**111,057,129**	**129,820,717**	**1,787,697,774**

Total kWh 2024	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential	89,734,423	84,979,993	79,498,068	54,679,049	42,233,547	47,989,311	55,064,184	64,803,875	53,926,634	42,552,693	58,863,423	79,594,073	753,919,272
Small Gen. Service	11,795,771	11,613,216	10,690,245	9,280,487	9,151,081	10,320,807	11,074,844	12,428,123	11,238,572	9,029,736	9,562,266	11,039,989	127,225,137
Medium Gen. Service	15,856,245	15,362,143	14,588,578	14,017,987	14,277,926	15,575,458	15,925,872	17,448,243	16,474,983	15,161,810	15,408,984	15,463,174	185,561,400
Large Gen. Service	18,323,825	17,753,391	17,144,754	17,545,182	18,225,763	19,124,853	19,564,777	22,166,650	20,971,398	20,247,260	19,278,027	18,287,095	228,632,974
Large Industrial	5,495,068	5,065,451	5,702,628	5,339,896	4,438,169	5,308,885	4,840,953	5,656,686	5,360,122	5,733,910	5,285,520	5,667,690	63,894,979
Small Ag Irrigation	60,452	43,109	170,140	626,589	2,052,085	2,700,190	3,191,792	2,928,974	2,020,262	923,211	121,987	50,570	14,889,361
Large Ag. Irrigation	276,068	385,772	4,882,991	21,307,432	61,443,268	96,974,353	104,197,673	74,518,311	32,422,007	18,608,725	2,856,619	286,192	418,159,412
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	256,552	256,960	258,259	254,960	255,050	255,184	255,211	255,234	253,789	258,454	257,868	254,576	3,072,097
TOTAL Retail kWh SALES:	**142,086,219**	**135,747,733**	**133,225,106**	**123,339,628**	**152,364,698**	**198,536,481**	**214,402,483**	**200,493,032**	**142,954,533**	**112,802,199**	**111,920,718**	**130,929,242**	**1,798,802,072**

Total kWh 2025	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential	90,359,909	85,572,338	80,052,203	55,060,184	42,527,932	48,323,817	55,448,004	65,255,585	54,302,525	42,849,303	59,273,725	80,148,877	759,174,403
Small Gen. Service	11,833,548	11,650,408	10,724,481	9,310,208	9,180,388	10,353,861	11,110,312	12,467,925	11,274,564	9,058,654	9,592,890	11,075,346	127,632,584
Medium Gen. Service	16,018,750	15,519,584	14,738,091	14,161,652	14,424,255	15,735,085	16,089,090	17,627,064	16,643,829	15,317,198	15,566,905	15,621,650	187,463,154
Large Gen. Service	18,280,807	17,711,713	17,104,505	17,503,992	18,182,975	19,079,954	19,518,846	22,114,610	20,922,164	20,199,726	19,232,769	18,244,163	228,096,224
Large Industrial	5,480,873	5,052,366	5,687,896	5,326,102	4,426,703	5,295,170	4,828,447	5,642,073	5,346,276	5,719,098	5,271,866	5,653,049	63,729,918
Small Ag Irrigation	59,789	42,636	168,273	619,712	2,029,562	2,670,553	3,156,758	2,896,825	1,998,088	913,077	120,648	50,014	14,725,934
Large Ag. Irrigation	276,059	385,760	4,882,828	21,306,722	61,441,221	96,971,121	104,194,200	74,515,827	32,420,927	18,608,105	2,856,523	286,183	418,145,477
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	255,884	256,291	257,586	254,296	254,385	254,519	254,546	254,569	253,128	257,780	257,196	253,913	3,064,094
TOTAL Retail kWh SALES:	**142,853,432**	**136,478,792**	**133,905,306**	**123,830,914**	**152,755,232**	**198,971,521**	**214,887,383**	**201,061,415**	**143,448,267**	**113,209,343**	**112,458,548**	**131,619,078**	**1,805,479,231**

Total Revenue for 2021-2025

Actual (January - September 2021)

Total Revenue 2021	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential	$6,919,926	$6,934,824	$5,619,556	$4,613,320	$3,874,625	$4,454,111	$5,845,456	$5,785,079	$4,598,390	$3,898,198	$5,031,825	$6,540,056	$64,115,366
Small Gen. Service	807,232	797,754	700,139	673,783	668,553	752,042	882,605	893,744	772,833	672,788	702,129	798,693	9,122,295
Medium Gen. Service	1,103,799	1,072,735	1,013,345	1,017,757	1,035,313	1,140,998	1,270,394	1,235,511	1,165,896	1,084,168	1,082,264	1,074,311	13,296,491
Large Gen. Service	1,177,736	1,115,754	1,143,931	1,198,096	1,231,678	1,316,875	1,439,431	1,555,323	1,498,443	1,306,808	1,239,344	1,171,049	15,394,468
Large Industrial	303,823	277,096	300,171	286,965	298,358	324,314	306,959	262,209	250,931	300,665	281,745	297,661	3,490,897
Small Ag Irrigation	8,117	7,867	25,567	103,886	161,285	191,459	218,051	191,408	126,708	76,189	14,184	7,094	1,131,816
Large Ag. Irrigation	115,801	123,396	991,340	2,482,264	4,173,423	5,270,674	5,405,351	3,571,513	2,054,135	1,264,972	315,910	119,311	25,888,090
Street Lighting	18,341	2,479	22,034	18,334	18,333	18,344	18,268	18,266	18,272	18,322	18,322	18,322	207,637
Security Lighting	21,013	20,232	20,682	20,569	20,567	20,483	20,450	20,425	20,301	22,380	22,380	22,380	251,861
Unmetered Accounts	18,502	16,527	17,868	18,835	17,675	17,655	17,659	17,659	17,659	17,748	17,708	17,481	212,976
TOTAL REVENUE:	**$10,494,290**	**$10,368,664**	**$9,854,633**	**$10,433,809**	**$11,499,810**	**$13,506,955**	**$15,424,624**	**$13,551,137**	**$10,523,568**	**$8,662,239**	**$8,725,810**	**$10,066,358**	**$133,111,897**

Total Revenue 2022	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential	$7,350,040	$6,919,790	$6,607,695	$4,787,778	$3,920,517	$4,307,025	$4,851,160	$5,555,970	$4,741,813	$3,950,238	$5,098,265	$6,625,777	$64,716,067
Small Gen. Service	875,881	853,575	803,079	707,640	703,012	776,096	829,023	917,793	836,488	696,168	726,780	827,032	9,552,567
Medium Gen. Service	1,106,634	1,075,522	1,038,888	992,284	1,022,523	1,107,856	1,128,148	1,222,662	1,190,386	1,094,936	1,093,006	1,084,981	13,157,828
Large Gen. Service	1,160,503	1,136,342	1,103,120	1,128,000	1,184,982	1,243,253	1,265,271	1,421,912	1,359,046	1,306,360	1,238,942	1,170,704	14,718,435
Large Industrial	289,066	275,515	296,248	282,666	246,022	281,392	264,215	295,642	283,753	299,807	280,940	296,811	3,392,076
Small Ag Irrigation	7,744	6,535	19,924	58,807	141,165	176,709	203,321	189,112	137,939	76,184	14,176	7,086	1,038,700
Large Ag. Irrigation	118,320	139,941	482,296	1,408,344	3,346,010	4,984,214	5,289,989	3,983,488	1,911,066	1,267,280	316,331	119,341	23,366,618
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	18,140	18,169	18,261	18,028	18,034	18,044	18,045	18,047	17,945	18,275	18,233	18,001	217,222
TOTAL REVENUE:	**$10,967,029**	**$10,466,091**	**$10,410,211**	**$9,424,250**	**$10,622,966**	**$12,935,290**	**$13,889,873**	**$13,645,327**	**$10,519,138**	**$8,749,948**	**$8,827,375**	**$10,190,434**	**$130,647,933**

Total Revenue 2023	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential	$7,438,281	$7,002,776	$6,687,434	$4,846,597	$3,969,538	$4,360,354	$4,910,840	$5,623,716	$4,800,138	$3,999,624	$5,160,666	$6,705,767	$65,505,731
Small Gen. Service	881,503	859,009	808,281	712,277	707,644	781,128	834,378	923,659	841,868	700,767	731,530	832,377	9,614,421
Medium Gen. Service	1,109,094	1,077,908	1,041,301	994,568	1,024,928	1,110,397	1,130,722	1,225,373	1,193,176	1,097,533	1,095,506	1,087,425	13,187,931
Large Gen. Service	1,161,238	1,137,047	1,103,827	1,128,711	1,185,727	1,244,018	1,266,053	1,422,767	1,359,862	1,307,160	1,239,706	1,171,444	14,727,560
Large Industrial	289,441	275,872	296,632	283,032	246,341	281,756	264,557	296,025	284,120	300,196	281,305	297,196	3,396,473
Small Ag Irrigation	7,704	6,502	19,815	58,477	140,368	175,711	202,172	188,043	137,160	75,756	14,099	7,049	1,032,857
Large Ag. Irrigation	120,563	142,415	488,284	1,426,750	3,381,730	5,030,899	5,335,130	4,019,226	1,934,565	1,279,819	319,735	121,838	23,600,954
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	18,175	18,204	18,296	18,062	18,068	18,078	18,080	18,082	17,979	18,310	18,268	18,035	217,636
TOTAL REVENUE:	**$11,066,700**	**$10,560,434**	**$10,504,572**	**$9,509,177**	**$10,715,046**	**$13,043,042**	**$14,002,633**	**$13,757,593**	**$10,609,571**	**$8,819,865**	**$8,901,518**	**$10,281,833**	**$131,771,984**

Total Revenue 2024	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential	$7,526,166	$7,085,425	$6,766,856	$4,905,192	$4,018,382	$4,413,485	$4,970,295	$5,691,201	$4,858,243	$4,048,832	$5,222,828	$6,785,437	$66,292,342
Small Gen. Service	889,366	866,650	815,514	718,676	714,015	788,119	841,837	931,885	849,382	707,081	738,097	839,820	9,700,442
Medium Gen. Service	1,117,119	1,085,700	1,048,875	1,001,796	1,032,395	1,118,455	1,138,925	1,234,230	1,201,851	1,105,532	1,103,456	1,095,306	13,283,640
Large Gen. Service	1,164,131	1,139,827	1,106,531	1,131,468	1,188,579	1,246,993	1,269,106	1,426,209	1,363,109	1,310,313	1,242,717	1,174,322	14,763,304
Large Industrial	290,094	276,495	297,302	283,671	246,897	282,392	265,154	296,693	284,762	300,874	281,940	297,867	3,404,141
Small Ag Irrigation	7,701	6,497	19,854	58,653	140,829	176,297	202,849	188,671	137,611	75,991	14,120	7,044	1,036,118
Large Ag. Irrigation	120,565	142,420	488,334	1,426,922	3,382,157	5,031,540	5,335,810	4,019,736	1,934,803	1,279,972	319,763	121,840	23,603,863
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	18,244	18,336	18,102	18,109	18,118	18,120	18,122	18,019	18,350	18,309	18,075	218,119
TOTAL REVENUE:	**$11,174,060**	**$10,661,960**	**$10,602,305**	**$9,585,183**	**$10,782,063**	**$13,116,101**	**$14,082,798**	**$13,847,449**	**$10,688,481**	**$8,887,646**	**$8,981,931**	**$10,380,413**	**$132,790,389**

Total Revenue 2025	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Residential	$7,586,427	$7,141,914	$6,821,802	$4,946,946	$4,054,211	$4,451,832	$5,012,789	$5,738,729	$4,899,737	$4,084,928	$5,266,862	$6,840,602	$66,846,779
Small Gen. Service	893,077	870,203	818,984	721,809	717,164	791,478	845,398	935,737	852,941	710,218	741,298	843,377	9,741,686
Medium Gen. Service	1,127,532	1,095,816	1,058,680	1,011,156	1,042,053	1,128,898	1,149,557	1,245,729	1,213,085	1,115,877	1,113,758	1,105,525	13,407,667
Large Gen. Service	1,163,472	1,139,145	1,105,887	1,130,798	1,187,852	1,246,211	1,268,324	1,425,321	1,362,238	1,309,501	1,241,961	1,173,635	14,754,346
Large Industrial	289,348	275,784	296,537	282,941	246,262	281,666	264,472	295,930	284,029	300,099	281,214	297,101	3,395,384
Small Ag Irrigation	7,632	6,440	19,651	58,024	139,299	174,376	200,638	186,616	136,115	75,172	13,979	6,982	1,024,923
Large Ag. Irrigation	120,564	142,419	488,322	1,426,878	3,382,047	5,031,376	5,335,636	4,019,605	1,934,742	1,279,933	319,756	121,839	23,603,118
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	18,168	18,197	18,289	18,055	18,061	18,071	18,073	18,074	17,972	18,302	18,261	18,028	217,551
TOTAL REVENUE:	**$11,246,922**	**$10,730,619**	**$10,668,853**	**$9,637,309**	**$10,827,652**	**$13,164,610**	**$14,135,589**	**$13,906,444**	**$10,741,561**	**$8,934,732**	**$9,037,792**	**$10,447,791**	**$133,479,874**

Retail Energy Sales Forecast

Tab 8

Public Utility District No. 1 of Benton County

Ten-Year Load & Customer Forecast 2021-2030

Tables

Figures

1. Executive Summary

The Ten-Year Load and Customer Forecast for 2021-2030 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 2021-2030 Forecast:

1) Uses regression modeling to relate historical retail load/customers and weather variables to forecast future retail load/customers.
   a) An ARIMA model is used to determine the future number of customers. Historical monthly load and customers are combined to find a historical usage per customer. This is done at the rate-class level.
   b) Weather variables include the last twelve-year average of heating degree days, cooling degree days, and precipitation.
2) Includes 11.6 aMW identified by the 2019 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. Additionally, due to the uncertainty of potential or future EIL and EV load, a conservative approach was chosen to avoid overstating load growth and the associated revenue.

The Forecast expects the total system retail load to be 201.1 aMW in 2021 and the 5-year and 10-year annual average rates of growth to be 0.61% and 0.47%, respectively. These growth rates are inflated due COVID impact assumptions for the small general service rate class in 2021, but the class load is expected to return to near historic levels by the beginning of 2022. Total system forecast for calendar year 2021 is about 1.9 aMW lower than was estimated by the 2020 forecast. The Forecast projects a total system retail load of 209.8 aMW in 2030, as shown in **Figure 1-1.**

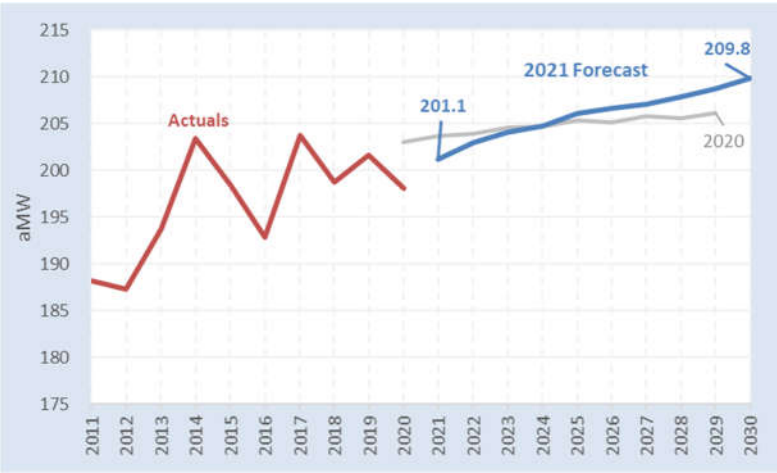

Figure 1-1 – Total system retail load comparison of 2021 Forecast to 2020 Forecast

The Forecast expects continued strong growth in the District's number of customers, with the total system number of customers forecast to increase by 638 customers in 2021. This dip in customers in 2021 as shown below is primarily due to a transfer of customers and load to the City of Richland that is expected to be complete in spring of 2021. 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..

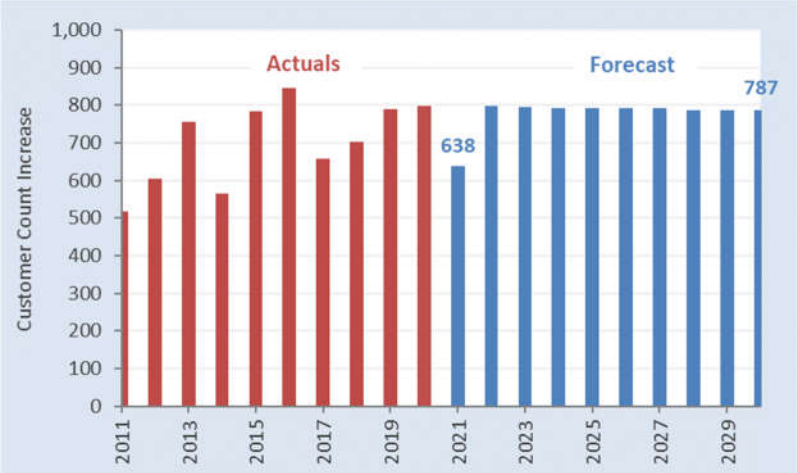

Figure 1-2 – Total system annual customer count increase

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 2021 to 29.1 MWh/customer in 2030, as shown below in **Figure 1-3**.

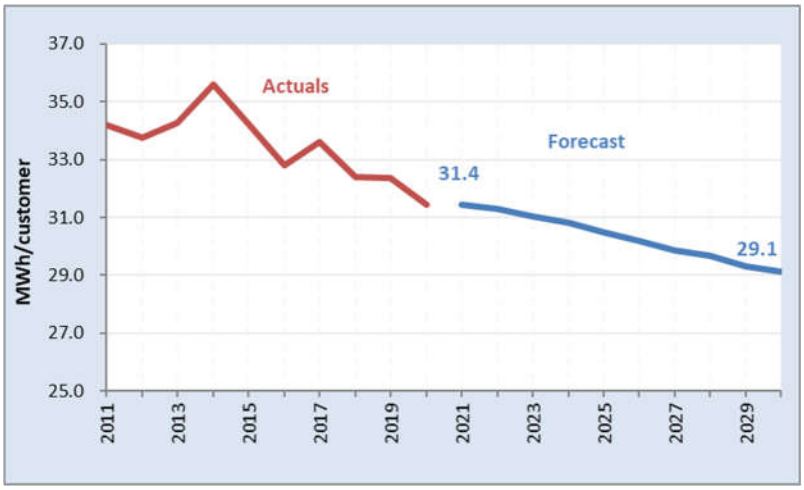

Figure 1-3 – Total system annual energy usage per customer

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. With the longer-term economic outlook uncertainty due to the effects from COVID-19, economic input data was not explicitly used in the model. The District still considers impacts from economic data from Woods and Poole but believes this to be more qualitative in nature. The District's monthly historical data is more reflective of the current status in terms of current customer growth and current load trending. The model first looks at historical monthly number of customers by rate class and using an autoregressive integrated moving average (ARIMA) then predicts future customers by rate-class as part of a time series analysis. Regression modeling is then used to establish a relationship between historical monthly load and historical monthly number of customers for each rate class to find a historical usage per customer for each customer class. A monthly baseline that captures weather independent usage and normal weather contribution is then added back to produce a monthly usage forecast. Additionally, the conservation forecast and any manual adjustments as determined by District staff are 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	4.0
Residential	11, 12	5.1
Small General	21, 90, 95	5.2
Medium General	22	5.3
Large General	23, 24	5.4
Large Industrial	34	5.5
Small Irrigation	71	5.6
Large Irrigation	72, 73, 74, 75, 76	5.7
Street Lights	51	5.8
Security Lights	61	5.9
Unmetered Flats	85	5.10

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, provides 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. 2020 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."
- "Despite a significant 2020 and 2021 short-term impact, COVID-19 itself does not appear to have made a quantifiable long-term economic impact that would affect U.S. economic growth through 2050: productive land area in the U.S. is still usable, productive capital (i.e. factories) are still in place, and the size of labor force has not been reduced significantly. COVID-19 however, and the efforts to contain it, have certainly been disruptive to the economy: preliminary data early in 2020 indicated GDP growth was an estimated -8.9%, personal income +8.1%, total employment -14.0%, personal savings +342% ($1.39 to $6.15 trillion), and government social benefit payments to persons +93.6%". Woods & Poole did not include a 2020 estimate of historical data, incorporating COVID-19, in the 2020 forecast because the data were unclear about what the estimate should be and because the long-term impact of an estimate could not be made reliably."
- "It is possible the U.S. economy will fully recover from the COVID-19 impacts early in 2021 and that the business failures in 2020 may not have a significant long-term impact."

TEA's general assessment was that Woods and Poole Economic data may paint an extremely optimistic picture when it comes to economic predictions about future years and long-term effects from the COVID-19 pandemic. Woods and Poole had published their economic data during the Q2 2020 and full economic impacts of COVID-19 are still unclear here in Q1 2021. Given the unknowns about the pandemic and the reliability of the outlook, Woods and Poole economic data was not included in any regression analysis in this year's forecast to help predict customer or load growth. Recent District load and customer changes in 2020 may provide better insight to the direct impacts to specific rate classes. More attention was given to the District's recent historical data as this may provide a better picture about the current conditions of COVID-19 locally.

A second reason for not including economic data, expressed by TEA, is because data provided by Woods and Poole is published at annual level it can be difficult to establish modeling relationships given that the District's historical data is captured in monthly granularity. TEA attempted to aggregate the District's historical monthly data to use in a regression model with economic data, but there was not a robust statistical relationship found between the two and therefore was not included as a variable in driving the customer or load 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 three key weather variables that are utilized.

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

Weather Variable
Heating degree days (HDD)[1]
Cooling degree days (CDD)[1]
Precipitation (in)

1) Degree days assume 65°F base

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 the purposes of this forecast, heating and cooling degree days have been calculated using a 65-degree Fahrenheit base. Precipitation is also included to correlate with loads, especially for the small and large irrigation customer classes.

In addition to the historical weather data being critical for the regression modeling, the data is utilized to calculate twelve-year averages for each weather variable to define the "average weather" assumed for the base case forecast. **Figure 2-1**Figure 2-1 and **Figure 2-2** show the annual historical values for degree days and precipitation, respectively, including the twelve-year average. **Table 2-3** summarizes the twelve-year minimum, average and maximum values for the weather variables.

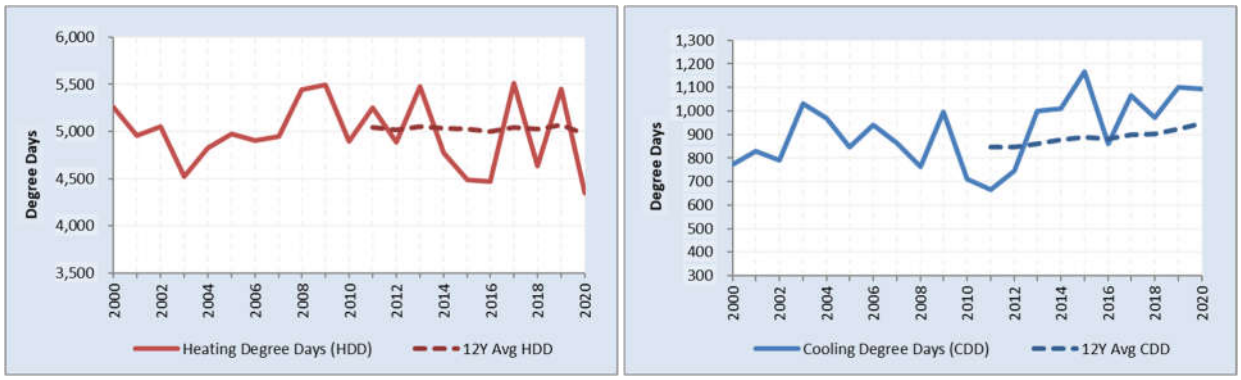

Figure 2-1 – Annual heating and cooling degree days from 2000-2020 at the Tri-Cities Airport

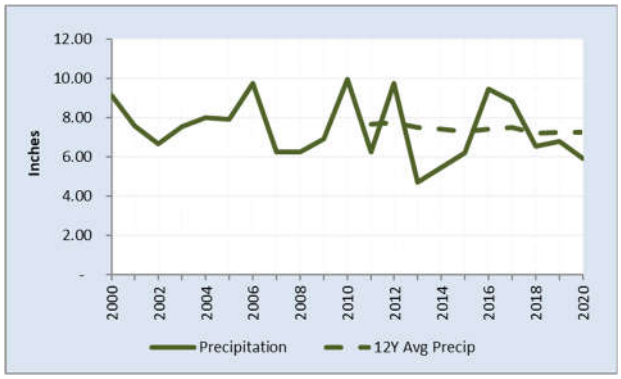

Figure 2-2 – Annual precipitation from 2000-2020 at the Tri-Cities Airport

Table 2-3 – Weather variables 12-year min., avg. and max. values at Tri-Cities Airport

Weather Variable	Minimum (Year)	Average (Base Case)	Maximum (Year)
Heating degree days (HDD)[1]	4,346	4974	5,512
Cooling degree days (CDD)[1]	665	949	1,168
Precipitation inches	4.72	7.24	9.96

1) Degree days assume 65°F base

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 to historical weather 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. Additionally, for this year's forecast TEA has moved away from using its prior MATLAB® program which was used for previous modeling purposes and has chosen to use a newer programming software, Python, which offers more modern statistical modeling and visualizations. TEA believes that MATLAB® is becoming largely outdated given its initial release more than 35 years ago and utilizing Python with its extensive statistical libraries and open source capability offers more robust modeling and support for the future.

TEA separates the load forecast process into two sets of processes. The customer forecast portion must be completed first in order to use the output to assist with the load forecast process. The customer forecast model starts by utilizing the historical number of customers for a given month and rate class utilizing data beginning in 2005. TEA takes the provided data and runs it through an auto-regressive integrated moving average (ARIMA) model. The auto-regressive component takes observation (historical) data as inputs into a regression model with the current period (present going forward) as the dependent variable. The idea here is to model the rate-of-change in customers over time rather than the number of customers at a given point in time. The moving average component makes the model more robust against sudden shocks in model. This can help account for deviations from longer term trends and capture recent acceleration. This combined process allows the District to forecast a rate of change in customers by rate class in the future, based on historical rate of change.

Figure 2-4 – Load Forecast Model

Figure 2-3 below visually displays the process.

Figure 2-3 – Customer Forecast Model

The second process is creating the Load Forecast Model which utilizes the customer forecast component from above to achieve its model results. The new modeling first takes both historical monthly load and customers by rate class to solve for a historical monthly usage (kWh/customer). A regression analysis on historical monthly usage is completed and plotted against historical monthly weather (HDD, CDD, and

precipitation) to help build the initial model. Error! Reference source not found.**2-4** below represents the steps used in the load forecast process.

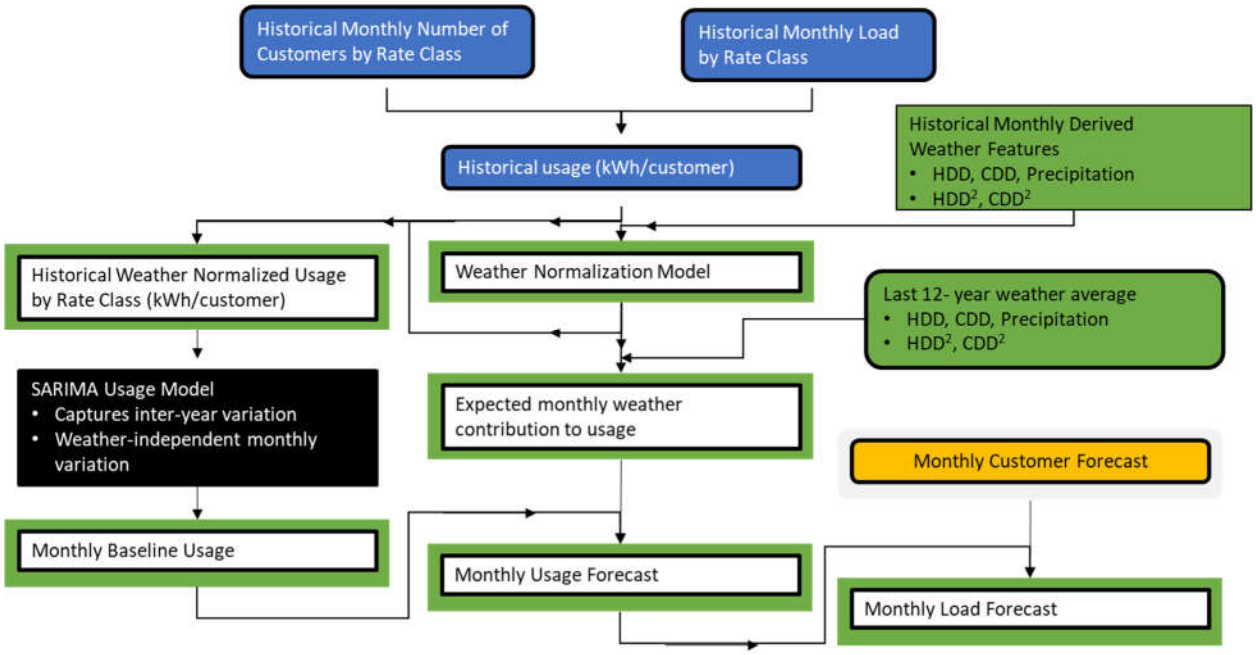

Figure 2-4 – Load Forecast Model

The same historical weather for each month for the regression is then passed back into the model and the output is subtracted from the actual usage for that month to arrive at the portion of load that is not due to weather. This can be referred to as the baseline usage. Below is the equation TEA has provided to define the term *Usage* in forecasting. Where letter α is the baseline load, β CDD, β HDD, and Precipitation are related to the weather contribution to load, and some amount of model error ϵ to get a usage rate by month.

$$Usage\left[\frac{kW}{customer}\right] = \alpha + \beta_{CDD}CDD + \beta_{HDD}HDD + \beta_{CDD^2}CDD^2 + \beta_{HDD^2}HDD^2 + \epsilon$$

Since baseline load now can be calculated separately, weather variables from a monthly average of the last twelve years are used as input into the model for the weather contribution to load going forward. This weather is the expected "normal" weather and helps establish a monthly usage forecast. The last and final step is to apply this monthly usage (baseline plus expected weather 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, which have evolved 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, 10-year and 20-year forecast of conservation savings by customer sector. In October 2019, the District's Commission passed Resolution No. 2517 to adopt a new CPA, which is used as the input for the 2021 Forecast. CPA's are conducted every two years and this input is currently being updated in even years. **Figure 2-5** below shows the historical achieved conservation from 2011 to 2020 by customer sector.

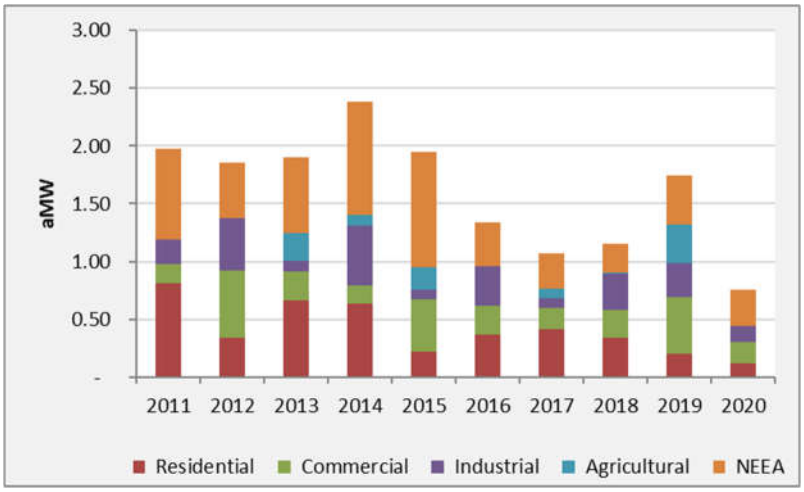

Figure 2-5 – Historical annual conservation by customer sector from 2011-2020

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 expects to be back on track for achieving its CPA targeted levels of conservation 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 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' changing percentage share of the total

potential over time. The 10-year cumulative conservation potential is about 11.6 aMW. **Figure 2-6** shows the forecast of total annual cumulative conservation by customer class for the years 2021-2030.

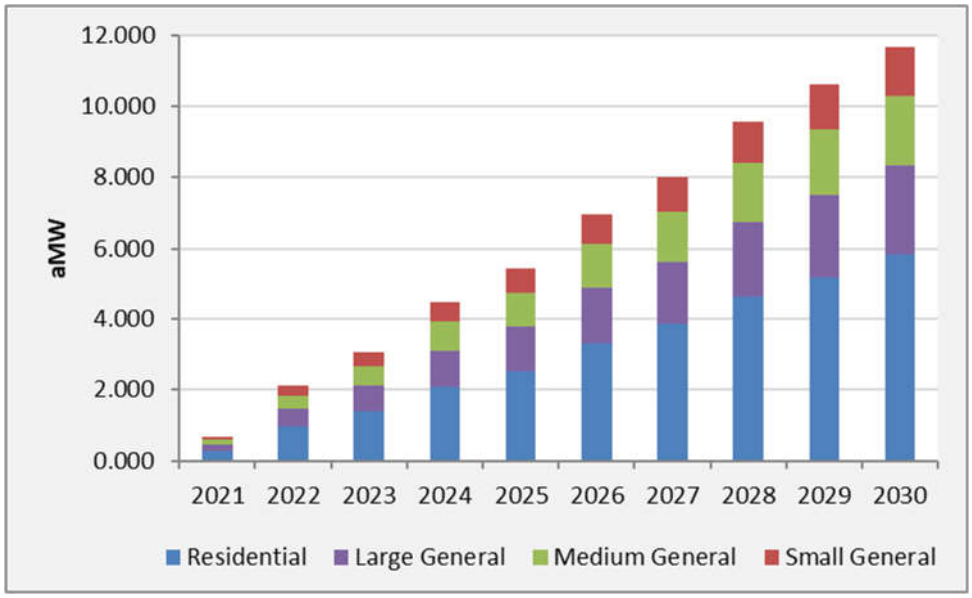

Figure 2-6 - Forecast of total cumulative conservation by customer class from 2021-2030

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. Given the model is driving a forecast based on historical values and trends, it was important this year to evaluate the rate classes most impacted by COVID-19. While a return to "normal" is likely over the long term, shorter term (1-2 year) adjustments were made to those rate classes that have seen or expected to have some impact going forward. Manual adjustments were also made for customer growth and loss of load due to transferring some customers to the City of Richland (COR). 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 60 cust./month. 2) Smoothed several years, as model was picking up historical year to year load volatility. 3) Adjusted load down by 0.33 aMW and customers down by 139 in 2021 due to transfer to COR.
Small General	Customer & Load	4) Decreased customer growth to achieve about 5 cust./month 5) Smoothed several years, as model was picking up historical year to year load volatility. 6) Slow ramp in 2021 due to impacts from COVID-19. 7) Adjusted load down by 0.04 aMW and customers down by 23 in 2021 due to transfer to COR.
Medium General	None	8) Acceptable model results.
Large General	Load	9) Adjusted load down 1.25 aMW then flat
Large Industrial	None	10) Acceptable. This class is not driven as much by weather or customer growth.
Small Irrigation	Customer & Load	11) Decreased customer growth to show a decline of about 3 customers annually 12) Decreased load based on decrease in customers.
Large Irrigation	Load	13) Adjusted load in winter months to zero and total load down by 0.5 aMW annually to align with recent history.
Streetlights	None	14) Acceptable. Held flat
Security Lights	None	15) Acceptable. Small declines in customer load.
Unmetered Flats	None	16) Acceptable. Held flat

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** 6-1 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 at 1.9% of kWh delivered. In BPA's current rate case for BP-22/TC-22, BPA intends to update the loss factors from an annual 1.9% in the current tariff to individual monthly loss factor percentages starting in TC-22. The 2021 load forecast assumes the new draft BPA loss factors going forward.

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** 6-1 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 2021 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 Forecast's growth rate has trended downward similar to regional forecasts by the Pacific Northwest Utilities Conference Committee (PNUCC).

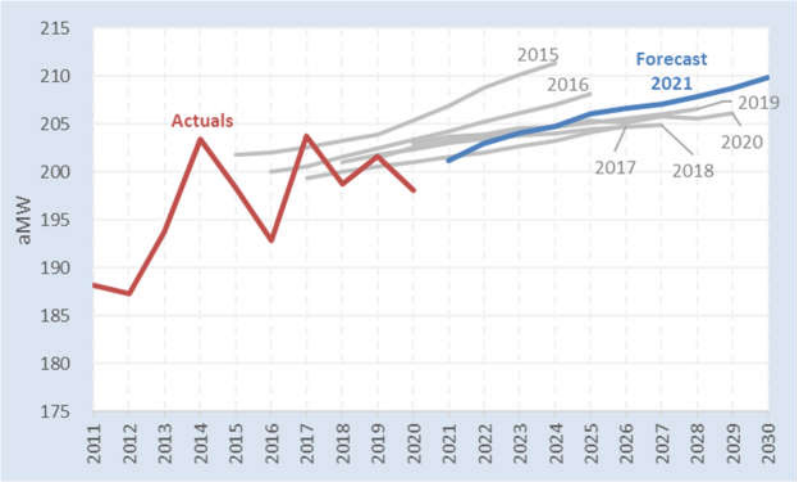

Figure 3-1 – Total system retail load ten-year forecasts from 2015 to 2021

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 10 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 2020

In addition to the variance of the total system retail load, the District considers variances by customer class. In 2020, COVID-19 had dramatic impacts on general service rate classes, mild winter temperatures reduced residential load, and lack of precipitation increased irrigation load. **Table 3-1** shows the variance by customer class for the 2020 forecast versus 2020 actuals.

Table 3-1 – Forecast vs actuals variance of retail load (aMW) by customer class for 2020

Customer Class	2020 Forecast	2020 Actual	2020 % Variance
Residential	84.17	80.19	-4.73%
Small General	14.44	12.72	-11.91%
Medium General	21.15	19.65	-7.09%
Large General	26.53	24.97	-5.88%
Large Industrial	7.52	7.24	-3.72%
Small Irrigation	1.67	1.86	11.38%
Large Irrigation	46.74	50.66	8.39%
Street Lights	0.29	0.29	0.00%
Security Lights	0.12	0.11	8.33%
Unmetered Flats	0.34	0.34	0.00%
Total System[1]	**202.96**	**198.02**	**-2.43%**

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 2001 to 2020 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 2021 Forecast, the high and low cases are ± 4.5% (± 9.0 aMW) in 2021 and ± 4.5% (± 9.4 aMW) in 2030. **Figure 3-3** shows graphically the historical annual variability along with the Forecast base, high, and low case forecasts.

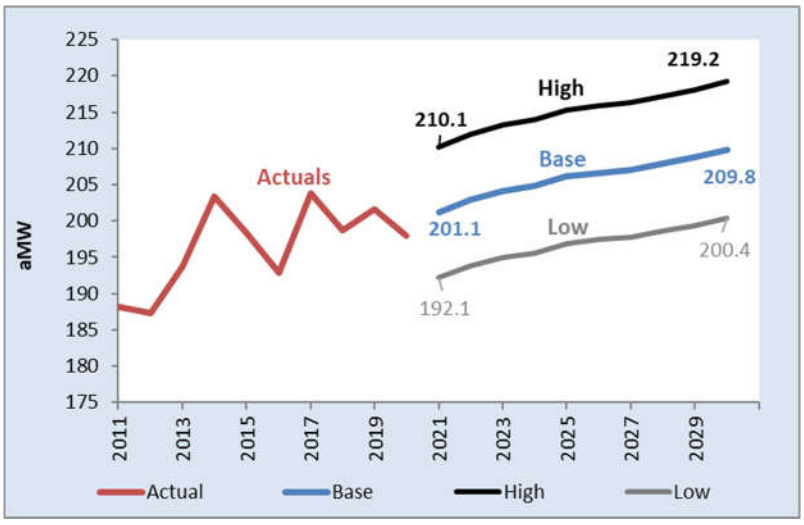

Figure 3-3 –Total system retail load historical and base forecast with high and low case

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 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.

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. 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. This will be something for District to consider in future load forecasts.

3.5 Customer Generation

In 2020 the District added 56 new services for customer generation net metering, which was significantly less than the 169 new services added in 2018 or the 96 added in 2019. Slower growth after 2019 was expected due to the end of the Washington State incentive funding. The District continues to expect on average one new service per week in 2021.

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 2020 by about 0.64 aMW or 5,618 MWh. The single hour maximum generation was 3.3 MW from 1:00-2:00 pm on May 31, 2020. 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 8 customers operating a total of 9 EIL services. The combined load of all EIL customers in 2020

was about 0.5 aMW, which is down about 0.5 aMW compared to 2019. The District's largest EIL service accounted for about 0.3 aMW in 2020. Several of these customers reduced their usage between May and Dec of 2020, likely impacted by the economic conditions for mining cryptocurrency. The 2021 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. 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. As mentioned above, legislation regarding 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 7 total rebates for EVs through March of 2021 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 61 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. 2021

City	Plug-in hybrid electric vehicle (PHEV)	Battery electric vehicle (BEV)	Grand Total
Prosser	8	4	12
Benton City	17	12	27
Kennewick	156	186	342
Grand Total	**181**	**202**	**383**

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 202 BEV's would add about 0.06 aMW of annual load. If all 202 BEV's charged at the same time using a level 2 charger (240-volt, 30 amp) it would add about 1.5 MW of peak demand.

4. 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 201.1 aMW in 2021 and growing to 209.8 aMW in 2030. The five and ten-year average annual rates of growth are 0.61% and 0.47%, respectively. The higher growth rate in 2021 to 2022, is due to impacts of COVID-19 expected to continue for the SGS rate class. The ten-year forecast includes 11.6 aMW of cumulative conservation expected over the 10-year period. The forecasted change in customers is expected to increase by roughly 638 total customers in 2021. See **Figure 4-1** and **Table**
4-1 for the ten-year forecast detail.

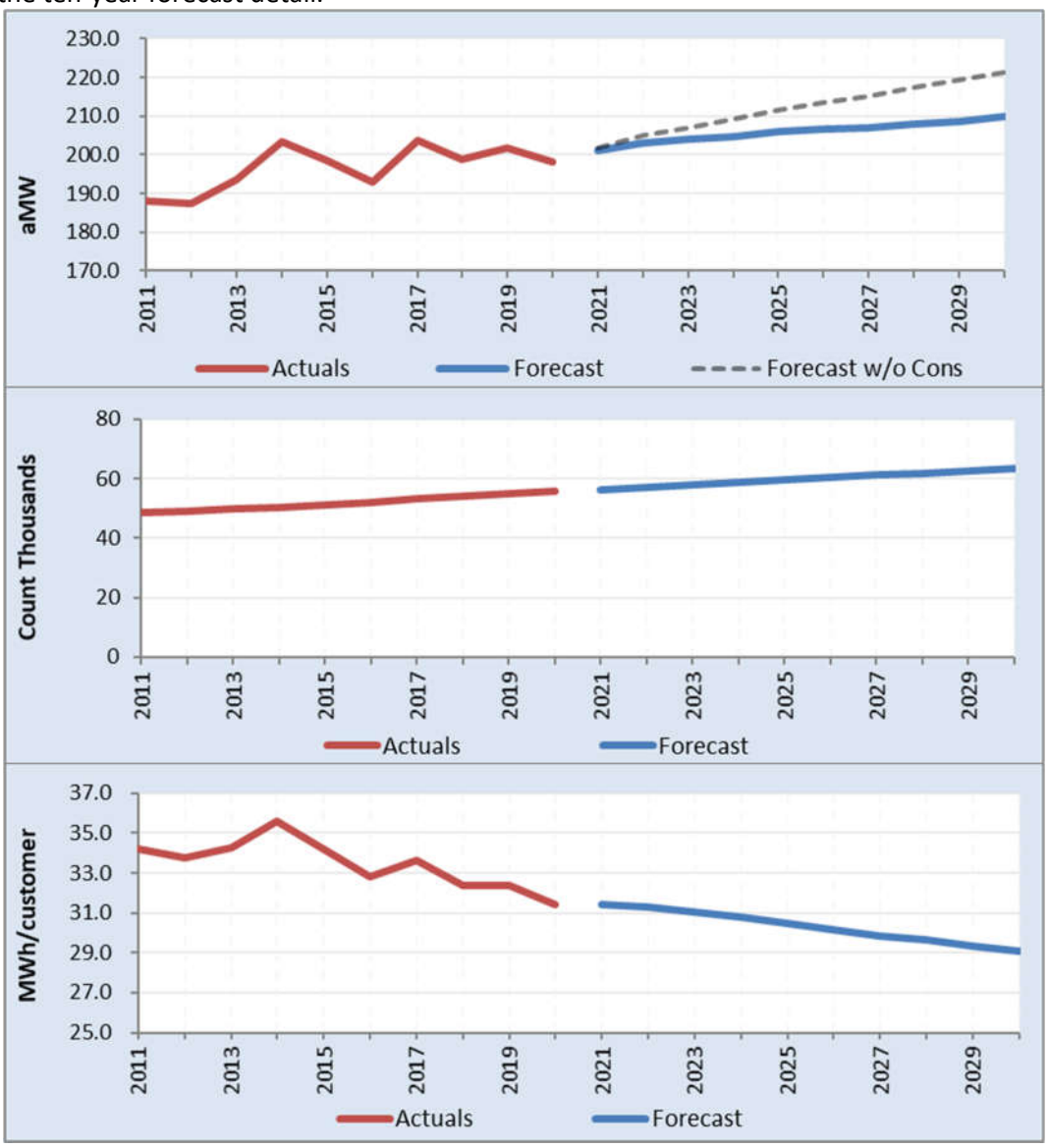

Figure 4-1 – Total System forecast of retail load, customers and usage per customer

Table 4-1 – 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	44,628	#N/A	#N/A	44,389	36.101
2006	1,555,710	#N/A	177.59	-2.92%	#N/A	#N/A	45,302	674	1.51%	44,856	34.682
2007	1,607,265	#N/A	183.48	3.31%	#N/A	#N/A	45,944	642	1.42%	45,569	35.271
2008	1,639,856	#N/A	186.69	1.75%	#N/A	#N/A	46,903	959	2.09%	46,600	35.190
2009	1,726,341	#N/A	197.07	5.56%	#N/A	#N/A	47,328	425	0.91%	47,074	36.673
2010	1,592,802	#N/A	181.83	-7.74%	#N/A	#N/A	47,937	609	1.29%	47,617	33.450
2011	1,648,362	#N/A	188.17	3.49%	#N/A	#N/A	48,455	518	1.08%	48,197	34.201
2012	1,645,277	#N/A	187.30	-0.46%	#N/A	#N/A	49,059	604	1.25%	48,710	33.777
2013	1,696,774	#N/A	193.70	3.41%	#N/A	#N/A	49,816	757	1.54%	49,520	34.264
2014	1,781,322	#N/A	203.35	4.98%	#N/A	#N/A	50,382	566	1.14%	50,053	35.589
2015	1,738,022	#N/A	198.40	-2.43%	#N/A	#N/A	51,166	784	1.56%	50,762	34.239
2016	1,694,078	#N/A	192.86	-2.79%	#N/A	#N/A	52,097	931	1.82%	51,643	32.804
2017	1,785,098	#N/A	203.78	5.66%	#N/A	#N/A	53,433	1,336	2.56%	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	#N/A	1,761,919	201.13	1.57%	1,767,946	201.82	56,363	638	1.14%	56,061	31.428
2022	#N/A	1,777,507	202.91	0.88%	1,795,991	205.02	57,160	797	1.41%	56,806	31.291
2023	#N/A	1,787,688	204.07	0.57%	1,814,476	207.13	57,956	796	1.39%	57,603	31.035
2024	#N/A	1,798,801	204.78	0.35%	1,838,128	209.26	58,749	793	1.37%	58,397	30.803
2025	#N/A	1,805,467	206.10	0.65%	1,853,017	211.53	59,541	792	1.35%	59,190	30.503
2026	#N/A	1,810,401	206.67	0.27%	1,871,537	213.65	60,333	792	1.33%	59,982	30.183
2027	#N/A	1,813,839	207.06	0.19%	1,884,032	215.07	61,124	791	1.31%	60,772	29.847
2028	#N/A	1,825,941	207.87	0.39%	1,909,901	217.43	61,912	788	1.29%	61,562	29.660
2029	#N/A	1,828,486	208.73	0.41%	1,921,324	219.33	62,699	787	1.27%	62,350	29.326
2030	#N/A	1,837,830	209.80	0.51%	1,939,845	221.44	63,486	787	1.26%	63,137	29.109
AARG %[1] (2021-2025)			0.61%								-0.74%
AARG %[1] (2021-2030)			0.47%								-0.85%

1) AARG % = Annual Average Rate of Growth Percentage

5. Forecast by Customer Class

5.1 Residential

The forecast for residential retail load is 83.1 aMW in 2021 and growing to 89.2 aMW in 2030. The five and ten-year average annual rates of growth are 1.06% and 0.79% respectively. The ten-year forecast includes 5.8 aMW of cumulative conservation. The forecasted change in customers is an increase of 588 customers in 2021. The first-year increase of the customer forecast is smaller than recent history because the District will be transferring 139 of its residential customers and load to the City of Richland in spring of 2021. See **Figure 5-1** and **Table 5-1** for the ten-year forecast detail.

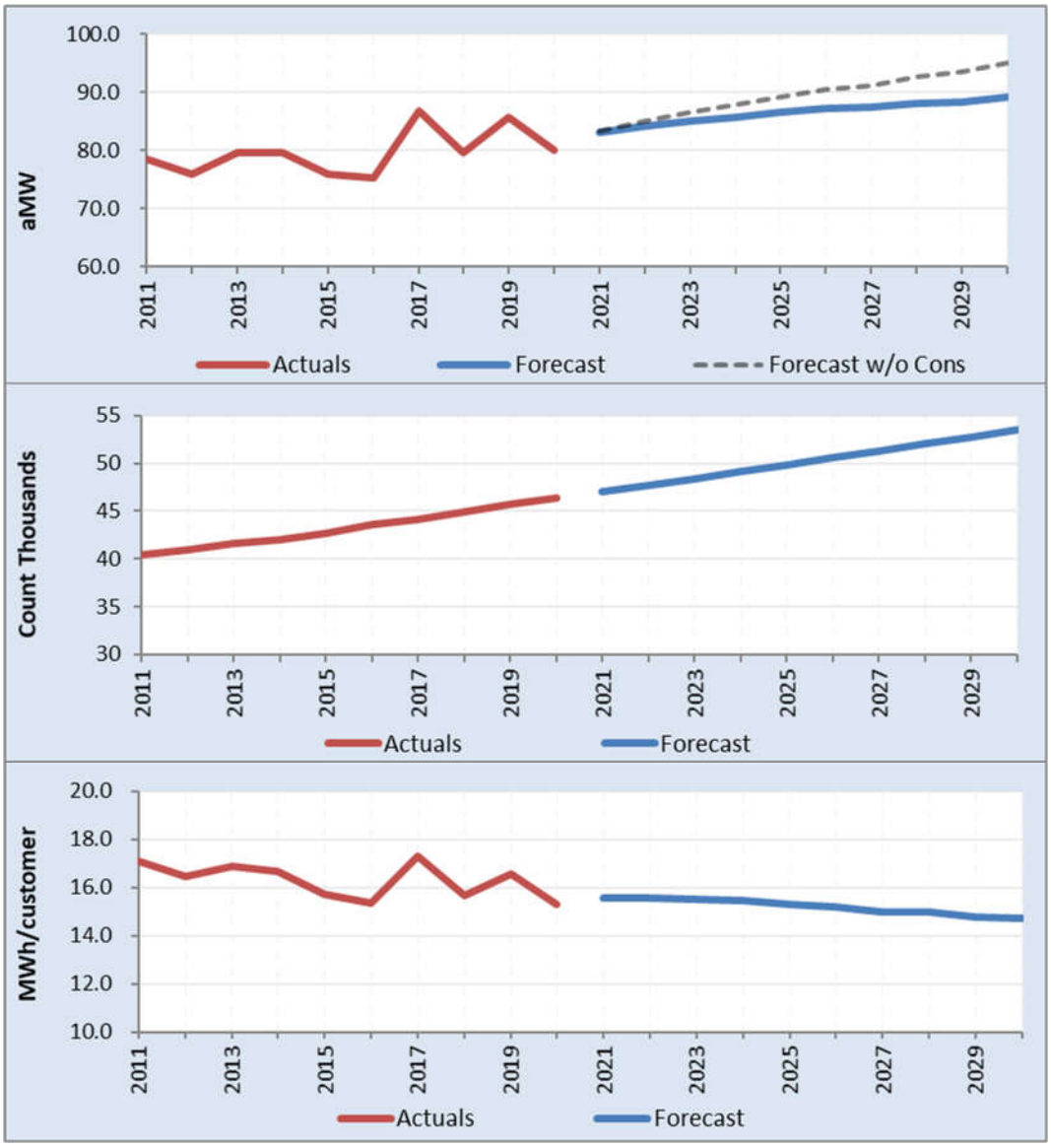

Figure 5-1 - Residential forecast of retail load, customers and usage per customer

Table 5-1 – 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	#N/A	727,815	83.08	3.61%	730,390	83.38	46,986	588	1.27%	46,699	15.585
2022	#N/A	737,095	84.14	1.27%	745,542	85.11	47,711	725	1.54%	47,379	15.558
2023	#N/A	745,526	85.11	1.14%	757,888	86.52	48,435	724	1.52%	48,103	15.499
2024	#N/A	753,919	85.83	0.85%	772,202	87.91	49,158	723	1.49%	48,826	15.441
2025	#N/A	759,174	86.66	0.97%	781,322	89.19	49,879	721	1.47%	49,549	15.322
2026	#N/A	764,507	87.27	0.70%	793,675	90.60	50,600	721	1.45%	50,270	15.208
2027	#N/A	765,374	87.37	0.11%	799,224	91.24	51,320	720	1.42%	50,990	15.010
2028	#N/A	773,472	88.05	0.78%	814,454	92.72	52,038	718	1.40%	51,709	14.958
2029	#N/A	774,629	88.43	0.42%	820,181	93.63	52,755	717	1.38%	52,427	14.775
2030	#N/A	781,332	89.19	0.87%	832,513	95.04	53,472	717	1.36%	53,144	14.702
AARG %[1] (2021-2025)			1.06%								-0.43%
AARG %[1] (2021-2030)			0.79%								-0.65%

1) AARG % = Annual Average Rate of Growth Percentage

5.2 Small General

The forecast for small general service retail load is 13.8 aMW in 2021 and growing to 15.0 aMW in 2030. The five and ten-year average annual rates of growth are 1.41% and 0.97% respectively. The ten-year forecast includes 1.4 aMW of cumulative conservation. The first-year increase in the customer forecast is smaller than recent history because the District will be transferring a 23 of its customers and load to the City of Richland in Spring of 2021. This rate-class was the most impacted by COVID-19 and therefore is forecasted to show a slower return to expected load. See **Figure 5-2** and **Table 5-2** for the ten-year forecast detail.

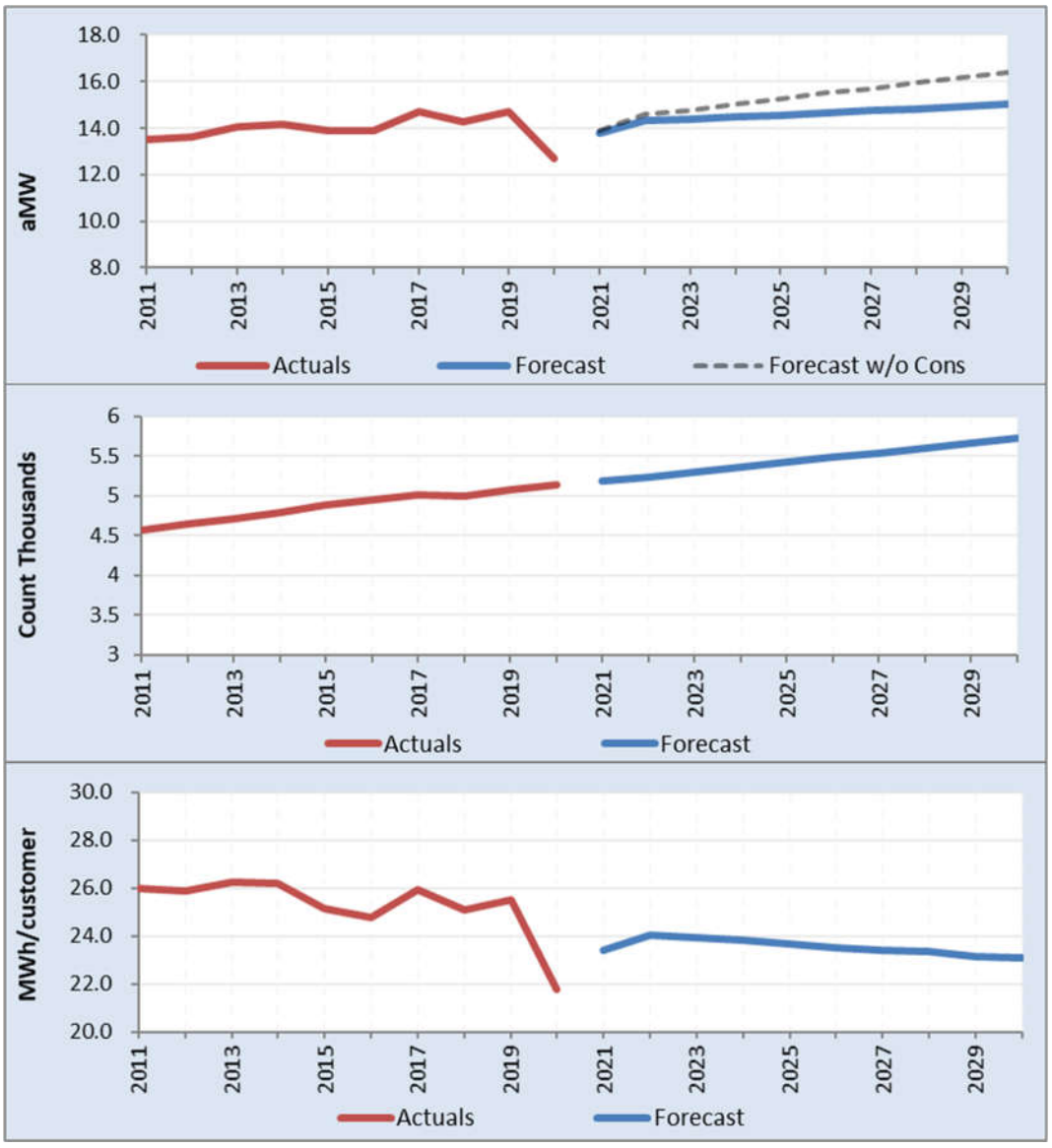

Figure 5-2 – Small General forecast of retail load, customers and usage per customer

Table 5-2 – 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	#N/A	120,685	13.78	8.30%	121,487	13.87	5,183	37	0.72%	5,162	23.378
2022	#N/A	125,424	14.32	3.93%	127,757	14.58	5,243	60	1.16%	5,216	24.048
2023	#N/A	126,142	14.40	0.57%	129,496	14.78	5,303	60	1.14%	5,276	23.911
2024	#N/A	127,225	14.48	0.58%	132,122	15.04	5,363	60	1.13%	5,336	23.845
2025	#N/A	127,633	14.57	0.60%	133,537	15.24	5,423	60	1.12%	5,396	23.655
2026	#N/A	128,353	14.65	0.56%	135,783	15.50	5,483	60	1.11%	5,456	23.527
2027	#N/A	129,063	14.73	0.55%	137,511	15.70	5,544	61	1.11%	5,516	23.398
2028	#N/A	130,079	14.81	0.51%	140,081	15.95	5,604	60	1.08%	5,577	23.326
2029	#N/A	130,504	14.90	0.60%	141,495	16.15	5,664	60	1.07%	5,637	23.153
2030	#N/A	131,657	15.03	0.88%	143,473	16.38	5,724	60	1.06%	5,697	23.112
AARG %[1] (2021-2025)			1.41%								0.30%
AARG %[1] (2021-2030)			0.97%								-0.13%

1) AARG % = Annual Average Rate of Growth Percentage

5.3 Medium General

The forecast for medium general service retail load is 20.7 aMW in 2021 and growing to 22.4 aMW in 2030. The five and ten-year average annual rates of growth are 0.87% and 0.90% respectively. The ten-year forecast includes nearly 2.0 aMW of cumulative conservation. The forecasted change in customers is an increase of about 10 customers in 2021. See

Figure 5-3 and **Table 5-3** for the ten-year forecast detail.

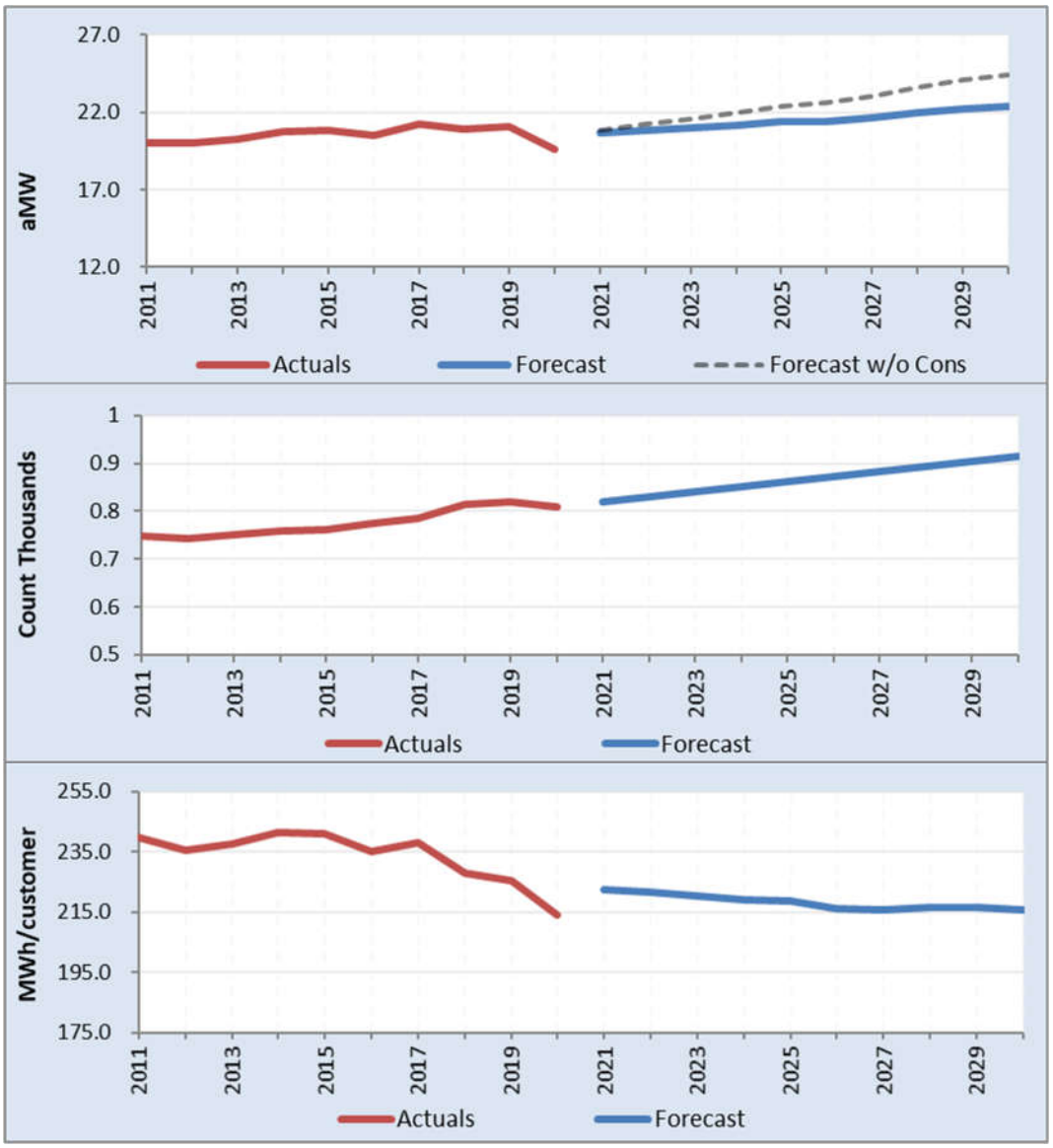

Figure 5-3 – Medium General forecast of retail load, customers and usage per customer

Table 5-3 – 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	#N/A	181,083	20.67	5.22%	182,258	20.81	819	10	1.24%	814	222.392
2022	#N/A	182,857	20.87	0.98%	186,275	21.26	830	11	1.34%	825	221.645
2023	#N/A	183,996	21.00	0.62%	188,909	21.56	841	11	1.33%	836	220.156
2024	#N/A	185,561	21.12	0.58%	192,737	21.94	851	10	1.19%	846	219.275
2025	#N/A	187,463	21.40	1.30%	196,114	22.39	862	11	1.29%	857	218.743
2026	#N/A	187,412	21.39	-0.03%	198,299	22.64	873	11	1.28%	868	215.975
2027	#N/A	189,451	21.63	1.09%	201,828	23.04	883	10	1.15%	878	215.714
2028	#N/A	192,700	21.94	1.44%	207,353	23.61	894	11	1.25%	889	216.760
2029	#N/A	194,668	22.22	1.30%	210,772	24.06	905	11	1.23%	900	216.357
2030	#N/A	196,329	22.41	0.85%	213,641	24.39	915	10	1.10%	910	215.648
AARG %[1] (2021-2025)			0.87%								-0.41%
AARG %[1] (2021-2030)			0.90%								-0.34%

1) AARG % = Annual Average Rate of Growth Percentage

5.4 Large General

The forecast for large general service retail load is 26.2 aMW in 2021 and decreasing to 25.8 aMW in 2030. The five and ten-year average annual rates of growth are -0.16% and -0.18% respectively. The ten-year forecast includes 2.5 aMW of cumulative conservation. The forecasted change in customers is an increase of about 3 customers in 2021. See **Figure 5-4** and **Table 5-4** for the ten-year forecast detail.

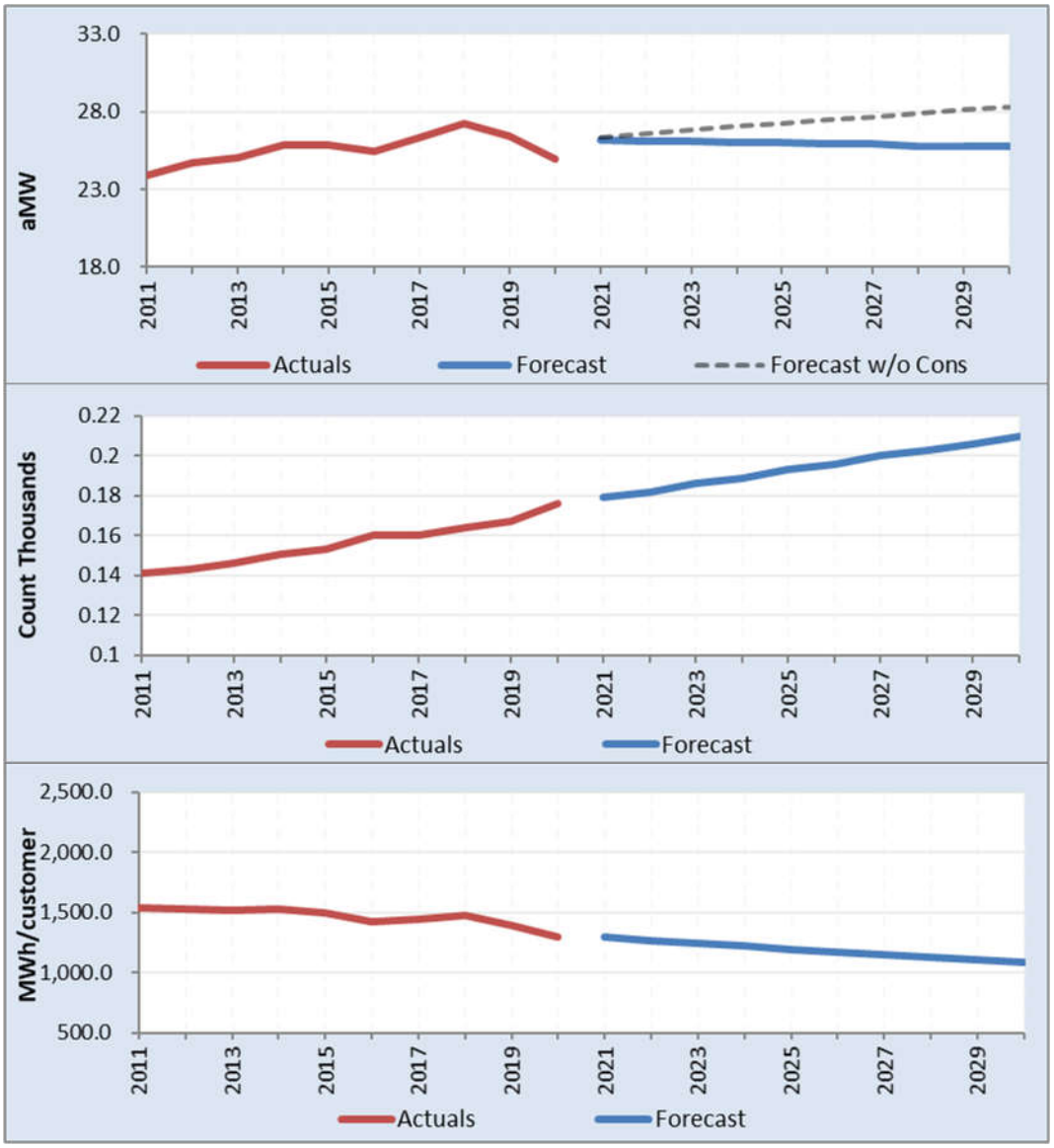

Figure 5-4 – Large General forecast of retail load, customers and usage per customer

Table 5-4 – 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	#N/A	229,559	26.21	4.96%	231,033	26.37	179	3	1.70%	177	1,293.900
2022	#N/A	228,725	26.11	-0.36%	233,011	26.60	182	3	1.68%	181	1,264.839
2023	#N/A	228,828	26.12	0.04%	234,988	26.83	186	4	2.20%	184	1,241.381
2024	#N/A	228,633	26.03	-0.36%	237,605	27.05	189	3	1.61%	188	1,218.293
2025	#N/A	228,096	26.04	0.04%	238,943	27.28	193	4	2.12%	191	1,193.180
2026	#N/A	227,100	25.92	-0.44%	240,750	27.48	196	3	1.55%	195	1,167.111
2027	#N/A	227,039	25.92	-0.03%	242,558	27.69	200	4	2.04%	198	1,146.661
2028	#N/A	226,677	25.81	-0.43%	245,000	27.89	203	3	1.50%	201	1,125.414
2029	#N/A	225,981	25.80	-0.03%	246,173	28.10	206	3	1.48%	205	1,103.245
2030	#N/A	225,913	25.79	-0.03%	247,619	28.27	210	4	1.94%	208	1,084.380
AARG %[1] (2021-2025)			-0.16%								-2.01%
AARG %[1] (2021-2030)			-0.18%								-1.94%

1) AARG % = Annual Average Rate of Growth Percentage

5.5 Large Industrial

The forecast for large industrial service retail load in 2021 is 7.29 aMW and is estimated to remain nearly flat over the ten-year forecast period, with no incremental conservation and no additional customers added. See **Figure 5-5** and **Table 5-5** for the ten-year forecast detail.

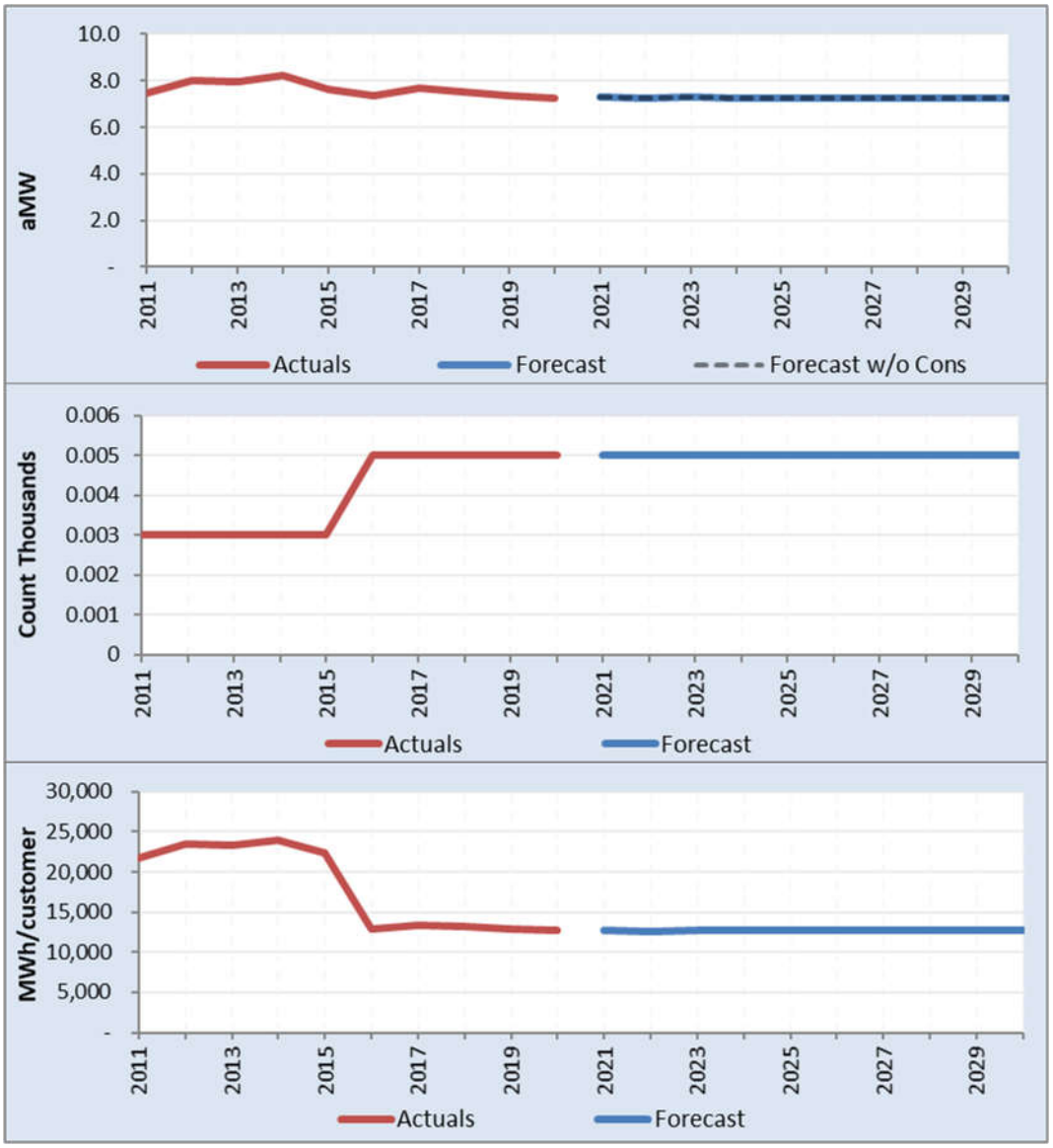

Figure 5-5 – Large Industrial forecast of retail load, customers and usage per customer

Table 5-5 – 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	3	#N/A	#N/A	3	17,761.932
2006	37,456	#N/A	4.28	-29.71%	#N/A	#N/A	3	0	0.00%	3	12,485.305
2007	49,045	#N/A	5.60	30.94%	#N/A	#N/A	3	0	0.00%	3	16,348.383
2008	47,760	#N/A	5.44	-2.89%	#N/A	#N/A	3	0	0.00%	3	15,920.098
2009	38,909	#N/A	4.44	-18.31%	#N/A	#N/A	3	0	0.00%	3	12,969.692
2010	55,365	#N/A	6.32	42.29%	#N/A	#N/A	3	0	0.00%	3	18,454.887
2011	65,411	#N/A	7.47	18.15%	#N/A	#N/A	3	0	0.00%	3	21,803.603
2012	70,575	#N/A	8.03	7.60%	#N/A	#N/A	3	0	0.00%	3	23,525.055
2013	69,803	#N/A	7.97	-0.82%	#N/A	#N/A	3	0	0.00%	3	23,267.593
2014	71,869	#N/A	8.20	2.96%	#N/A	#N/A	3	0	0.00%	3	23,956.495
2015	66,942	#N/A	7.64	-6.86%	#N/A	#N/A	3	0	0.00%	3	22,313.962
2016	64,612	#N/A	7.36	-3.74%	#N/A	#N/A	5	2	66.67%	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	#N/A	63,851	7.29	0.63%	63,851	7.29	5	0	0.00%	5	12,770.124
2022	#N/A	63,668	7.27	-0.29%	63,668	7.27	5	0	0.00%	5	12,733.515
2023	#N/A	63,750	7.28	0.13%	63,750	7.28	5	0	0.00%	5	12,750.091
2024	#N/A	63,895	7.27	-0.05%	63,895	7.27	5	0	0.00%	5	12,778.996
2025	#N/A	63,730	7.28	0.01%	63,730	7.28	5	0	0.00%	5	12,745.984
2026	#N/A	63,722	7.27	-0.01%	63,722	7.27	5	0	0.00%	5	12,744.445
2027	#N/A	63,726	7.27	0.01%	63,726	7.27	5	0	0.00%	5	12,745.142
2028	#N/A	63,906	7.28	0.01%	63,906	7.28	5	0	0.00%	5	12,781.262
2029	#N/A	63,725	7.27	-0.01%	63,725	7.27	5	0	0.00%	5	12,744.969
2030	#N/A	63,725	7.27	0.00%	63,725	7.27	5	0	0.00%	5	12,744.905
AARG %[1] (2021-2025)			-0.05%								-0.05%
AARG %[1] (2021-2030)			-0.02%								-0.02%

1) AARG % = Annual Average Rate of Growth Percentage

5.6 Small Irrigation

The forecast for small irrigation retail load is 1.7 aMW in 2021 and decreasing to 1.6 aMW in 2030. The five and ten-year average annual rates of growth are -0.33% and -0.53% respectively. The ten-year forecast does not include any conservation. The forecasted change in customers is expected to remain flat 2021 and then lose about 3 customers annually per year afterward. See **Figure 5-6** and **Table 5-6** for the ten-year forecast detail.

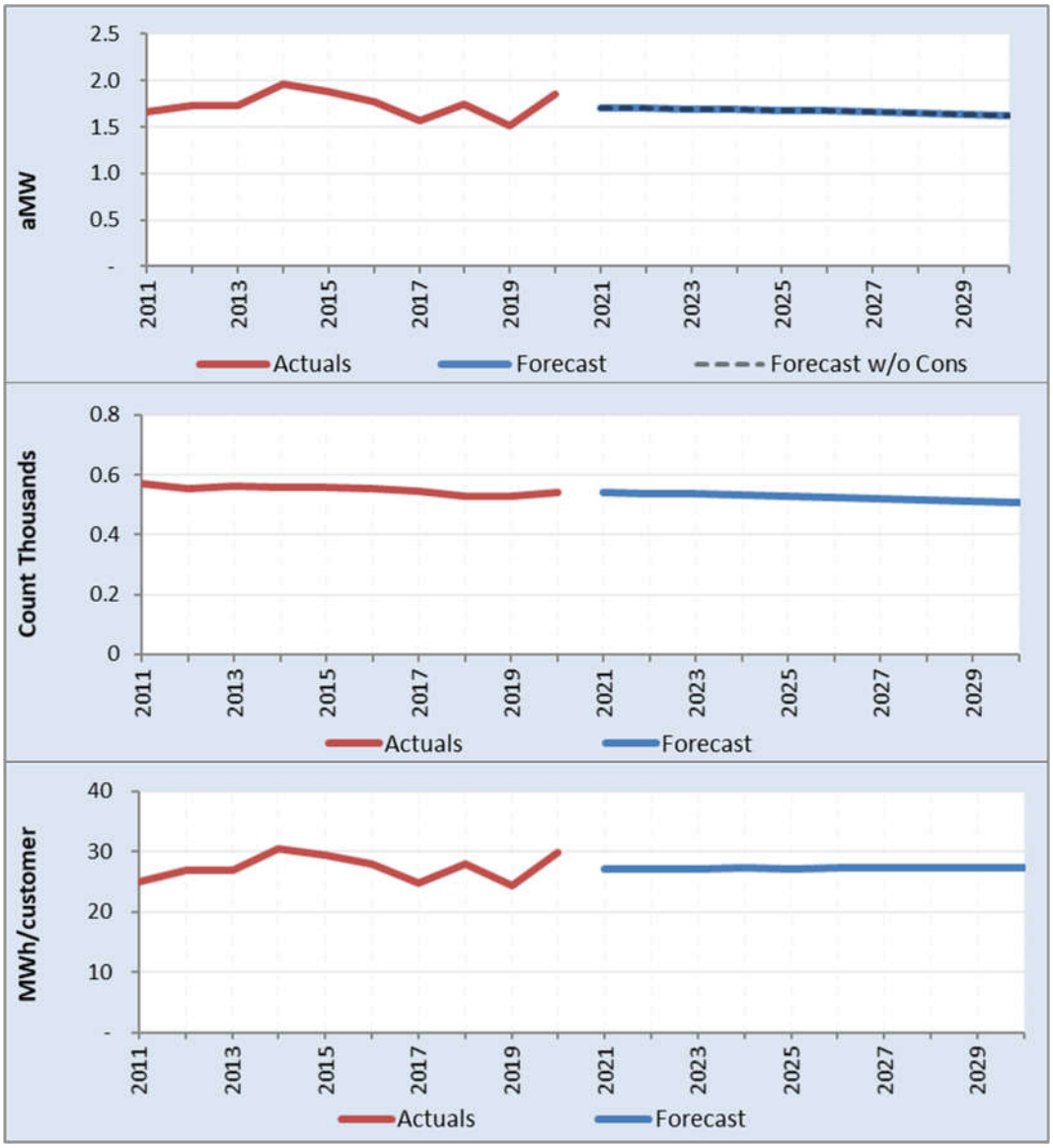

Figure 5-6 – Small Irrigation forecast of retail load, customers and usage per customer

Table** 5-6 – **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	#N/A	14,921	1.70	-8.30%	14,921	1.70	540	0	0.00%	552	27.028
2022	#N/A	14,922	1.70	0.00%	14,922	1.70	538	-2	-0.37%	551	27.102
2023	#N/A	14,837	1.69	-0.57%	14,837	1.69	535	-3	-0.56%	548	27.067
2024	#N/A	14,889	1.70	0.08%	14,889	1.70	532	-3	-0.56%	545	27.320
2025	#N/A	14,726	1.68	-0.83%	14,726	1.68	528	-4	-0.75%	542	27.191
2026	#N/A	14,659	1.67	-0.45%	14,659	1.67	525	-3	-0.57%	538	27.260
2027	#N/A	14,538	1.66	-0.82%	14,538	1.66	521	-4	-0.76%	534	27.230
2028	#N/A	14,440	1.64	-0.95%	14,440	1.64	517	-4	-0.77%	530	27.250
2029	#N/A	14,331	1.64	-0.49%	14,331	1.64	513	-4	-0.77%	526	27.245
2030	#N/A	14,226	1.62	-0.73%	14,226	1.62	509	-4	-0.78%	522	27.253
AARG %[1] (2021-2025)			-0.33%								0.15%
AARG %[1] (2021-2030)			-0.53%								0.09%

1) AARG % = Annual Average Rate of Growth Percentage

5.7 Large Irrigation

The forecast for large irrigation retail load is 47.7 aMW in 2021 and is estimated to remain roughly flat over the ten-year forecast period, with no incremental conservation and no additional customers to be added. See **Figure** 5-7 and **Table 5-7** for the ten-year forecast detail.

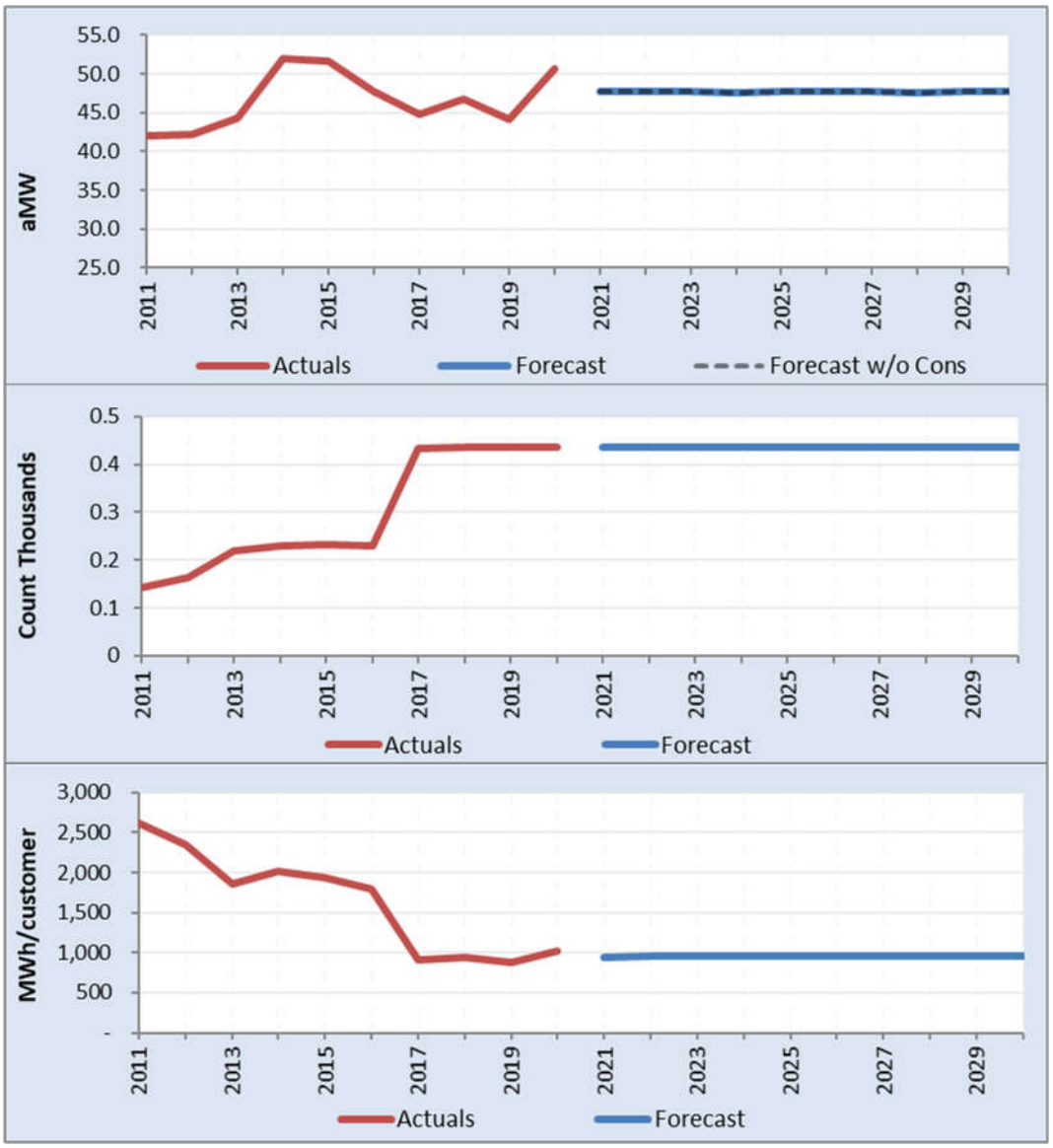

Figure 5-7 – Large Irrigation forecast of retail load, customers and usage per customer

Table 5-7 – 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	96	#N/A	#N/A	96	3,978.407
2006	353,743	#N/A	40.38	-7.38%	#N/A	#N/A	101	5	5.21%	99	3,573.162
2007	386,402	#N/A	44.11	9.23%	#N/A	#N/A	116	15	14.85%	110	3,512.746
2008	391,389	#N/A	44.56	1.01%	#N/A	#N/A	124	8	6.90%	121	3,234.619
2009	410,386	#N/A	46.85	5.14%	#N/A	#N/A	133	9	7.26%	131	3,132.715
2010	356,875	#N/A	40.74	-13.04%	#N/A	#N/A	130	-3	-2.26%	134	2,663.248
2011	367,393	#N/A	41.94	2.95%	#N/A	#N/A	142	12	9.23%	140	2,624.234
2012	370,573	#N/A	42.19	0.59%	#N/A	#N/A	163	21	14.79%	158	2,345.402
2013	387,408	#N/A	44.22	4.83%	#N/A	#N/A	218	55	33.74%	208	1,862.539
2014	455,435	#N/A	51.99	17.56%	#N/A	#N/A	229	11	5.05%	225	2,024.154
2015	451,777	#N/A	51.57	-0.80%	#N/A	#N/A	232	3	1.31%	234	1,930.671
2016	419,588	#N/A	47.77	-7.38%	#N/A	#N/A	230	-2	-0.86%	233	1,800.809
2017	392,051	#N/A	44.75	-6.31%	#N/A	#N/A	433	203	88.26%	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	#N/A	417,488	47.66	-5.92%	417,488	47.66	436	0	0.00%	436	957.540
2022	#N/A	418,317	47.75	0.20%	418,317	47.75	436	0	0.00%	436	959.444
2023	#N/A	418,105	47.73	-0.05%	418,105	47.73	436	0	0.00%	436	958.956
2024	#N/A	418,159	47.60	-0.26%	418,159	47.60	436	0	0.00%	436	959.081
2025	#N/A	418,145	47.73	0.27%	418,145	47.73	436	0	0.00%	436	959.049
2026	#N/A	418,149	47.73	0.00%	418,149	47.73	436	0	0.00%	436	959.057
2027	#N/A	418,148	47.73	0.00%	418,148	47.73	436	0	0.00%	436	959.055
2028	#N/A	418,148	47.60	-0.27%	418,148	47.60	436	0	0.00%	436	959.056
2029	#N/A	418,148	47.73	0.27%	418,148	47.73	436	0	0.00%	436	959.056
2030	#N/A	418,148	47.73	0.00%	418,148	47.73	436	0	0.00%	436	959.056
AARG %[1] (2021-2025)			0.04%								0.04%
AARG %[1] (2021-2030)			0.02%								0.02%

1) AARG % = Annual Average Rate of Growth Percentage

5.8 Street Lighting

The forecast for street lighting retail load is 0.29 aMW in 2021 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 5-8** and **Table 5-8** for the ten-year forecast detail.

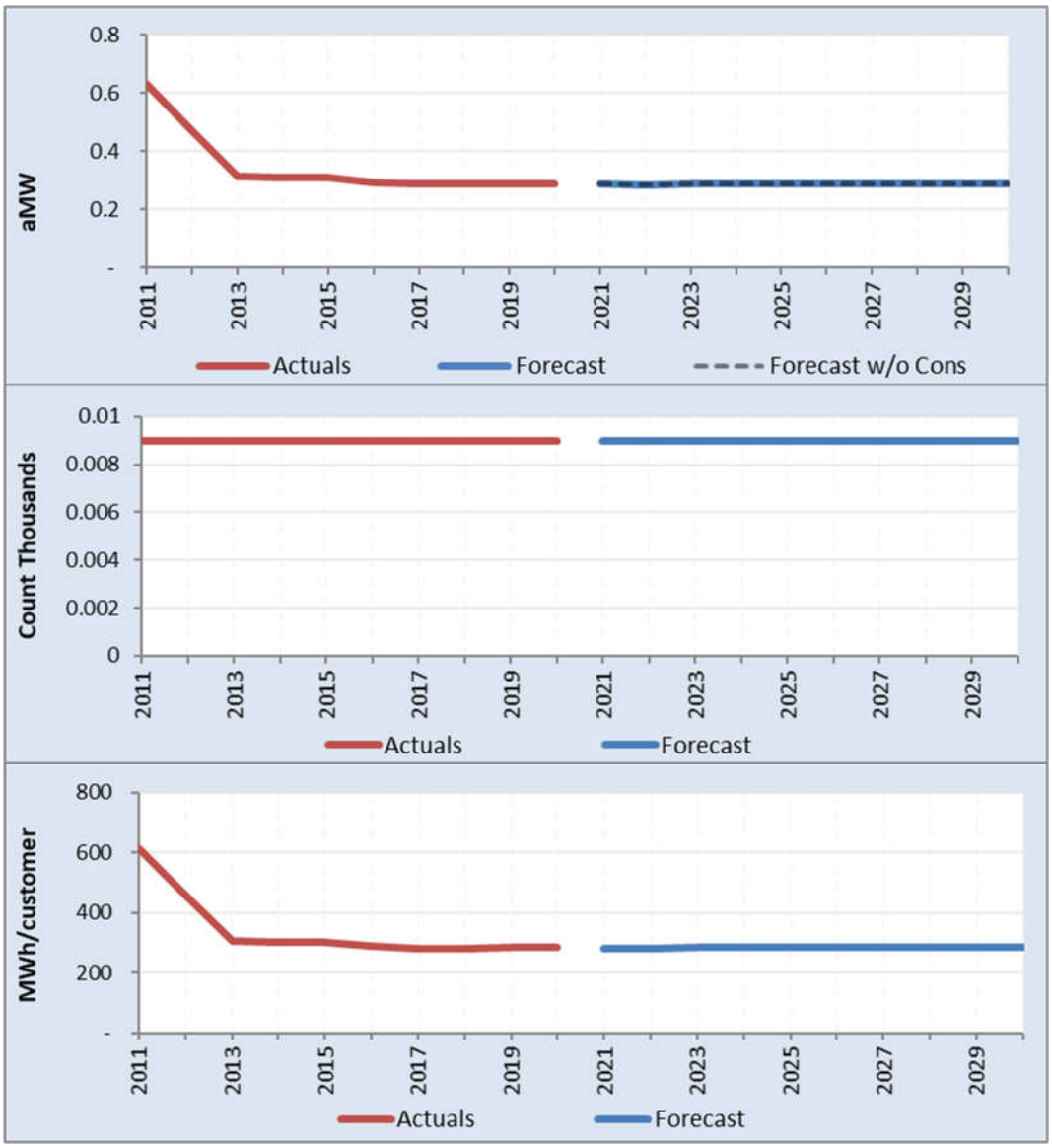

Figure 5-8 – Street Lighting forecast of retail load, customers and usage per customer

Table 5-8 – 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	#N/A	2,545	0.29	0.17%	2,545	0.29	9	0	0.00%	9	282.726
2022	#N/A	2,544	0.29	-0.02%	2,544	0.29	9	0	0.00%	9	282.683
2023	#N/A	2,545	0.29	0.05%	2,545	0.29	9	0	0.00%	9	282.825
2024	#N/A	2,553	0.29	0.03%	2,553	0.29	9	0	0.00%	9	283.678
2025	#N/A	2,546	0.29	0.00%	2,546	0.29	9	0	0.00%	9	282.908
2026	#N/A	2,546	0.29	0.01%	2,546	0.29	9	0	0.00%	9	282.933
2027	#N/A	2,547	0.29	0.01%	2,547	0.29	9	0	0.00%	9	282.956
2028	#N/A	2,554	0.29	0.02%	2,554	0.29	9	0	0.00%	9	283.794
2029	#N/A	2,547	0.29	-0.01%	2,547	0.29	9	0	0.00%	9	282.983
2030	#N/A	2,547	0.29	0.00%	2,547	0.29	9	0	0.00%	9	282.991
AARG %[1] (2021-2025)			0.02%								0.02%
AARG %[1] (2021-2030)			0.01%								0.01%

1) AARG % = Annual Average Rate of Growth Percentage

5.9 Security Lighting

The forecast for security lighting retail load is 0.10 aMW in 2021. The five and ten-year average annual rates of growth are -0.37% and -0.17% respectively. No conservation measures and no additional customers are expected to be added. See **Figure 5-9** and **Table 5-9** for the ten-year forecast detail.

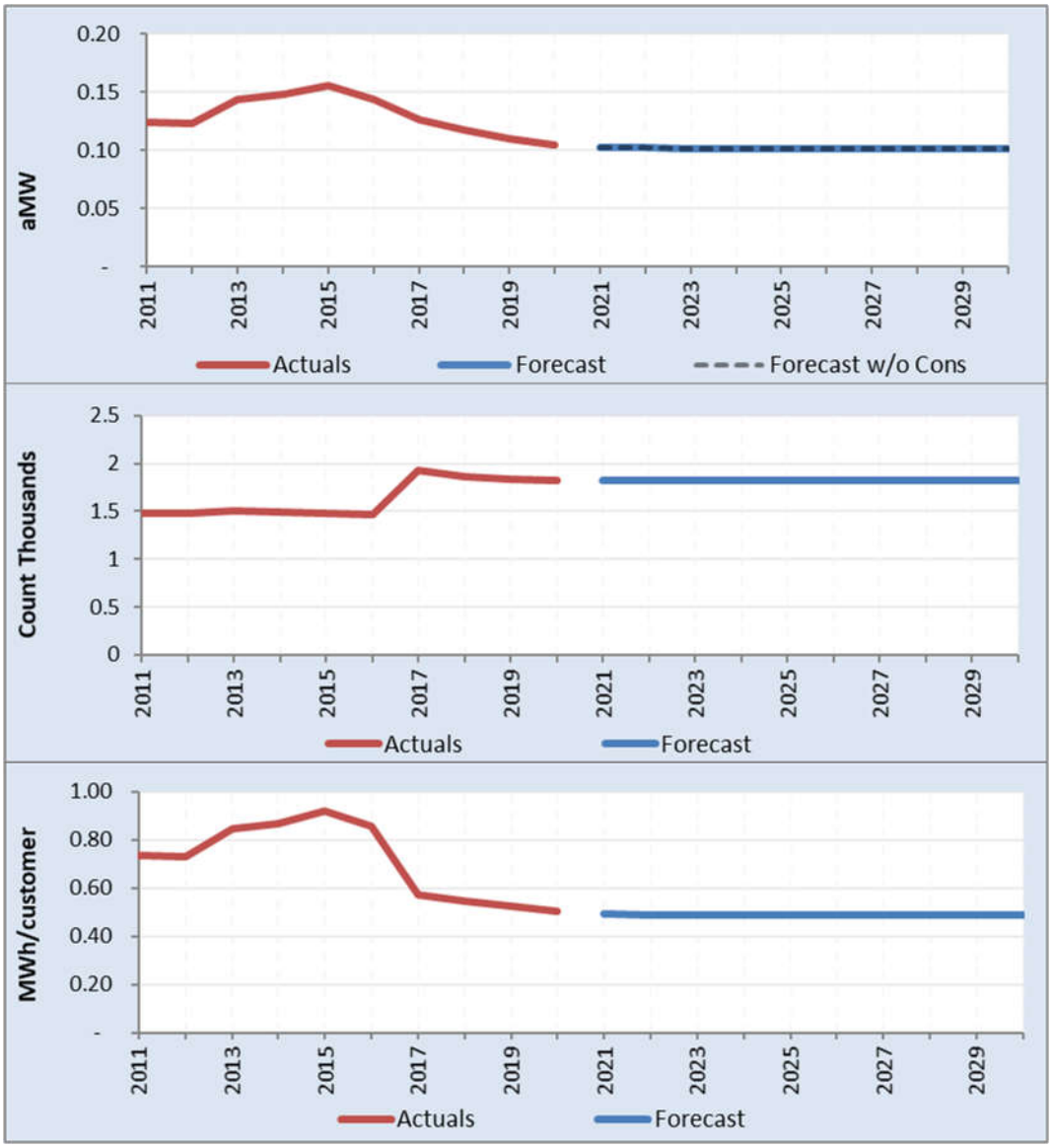

Figure 5-9 – Security Lighting forecast of retail load, customers and usage per customer

Table 5-9 – 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	1,435	#N/A	#N/A	1,440	0.741
2006	1,025	#N/A	0.12	-3.92%	#N/A	#N/A	1,431	-4	-0.28%	1,429	0.717
2007	1,028	#N/A	0.12	0.29%	#N/A	#N/A	1,448	17	1.19%	1,440	0.714
2008	1,036	#N/A	0.12	0.52%	#N/A	#N/A	1,443	-5	-0.35%	1,451	0.714
2009	1,045	#N/A	0.12	1.19%	#N/A	#N/A	1,462	19	1.32%	1,453	0.719
2010	1,068	#N/A	0.12	2.22%	#N/A	#N/A	1,478	16	1.09%	1,468	0.728
2011	1,087	#N/A	0.12	1.72%	#N/A	#N/A	1,481	3	0.20%	1,482	0.733
2012	1,084	#N/A	0.12	-0.56%	#N/A	#N/A	1,483	2	0.14%	1,480	0.732
2013	1,257	#N/A	0.14	16.34%	#N/A	#N/A	1,500	17	1.15%	1,488	0.845
2014	1,297	#N/A	0.15	3.12%	#N/A	#N/A	1,489	-11	-0.73%	1,493	0.869
2015	1,364	#N/A	0.16	5.19%	#N/A	#N/A	1,478	-11	-0.74%	1,482	0.920
2016	1,263	#N/A	0.14	-7.64%	#N/A	#N/A	1,473	-5	-0.34%	1,476	0.856
2017	1,112	#N/A	0.13	-11.72%	#N/A	#N/A	1,929	456	30.96%	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	#N/A	903	0.10	-2.02%	903	0.10	1,826	0	0.00%	1,826	0.494
2022	#N/A	895	0.10	-0.83%	895	0.10	1,826	0	0.00%	1,826	0.490
2023	#N/A	892	0.10	-0.40%	892	0.10	1,826	0	0.00%	1,826	0.488
2024	#N/A	893	0.10	-0.16%	893	0.10	1,826	0	0.00%	1,826	0.489
2025	#N/A	890	0.10	-0.10%	890	0.10	1,826	0	0.00%	1,826	0.487
2026	#N/A	889	0.10	-0.04%	889	0.10	1,826	0	0.00%	1,826	0.487
2027	#N/A	889	0.10	-0.02%	889	0.10	1,826	0	0.00%	1,826	0.487
2028	#N/A	892	0.10	0.01%	892	0.10	1,826	0	0.00%	1,826	0.488
2029	#N/A	889	0.10	-0.02%	889	0.10	1,826	0	0.00%	1,826	0.487
2030	#N/A	889	0.10	0.00%	889	0.10	1,826	0	0.00%	1,826	0.487
AARG %[1] (2021-2025)			-0.37%								-0.37%
AARG %[1] (2021-2030)			-0.17%								-0.17%

1) AARG % = Annual Average Rate of Growth Percentage

5.10 Unmetered Flats

The forecast for unmetered flats retail load is 0.35 aMW and is estimated to remain nearly flat over the ten-year forecast period, with no conservation measures and no additional customers expected to be added. See **Figure 5-10** and **Table 5-10** for the ten-year forecast detail.

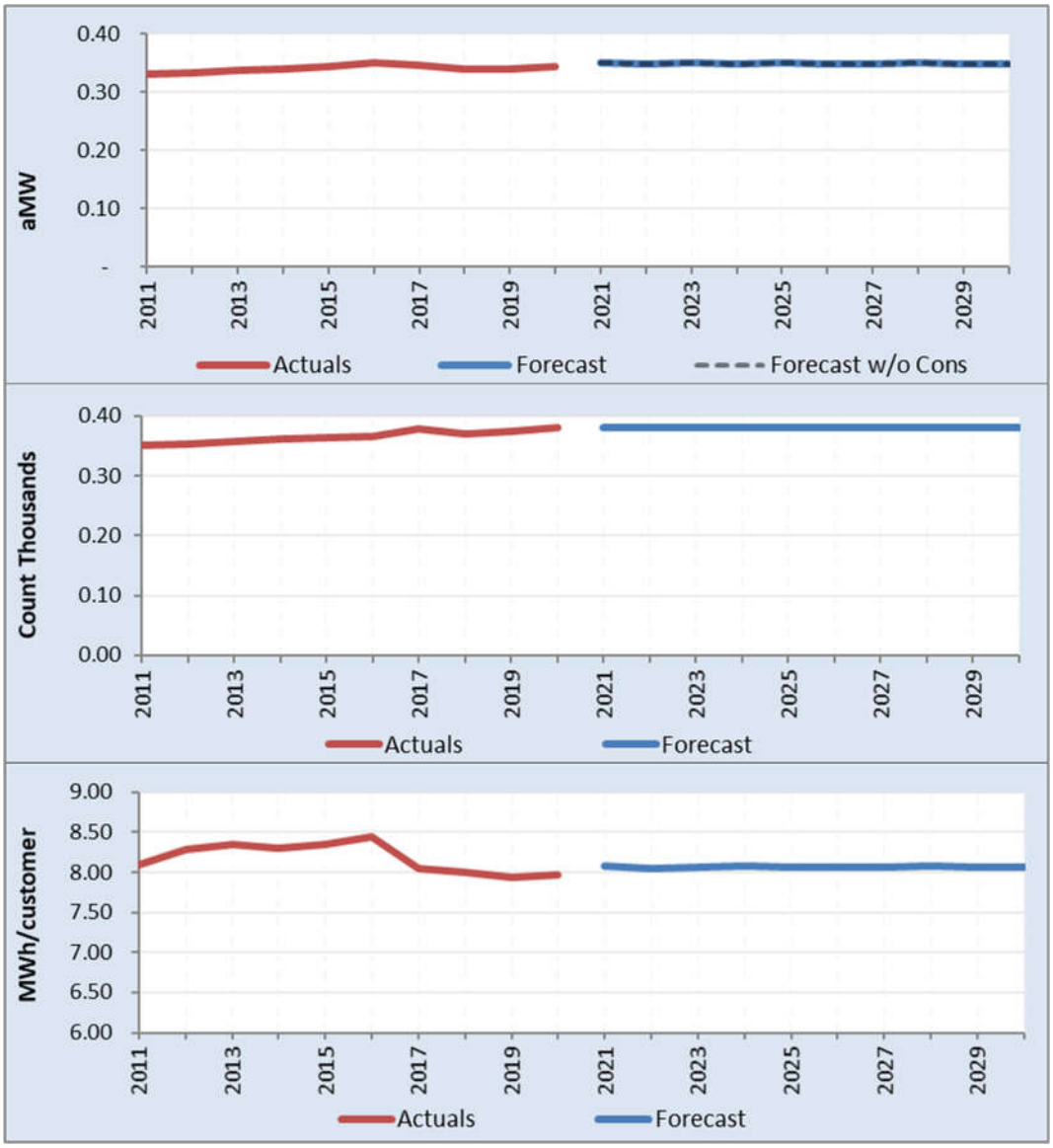

Figure 5-10 – Unmetered Flats forecast of retail load, customers and usage per customer

Table 5-10 – 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	#N/A	3,069	0.35	1.80%	3,069	0.35	380	0	0.00%	380	8.077
2022	#N/A	3,059	0.35	-0.32%	3,059	0.35	380	0	0.00%	380	8.051
2023	#N/A	3,065	0.35	0.19%	3,065	0.35	380	0	0.00%	380	8.067
2024	#N/A	3,072	0.35	-0.05%	3,072	0.35	380	0	0.00%	380	8.084
2025	#N/A	3,064	0.35	0.01%	3,064	0.35	380	0	0.00%	380	8.063
2026	#N/A	3,064	0.35	-0.01%	3,064	0.35	380	0	0.00%	380	8.062
2027	#N/A	3,064	0.35	0.01%	3,064	0.35	380	0	0.00%	380	8.063
2028	#N/A	3,073	0.35	0.02%	3,073	0.35	380	0	0.00%	380	8.086
2029	#N/A	3,064	0.35	-0.02%	3,064	0.35	380	0	0.00%	380	8.063
2030	#N/A	3,064	0.35	0.00%	3,064	0.35	380	0	0.00%	380	8.063
AARG %[1] (2021-2025)			-0.04%								-0.04%
AARG %[1] (2021-2030)			-0.02%								-0.02%

1) AARG % = Annual Average Rate of Growth Percentage

6. Appendix A – Summary Tables

Table 6-1 – 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		
Forecast	**Low**	**Base**	**High**	**aMW**	**%**	**Low**	**Base**	**High**	**aMW**	**%**	**Low**	**Base**	**High**	**Low**	**Base**	**High**
2021	192.1	201.1	210.1	6.8	3.4%	198.9	207.9	216.9	4.2	2.0%	203.2	212.3	221.1	400.5	419.3	438.1
2022	193.8	202.9	212.0	6.8	3.4%	200.7	209.8	218.8	4.3	2.0%	205.0	214.2	223.1	403.7	422.8	441.9
2023	195.0	204.1	213.2	6.9	3.4%	201.8	211.0	220.1	4.3	2.0%	206.1	215.4	224.4	406.1	425.2	444.3
2024	195.6	204.8	213.9	6.9	3.4%	202.5	211.7	220.8	4.3	2.0%	206.8	216.2	225.2	408.5	427.6	446.8
2025	196.9	206.1	215.3	7.0	3.4%	203.8	213.1	222.3	4.3	2.0%	208.2	217.6	226.6	409.9	429.3	448.6
2026	197.4	206.7	215.9	7.0	3.4%	204.4	213.6	222.9	4.3	2.0%	208.7	218.2	227.2	410.6	430.1	449.6
2027	197.8	207.1	216.3	7.0	3.4%	204.8	214.0	223.3	4.4	2.0%	209.1	218.6	227.7	411.3	430.9	450.5
2028	198.6	207.9	217.2	7.0	3.4%	205.6	214.9	224.2	4.4	2.0%	210.0	219.5	228.6	413.7	433.4	453.2
2029	199.4	208.7	218.1	7.0	3.4%	206.4	215.8	225.1	4.4	2.0%	210.8	220.4	229.5	414.2	434.0	453.8
2030	200.4	209.8	219.2	7.1	3.4%	207.5	216.9	226.3	4.4	2.0%	211.9	221.6	230.7	416.1	436.2	456.3

1) BPUD T&D = Benton P.U.D. Transmission & Distribution; Forecast 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 6-2 – 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	83.1	13.8	20.7	26.2	7.3	1.7	47.7	0.3	0.1	0.4	201.1	1.57%
2022	84.1	14.3	20.9	26.1	7.3	1.7	47.8	0.3	0.1	0.3	202.9	0.88%
2023	85.1	14.4	21.0	26.1	7.3	1.7	47.7	0.3	0.1	0.3	204.1	0.57%
2024	85.8	14.5	21.1	26.0	7.3	1.7	47.6	0.3	0.1	0.3	204.8	0.35%
2025	86.7	14.6	21.4	26.0	7.3	1.7	47.7	0.3	0.1	0.3	206.1	0.65%
2026	87.3	14.7	21.4	25.9	7.3	1.7	47.7	0.3	0.1	0.3	206.7	0.27%
2027	87.4	14.7	21.6	25.9	7.3	1.7	47.7	0.3	0.1	0.3	207.1	0.19%
2028	88.1	14.8	21.9	25.8	7.3	1.6	47.6	0.3	0.1	0.3	207.9	0.39%
2029	88.4	14.9	22.2	25.8	7.3	1.6	47.7	0.3	0.1	0.3	208.7	0.41%
2030	89.2	15.0	22.4	25.8	7.3	1.6	47.7	0.3	0.1	0.3	209.8	0.51%
AARG %[1] 2021-2025	**1.06%**	**1.41%**	**0.87%**	**-0.16%**	**-0.05%**	**-0.33%**	**0.04%**	**0.02%**	**-0.37%**	**-0.04%**	**0.61%**	
AARG %[1] 2021-2030	**0.79%**	**0.97%**	**0.90%**	**-0.18%**	**-0.02%**	**-0.53%**	**0.02%**	**0.01%**	**-0.17%**	**-0.02%**	**0.47%**	

1) AARG % = Annual Average Rate of Growth Percentage

Table 6-3 – 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
2021	87.2	14.3	21.4	27.0	7.3	1.8	50.5	0.3	0.1	0.4	210.1
2022	88.3	14.8	21.6	26.9	7.3	1.8	50.6	0.3	0.1	0.3	212.0
2023	89.3	14.9	21.7	26.9	7.3	1.8	50.6	0.3	0.1	0.3	213.2
2024	90.1	15.0	21.8	26.8	7.3	1.8	50.4	0.3	0.1	0.3	213.9
2025	91.0	15.1	22.1	26.8	7.3	1.8	50.6	0.3	0.1	0.3	215.3
2026	91.6	15.2	22.1	26.7	7.3	1.8	50.6	0.3	0.1	0.3	215.9
2027	91.7	15.2	22.4	26.7	7.3	1.7	50.6	0.3	0.1	0.3	216.3
2028	92.4	15.3	22.7	26.5	7.3	1.7	50.4	0.3	0.1	0.3	217.2
2029	92.8	15.4	23.0	26.5	7.3	1.7	50.6	0.3	0.1	0.3	218.1
2030	93.6	15.6	23.2	26.5	7.3	1.7	50.6	0.3	0.1	0.3	219.2
AARG %[1] 2021-2025	**1.06%**	**1.41%**	**0.87%**	**-0.16%**	**-0.05%**	**-0.33%**	**0.04%**	**0.02%**	**-0.37%**	**-0.04%**	**0.61%**
AARG %[1] 2021-2030	**0.79%**	**0.97%**	**0.90%**	**-0.18%**	**-0.02%**	**-0.53%**	**0.02%**	**0.01%**	**-0.17%**	**-0.02%**	**0.47%**

1) AARG % = Annual Average Rate of Growth Percentage

Table 6-4 – 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
2021	79.0	13.3	20.0	25.5	7.3	1.6	44.8	0.3	0.1	0.4	192.1
2022	80.0	13.8	20.2	25.4	7.3	1.6	44.9	0.3	0.1	0.3	193.8
2023	80.9	13.9	20.3	25.4	7.3	1.6	44.9	0.3	0.1	0.3	195.0
2024	81.6	14.0	20.4	25.3	7.3	1.6	44.8	0.3	0.1	0.3	195.6
2025	82.4	14.1	20.7	25.3	7.3	1.6	44.9	0.3	0.1	0.3	196.9
2026	82.9	14.1	20.7	25.2	7.3	1.6	44.9	0.3	0.1	0.3	197.4
2027	83.0	14.2	20.9	25.2	7.3	1.6	44.9	0.3	0.1	0.3	197.8
2028	83.7	14.3	21.2	25.1	7.3	1.6	44.8	0.3	0.1	0.3	198.6
2029	84.0	14.4	21.5	25.1	7.3	1.6	44.9	0.3	0.1	0.3	199.4
2030	84.8	14.5	21.7	25.0	7.3	1.5	44.9	0.3	0.1	0.3	200.4
AARG %[1] 2021-2025	**1.06%**	**1.41%**	**0.87%**	**-0.16%**	**-0.05%**	**-0.33%**	**0.04%**	**0.02%**	**-0.37%**	**-0.04%**	**0.61%**
AARG %[1] 2021-2030	**0.79%**	**0.97%**	**0.90%**	**-0.18%**	**-0.02%**	**-0.53%**	**0.02%**	**0.01%**	**-0.17%**	**-0.02%**	**0.47%**

1) AARG % = Annual Average Rate of Growth Percentage

Table 6-5 – 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
Min. 2005-2020	**167.3**	**157.1**	**145.0**	**151.7**	**174.5**	**204.6**	**245.0**	**233.4**	**167.1**	**124.0**	**127.3**	**155.2**	**177.6**
Avg. 2016-2020	**194.2**	**194.2**	**166.7**	**177.6**	**197.7**	**259.7**	**273.4**	**261.8**	**194.5**	**148.3**	**148.4**	**170.8**	**199.0**
Max. 2005-2020	**228.0**	**221.2**	**192.3**	**194.3**	**210.4**	**288.8**	**296.2**	**277.4**	**209.0**	**161.9**	**160.2**	**184.3**	**203.8**
2021	182.4	199.9	179.6	183.8	202.6	260.0	279.6	268.7	180.5	157.1	147.4	171.7	201.1
2022	187.4	203.6	182.4	185.1	201.8	260.5	281.2	271.7	181.8	155.2	145.7	178.3	202.9
2023	186.6	199.9	181.3	184.8	201.4	262.1	288.2	272.6	181.9	158.2	144.2	187.2	204.1
2024	189.8	198.9	180.1	190.9	204.9	260.7	283.1	272.6	184.4	160.1	150.7	181.1	204.8
2025	187.3	208.5	187.4	188.8	203.9	261.9	286.6	274.6	183.5	159.8	153.9	177.6	206.1
2026	195.9	204.8	183.6	188.7	204.6	264.4	285.2	276.4	184.8	158.3	150.6	183.0	206.7
2027	190.4	203.8	190.4	191.4	203.2	263.7	285.3	274.8	184.2	157.7	151.8	188.3	207.1
2028	194.5	203.6	184.7	192.2	204.6	263.3	286.3	277.1	184.6	160.7	153.9	189.6	207.9
2029	193.9	207.1	186.8	193.1	206.4	264.6	287.1	277.1	186.5	161.0	155.6	186.5	208.7
2030	196.5	211.5	189.4	192.1	206.2	265.5	287.3	278.8	187.0	161.2	156.0	187.3	209.8

Table 6-6 – 2021 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	0.1	0.0	0.5	1.2	2.6	3.6	4.1	3.9	2.6	1.4	0.3	0.1	1.7
Large Irrigation	0.0	0.0	24.8	46.2	80.6	120.0	133.4	101.2	28.7	32.6	0.0	0.0	47.7
Residential	112.7	125.1	89.7	73.0	58.9	68.8	73.9	86.0	75.7	54.9	78.3	102.8	83.1
Small General	14.8	16.5	13.7	12.2	11.5	13.5	14.2	16.0	14.8	11.9	12.8	14.1	13.8
Medium General	21.5	23.0	19.1	18.5	17.7	20.3	20.5	22.7	21.5	20.6	21.2	21.6	20.7
Large General	24.9	26.8	23.4	24.7	23.5	26.0	26.3	30.2	29.9	27.9	26.2	24.6	26.2
Large Industrial	7.6	7.7	7.6	7.3	7.0	7.1	6.4	7.9	6.6	7.0	7.7	7.7	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	0.4	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.4
System Total	**182.4**	**199.9**	**179.6**	**183.8**	**202.6**	**260.0**	**279.6**	**268.7**	**180.5**	**157.1**	**147.4**	**171.7**	**201.1**

Figure 6-1 – 2021 BASE case forecast of MONTHLY and annual retail load (aMW) by customer class

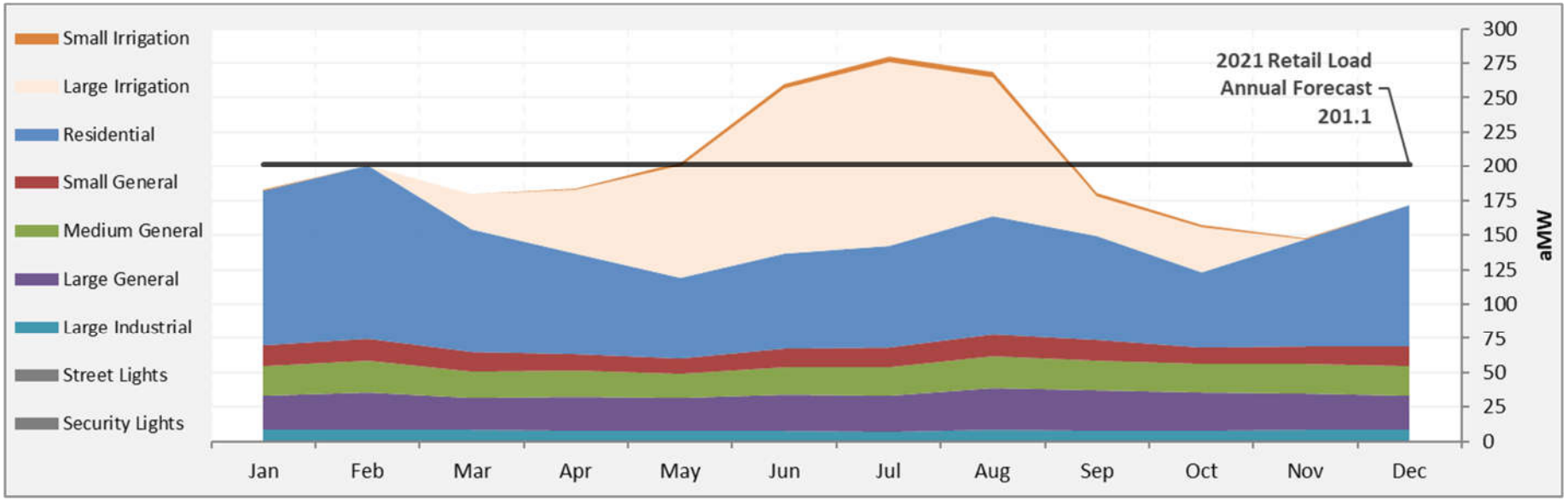

Table 6-7 – Historical and forecast of annual average number of customers by customer class

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	3	622	96	9	1,440	353	44,389	#N/A
2006	37,418	4,169	636	126	3	614	99	9	1,429	353	44,856	1.05%
2007	37,969	4,295	654	128	3	607	110	9	1,440	354	45,569	1.59%
2008	38,855	4,385	676	131	3	615	121	9	1,451	354	46,600	2.26%
2009	39,220	4,460	695	134	3	615	131	9	1,453	354	47,074	1.02%
2010	39,687	4,503	718	135	3	602	134	9	1,468	358	47,617	1.15%
2011	40,201	4,553	732	136	3	582	140	9	1,482	359	48,197	1.22%
2012	40,645	4,610	747	142	3	563	158	9	1,480	353	48,710	1.06%
2013	41,321	4,682	746	144	3	564	208	9	1,488	355	49,520	1.66%
2014	41,758	4,741	754	148	3	563	225	9	1,493	359	50,053	1.08%
2015	42,375	4,828	758	151	3	560	234	9	1,482	362	50,762	1.42%
2016	43,157	4,915	768	157	5	558	233	9	1,476	365	51,643	1.74%
2017	43,870	4,977	782	160	5	557	430	9	1,943	378	53,111	2.84%
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	46,699	5,162	814	177	5	552	436	9	1,826	380	56,061	1.30%
2022	47,379	5,216	825	181	5	551	436	9	1,826	380	56,806	1.33%
2023	48,103	5,276	836	184	5	548	436	9	1,826	380	57,603	1.40%
2024	48,826	5,336	846	188	5	545	436	9	1,826	380	58,397	1.38%
2025	49,549	5,396	857	191	5	542	436	9	1,826	380	59,190	1.36%
2026	50,270	5,456	868	195	5	538	436	9	1,826	380	59,982	1.34%
2027	50,990	5,516	878	198	5	534	436	9	1,826	380	60,772	1.32%
2028	51,709	5,577	889	201	5	530	436	9	1,826	380	61,562	1.30%
2029	52,427	5,637	900	205	5	526	436	9	1,826	380	62,350	1.28%
2030	53,144	5,697	910	208	5	522	436	9	1,826	380	63,137	1.26%
AARG %[1] 2021-2025	**1.49%**	**1.11%**	**1.29%**	**1.88%**	**0.00%**	**-0.48%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**1.37%**	
AARG %[1] 2021-2030	**1.45%**	**1.10%**	**1.25%**	**1.80%**	**0.00%**	**-0.62%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**1.33%**	

1) AARG % = Annual Average Rate of Growth Percentage

Table 6-8 – 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	17,761,932	25,280	3,978,407	451,882	741	7,059	36,101	#N/A
2006	16,896	27,034	252,263	1,880,220	12,485,305	23,298	3,573,162	453,740	717	8,026	34,682	-3.93%
2007	16,972	26,787	252,577	1,744,660	16,348,383	26,110	3,512,746	461,266	714	8,041	35,271	1.70%
2008	17,151	26,366	250,845	1,717,234	15,920,098	26,086	3,234,619	468,669	714	8,046	35,190	-0.23%
2009	18,402	27,260	252,179	1,741,869	12,969,692	27,453	3,132,715	474,203	719	8,122	36,673	4.21%
2010	16,498	25,202	237,977	1,619,899	18,454,887	23,997	2,663,248	482,159	728	8,089	33,450	-8.79%
2011	17,113	25,991	239,704	1,541,682	21,803,603	25,097	2,624,234	614,671	733	8,103	34,201	2.24%
2012	16,435	25,905	235,607	1,530,826	23,525,055	26,936	2,345,402	459,597	732	8,294	33,777	-1.24%
2013	16,889	26,255	237,601	1,523,024	23,267,593	26,970	1,862,539	305,647	845	8,348	34,264	1.44%
2014	16,687	26,215	241,437	1,531,617	23,956,495	30,566	2,024,154	302,278	869	8,302	35,589	3.86%
2015	15,705	25,165	240,911	1,497,847	22,313,962	29,330	1,930,671	300,405	920	8,350	34,239	-3.79%
2016	15,333	24,795	234,983	1,422,089	12,922,450	27,952	1,800,809	287,682	856	8,447	32,804	-4.19%
2017	17,316	25,930	238,050	1,441,715	13,416,822	24,694	911,746	281,642	572	8,054	33,611	2.46%
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	15,585	23,378	222,392	1,293,900	12,770,124	27,028	957,540	282,726	494	8,077	31,428	-0.01%
2022	15,558	24,048	221,645	1,264,839	12,733,515	27,102	959,444	282,683	490	8,051	31,291	-0.44%
2023	15,499	23,911	220,156	1,241,381	12,750,091	27,067	958,956	282,825	488	8,067	31,035	-0.82%
2024	15,441	23,845	219,275	1,218,293	12,778,996	27,320	959,081	283,678	489	8,084	30,803	-0.75%
2025	15,322	23,655	218,743	1,193,180	12,745,984	27,191	959,049	282,908	487	8,063	30,503	-0.97%
2026	15,208	23,527	215,975	1,167,111	12,744,445	27,260	959,057	282,933	487	8,062	30,183	-1.05%
2027	15,010	23,398	215,714	1,146,661	12,745,142	27,230	959,055	282,956	487	8,063	29,847	-1.11%
2028	14,958	23,326	216,760	1,125,414	12,781,262	27,250	959,056	283,794	488	8,086	29,660	-0.62%
2029	14,775	23,153	216,357	1,103,245	12,744,969	27,245	959,056	282,983	487	8,063	29,326	-1.13%
2030	14,702	23,112	215,648	1,084,380	12,744,905	27,253	959,056	282,991	487	8,063	29,109	-0.74%
AARG %[1] 2021-2025	**-0.43%**	**0.30%**	**-0.41%**	**-2.01%**	**-0.05%**	**0.15%**	**0.04%**	**0.02%**	**-0.37%**	**-0.04%**	**-0.74%**	
AARG %[1] 2021-2030	**-0.65%**	**-0.13%**	**-0.34%**	**-1.94%**	**-0.02%**	**0.09%**	**0.02%**	**0.01%**	**-0.17%**	**-0.02%**	**-0.85%**	

1) AARG % = Annual Average Rate of Growth Percentage

Table 6-9 – 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	3	619	96	9	1,435	352	44,628	#N/A
2006	37,802	4,232	641	127	3	602	101	9	1,431	354	45,302	1.51%
2007	38,285	4,324	665	131	3	609	116	9	1,448	354	45,944	1.42%
2008	39,095	4,445	683	132	3	615	124	9	1,443	354	46,903	2.09%
2009	39,430	4,484	707	135	3	610	133	9	1,462	355	47,328	0.91%
2010	39,973	4,528	725	135	3	594	130	9	1,478	362	47,937	1.29%
2011	40,432	4,576	747	141	3	573	142	9	1,481	351	48,455	1.08%
2012	40,955	4,652	742	143	3	555	163	9	1,483	354	49,059	1.25%
2013	41,561	4,709	750	146	3	563	218	9	1,500	357	49,816	1.54%
2014	42,039	4,784	758	151	3	559	229	9	1,489	361	50,382	1.14%
2015	42,724	4,883	762	153	3	558	232	9	1,478	364	51,166	1.56%
2016	43,574	4,949	775	160	5	556	230	9	1,473	366	52,097	1.82%
2017	44,177	5,011	785	160	5	546	433	9	1,929	378	53,433	2.56%
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	46,986	5,183	819	179	5	540	436	9	1,826	380	56,363	1.14%
2022	47,711	5,243	830	182	5	538	436	9	1,826	380	57,160	1.41%
2023	48,435	5,303	841	186	5	535	436	9	1,826	380	57,956	1.39%
2024	49,158	5,363	851	189	5	532	436	9	1,826	380	58,749	1.37%
2025	49,879	5,423	862	193	5	528	436	9	1,826	380	59,541	1.35%
2026	50,600	5,483	873	196	5	525	436	9	1,826	380	60,333	1.33%
2027	51,320	5,544	883	200	5	521	436	9	1,826	380	61,124	1.31%
2028	52,038	5,604	894	203	5	517	436	9	1,826	380	61,912	1.29%
2029	52,755	5,664	905	206	5	513	436	9	1,826	380	62,699	1.27%
2030	53,472	5,724	915	210	5	509	436	9	1,826	380	63,486	1.26%
AARG %[1] 2021-2025	**1.50%**	**1.14%**	**1.29%**	**1.90%**	**0.00%**	**-0.56%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**1.38%**	
AARG %[1] 2021-2030	**1.45%**	**1.11%**	**1.24%**	**1.79%**	**0.00%**	**-0.65%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**1.33%**	

1) AARG % = Annual Average Rate of Growth Percentage

Table 6-10 – Historical and forecast annual change in number of customers by customer class[1]

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	2	(2)	(2)	0	(5)	2	931	18.75%
2017	603	62	10	0	0	(10)	11	0	(29)	12	659	-29.22%
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	588	37	10	3	0	0	0	0	0	0	638	-20.15%
2022	725	60	11	3	0	(2)	0	0	0	0	797	24.92%
2023	724	60	11	4	0	(3)	0	0	0	0	796	-0.13%
2024	723	60	10	3	0	(3)	0	0	0	0	793	-0.38%
2025	721	60	11	4	0	(4)	0	0	0	0	792	-0.13%
2026	721	60	11	3	0	(3)	0	0	0	0	792	0.00%
2027	720	61	10	4	0	(4)	0	0	0	0	791	-0.13%
2028	718	60	11	3	0	(4)	0	0	0	0	788	-0.38%
2029	717	60	11	3	0	(4)	0	0	0	0	787	-0.13%
2030	717	60	10	4	0	(4)	0	0	0	0	787	0.00%

1) Annual change in 2017 adjusted to reduce Large Irrigation by 192 and to reduce Security Lights by 485 due to counting methodology changes associated with NISC software conversion.

Capital Requirements Plan

Tab 9

Capital Requirements Plan - Combined Summary - 2022 Budget

Capital Category	2021 Original Budget	2021 Amended Budget	2022	2023	2024	2025	2026
Transmission	$3,805,851	$1,103,336	$6,223,927	$395,176	$450,000	$3,985,000	$3,183,545
Distribution	$12,220,521	$16,325,205	$14,804,468	$12,110,090	$11,627,882	$9,904,933	$9,941,675
Broadband	$1,827,034	$1,089,526	$1,868,731	$1,404,841	$1,358,336	$1,411,212	$1,319,960
General Plant	$1,655,755	$1,679,704	$1,503,000	$1,187,500	$1,157,500	$1,206,500	$887,500
IT	$1,145,103	$730,283	$1,057,802	$578,248	$418,570	$799,448	$799,778
Security	$614,236	$14,144	$991,640	$616,640	$616,640		
Contributions in Aid	($2,451,526)	($2,826,924)	($2,599,537)	($2,540,737)	($2,546,987)	($2,546,987)	($2,546,987)
Grand Total	**$18,816,974**	**$18,115,274**	**$23,850,031**	**$13,751,758**	**$13,081,941**	**$14,760,107**	**$13,585,471**

Capital Requirements Plan
Transmission - 2022 Budget

Project Name	BU Project	2021 Original Budget	2021 Amended Budget	2022	2023	2024	2025	2026
Poles & Fixtures, Misc Repairs	75	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000
Switch Upgrade/Additions	137	$74,000	$74,000	$74,000	$150,000	$150,000	$75,000	$75,000
WO# 511742 - Transmission Line-Phillips to Spaw	212	$3,259,435	$737,082	$4,693,602				
WO# 605447 - Transmission Study - River System	299	$153,447	$84,700	$59,427				
WO# XXXXXX - Hedges 115kV Metering Point	169	$203,969		$209,024				
WO# XXXXXX - Transmission Line - Klickitat to Horse Heaven Tie	294	$15,000						
WO# 625884 - Spaw Phillips 115kV Breaker	334		$82,554	$624,074				
WO# XXXXXX - Weber Canyon to Prosser Tie	353		$25,000			$200,000	$3,810,000	
WO# 503229 - Transmission Line-Sunset Rd to Dallas Rd	77				$145,176			$2,758,545
WO# 608670 - Plymouth Transmission Tie Switch	300			$463,800				
WO# 534224 - Transmission Line-Hwy 240 to Edison Sub	170							$250,000
Grand Total		**$3,805,851**	**$1,103,336**	**$6,223,927**	**$395,176**	**$450,000**	**$3,985,000**	**$3,183,545**

Capital Requirements Plan
Distribution - 2022 Budget

Project Group	Project	Project Name	BU Project	2021 Original Budget	2021 Amended Budget	2022	2023	2024	2025	2026
Capacity & Reliability	9 - Dist. 5 Year Plan	POS#58 - WO# XXXXXX - BEC-3, new feeder to east to tie with S..	205	$743,329	$188,183	$563,056				
		POS#111 - WO#606006 - RTA-3 Recond Utilize 4" for 3 phase	290	$79,035	$43,442	$43,442				
		WO# 503528 - Voltage Optimization - Kennewick	151	$302,548	$300,395					
		POS#10 - WO# XXXXXX - GUM-4, dbl cir on 36th, recond 3/0 on O..	254	$171,738	$317,531					
		POS#117 - WO#XXXXXX - SSR-1 offload to SSR3 (Switches)	292	$20,401	$20,281					
		POS#118 - WO#XXXXXX - PSR-6 Switch additions	293	$10,406	$10,966					
		POS#115 - WO#XXXXXX - RTA-2 to RTA-1 Offload	291	$269,008		$300,313				
		POS#81 - WO# XXXXXX - PHI-8, new feeder north to Cochrane	297	$214,780		$269,762				
		POS#102 - WO#XXXXXX - HED-4 Getaway Reconductor	288	$62,788		$78,619				
		POS#110 - WO#XXXXXX - RTA-2 Recond #2 Country Meadows L..	289	$7,866						
		POS#10 - WO# 606711 - GUM-4, OH Portion of Gum 4	254		$107,174					
		POS#32 - WO#597473 - RTA-3, extend UG west along Sagebrus..	203		$250,245					
		POS#11 - WO# XXXXXX - GUM-4, HED-3, recond. 3/0, Bowles Rd.	331			$262,077				
		POS#119 - WO#XXXXXX - PSR-3 Reconductor	332			$242,822				
		POS#38 - WO#505924 - VIS-1 to Vis-6 Across Quinalt	152			$144,731				
		POS#12 - WO# XXXXXX - GUM - 4 Reconductor #4 ACSR, Oak St.	Null				$272,478			
		POS#41 - WO# XXXXXX - ZEH-4, new OH tie to GUM-4 at Game F..	206				$271,493			
		POS#19 - WO# XXXXXX - HED-3 , Reconductor #4 Terril Rd.	Null				$227,251			
		POS#36A - WO#XXXXXX - SSR-3 Reconducctor (DNR Land) WEST	Null				$224,300			
		POS#105 - WO#XXXXXX - KEN-9 Reconductor down Washington	Null				$149,350			
		POS#21 - WO# XXXXXX - HED - 4 Reconductor #6, Bernath Rd.	211				$16,908			
		POS#14 - WO# 615367 - GUM-4, new OH tie HED-3, Game Farm ..	308				$9,100			
		POS#20 - WO# XXXXXX - HED - 4 Reconductor 3/0 ACSR, Perkins ..	204					$412,555		
		POS#13 - WO# XXXXXX - GUM - 4 Reconductor #4 ACSR, Game F..	Null					$335,276		
		POS#36B - WO#XXXXXX - SSR-3 Reconducctor (DNR Land) EAST	Null					$224,300		
		POS#15 - WO# 615372 - HIG-4, recond. 3/0, W. 10th Ave.	309					$200,000		
		POS#54 - WO# XXXXXX ZEH-3, recond. 1/0 to serve GUM-3	Null					$189,358		
		POS#56 - WO# XXXXXX - ELY-8, recond. 3/0, near Ely St.	Null					$65,700		
		POS#95 - WO# XXXXXX - HED-2, recond #266.8, Finley Rd	Null						$245,000	
		POS#39 - WO# XXXXXX - ZEH-1, new OH line and UG tie with E7	Null						$185,854	
		POS#22 - WO# XXXXXX - KEN-8, Reconductor Across Fairgrounds	Null						$100,000	
		POS#113 - ELY-2 Reconductor 3/0 ACSR along Garfield St	Null						$30,500	
		POS#79 - WO# XXXXXX RTA-2, Recond. Badger Rd. Btwn L766A ..	Null							$130,000
		Total		**$1,881,900**	**$1,238,217**	**$1,904,821**	**$1,170,879**	**$1,427,189**	**$561,354**	**$130,000**
	17 - Dist. System Improvement	Dist System Improvements	141	$316,671	$483,242	$455,920	$315,489	$315,489	$315,489	$315,489
		WO# 614706 -Southridge Sub S4 Feeder Getaways	207	$705,298	$338,107					
		WO# 561020 - Ridgeline Under Pass	178	$774,117	$900,605					
		Vista Substation Feeder Getaways	296	$7,955		$1,128,737				
		WO#621801-Southridge S1,S2,S3 Feeder Getaways	207		$8,302	$836,409				
		Angus Substation Getaways	316		$1,030,615					
		WO# 626081 - Gum Street Fedder Getaway Replacement	322		$155,623					
		WO#618763-Southridge S4 Conduit Extension	207		$134,839					
		Fire Mitigation - OH Line Reconstruction	312			$250,000	$250,000	$250,000	$250,000	$250,000

Capital Requirements Plan
Distribution - 2022 Budget

Project Group	Project	Project Name	BU Project	2021 Original Budget	2021 Amended Budget	2022	2023	2024	2025	2026
Capacity & Reliability	17 - Dist. System Improvement	WO# XXXXXX -Edison Street Sub Feeder Getaways	Null							$750,000
		Total		**$1,804,041**	**$3,051,333**	**$2,671,066**	**$565,489**	**$565,489**	**$565,489**	**$1,315,489**
	22 - Scada	Distribution voltage regulator SCADA	143	$74,800	$236,064					
		Fiber to Substations & Line Devices	144	$79,016						
		Substation RTU & radio communications upgrades	97	$49,789						
		WO#XXXXXX - Fiber to Horse Heaven Sub	144		$43,083					
		WO#597657- Line Regulators SCADA Easterday	97		$40,768					
		WO#613715 - Highlands Sub SCADA Upgrades	202		$36,503					
		WO#597660- Line Regulators SCADA H2F/Prior	97		$34,442					
		WO#603157 - Kennewick Sub SCADA Upgrades	202		$32,548					
		WO#566834- Fiber to H2F2	144		$26,155					
		WO#566830 - Fiber to Chevron Sub	202		$17,021					
		WO#611876 - Gum Substation SCADA upgrades	202		$12,138					
		WO#597656- Line Regulators SCADA Whitcomb/Paterson	97		$11,737					
		WO#597661- Line Regulators SCADA Sun Heaven	97		$11,791					
		WO#597659- Line Regulators SCADA Spaw	97		$9,361					
		WO#599344 - Relocate LIGO Metering Point	202		$5,429					
		WO#588052- Line Regulators SCADA Gum/Zephyr	97		$5,165					
		WO#588053- Line Regulators SCADA Bandger Canyon	97		$5,058					
		WO# XXXXXX - Angus Substation Scada Ugrades	202			$84,074				
		WO# XXXXXX - SCADA Communications Network Study	333			$75,000				
		WO# XXXXXX - Vista Substation Scada Ugrades	202			$57,402				
		WO#613714 - Zephyr Height SCADA Upgrades	202			$32,548				
		WO#566821- Fiber to Prior #1	144			$26,260				
		WO#XXXXXX - Fiber Backbone to Carma	144				$509,558			
		WO#XXXXXX - Fiber to Paterson 1&2, SunHeaven River	144				$440	$103,416		
		WO# XXXXXX - Prosser Substation Scada Ugrades	202					$84,669		
		WO#XXXXXX - Fiber to Sandpiper	144					$59,184		
		WO#XXXXXX - Fiber to Whitcomb	144					$31,182		
		WO#XXXXXX - Fiber to Carma	144					$25,710		
		WO#XXXXXX- Fiber to Carma Metering point (KPUD)	144						$43,084	
		Total		**$203,606**	**$527,264**	**$275,284**	**$509,998**	**$304,161**	**$43,084**	
	23 - Substations	Substation Misc. Aux Equip, Relays/Controls	148	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000
		WO# 524249 - Feeder Position Addition-Phillips P8R	167	$39,968	$62,809					
		WO# 509174 - Xfmr & Feeder Relay Upgrade - Ely #1	304	$133,831	$536,955					
		WO# 605674 - Xfmr & Feeder Relay Upgrade-Gum Street	202	$133,831	$299,652					
		WO# 604784 - Prosser Animal Fence	116	$49,760	$49,661					
		WO# 621843 - Zephyr Heights Battery Bank Replacement	286	$14,736	$14,679					
		WO# 624796 - Angus Bay #2 Feeder Breaker & Bay Relay Replac..	287	$154,411		$185,831				
		WO# 591902 - 735 Meter install at H2F3 Substation	110	$9,946						
		WO# XXXXXX - 735 Meter install at Sandpiper Substation	113	$9,946						
		WO# 623025 - Phillips Animal Fence	321		$49,760					
		WO#616807 - DC Panel Addition at Prosser Substation	307		$4,552					

Capital Requirements Plan
Distribution - 2022 Budget

Project Group	Project	Project Name	BU Project	2021 Original Budget	2021 Amended Budget	2022	2023	2024	2025	2026
Capacity & Reliability	23 - Substations	WO# 623148 - Angus Bay #1 Feeder Breaker & Relay Replaceme..	318			$185,831				
		WO# XXXXXX - Kennewick Battery Bank Replacement	330			$16,472				
		WO#XXXXXX - Prosser Bay #1 Voltage Reg Replacement	351			$407,641	$17,256			
		WO# XXXXXX- Prosser Bay #1 CS & Diff Addition	Null				$200,000			
		WO#XXXXXX - Ridgeline Substation Fence/Gravel	325			$15,000				
		WO# XXXXXX - Vista Bay #1 Metalclad Switchgear Replacement	Null				$620,424			
		WO# XXXXXX - Angus Bay #3 Feeder Breaker & Relay Replaceme..	Null				$154,411			
		WO# XXXXXX - River Front Battery Bank Replacement	Null				$15,000			
		WO# XXXXXX - Vista Bay #2 Metalclad Switchgear Replacement	Null					$617,602		
		WO#XXXXXX - Prosser Bay #2 Voltage Reg Replacement	Null				$391,696	$17,256		
		WO# XXXXXX- Prosser Bay #2 CS & Diff Addition	Null					$200,000		
		WO# XXXXXX- Relay Upgrades River Front Substation	Null						$238,821	
		Total		**$571,429**	**$1,043,067**	**$835,775**	**$1,423,788**	**$859,857**	**$263,821**	**$25,000**
	Capacity & Reliability	Distribution Regulators	323		$40,000	$156,000	$75,000	$75,000	$75,000	$75,000
		Total			**$40,000**	**$156,000**	**$75,000**	**$75,000**	**$75,000**	**$75,000**
	Land & Land Rights	WO# 594443 - Ridgeline Substation Property Acquisition	226	$332,214	$308,930					
		Done - WO# 594443 - Ridgeline Substation Property Acquisition	226		$243					
		Total		**$332,214**	**$309,173**					
	Total			**$4,793,189**	**$6,209,054**	**$5,842,945**	**$3,745,154**	**$3,231,696**	**$1,508,748**	**$1,545,489**
Customer Growth	17 - Dist. System Improvement	WO# XXXXXX -Southridge Sub Feeder Getaways	207	$183,719						
		Clodfelter Reconductor	324		$54,619	$104,239				
		Total		**$183,719**	**$54,619**	**$104,239**				
	20 - Service Poles	Service Poles	93	$20,000	$40,000	$30,000	$30,000	$30,000	$30,000	$30,000
		Total		**$20,000**	**$40,000**	**$30,000**	**$30,000**	**$30,000**	**$30,000**	**$30,000**
	30 - Sum Base Growth	Dist Base Growth	140	$2,009,033	$3,531,000	$2,607,749	$2,896,303	$2,896,303	$2,896,303	$2,896,303
		Total		**$2,009,033**	**$3,531,000**	**$2,607,749**	**$2,896,303**	**$2,896,303**	**$2,896,303**	**$2,896,303**
	42 - Service Work	Services, Set Xfmrs, Run Secondary	94	$2,311,394	$2,818,215	$2,633,352	$2,633,352	$2,633,352	$2,633,352	$2,633,352
		Total		**$2,311,394**	**$2,818,215**	**$2,633,352**	**$2,633,352**	**$2,633,352**	**$2,633,352**	**$2,633,352**
	Land & Land Rights	New Permits (Crossing, Etc.)	140	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
		County Recording Fees - Easements	140	$7,500	$11,250	$15,000	$15,000	$15,000	$15,000	$15,000
		Title Reports for Construction Projects	140	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500
		Total		**$20,000**	**$23,750**	**$27,500**	**$27,500**	**$27,500**	**$27,500**	**$27,500**
	Total			**$4,544,146**	**$6,467,584**	**$5,402,840**	**$5,587,155**	**$5,587,155**	**$5,587,155**	**$5,587,155**
General Plant	Meters	Meters	86	$200,000	$350,000	$200,000	$200,000	$200,000	$200,000	$200,000
		Meter Change-outs	336			$430,000	$350,000	$350,000	$350,000	$350,000
		Total		**$200,000**	**$350,000**	**$630,000**	**$550,000**	**$550,000**	**$550,000**	**$550,000**
	Total			**$200,000**	**$350,000**	**$630,000**	**$550,000**	**$550,000**	**$550,000**	**$550,000**
Other	19 - NESC Standards Compliance	JU - NESC Compliance Program	145	$125,000	$156,250	$156,250	$156,250	$187,500	$187,500	$187,500
		Total		**$125,000**	**$156,250**	**$156,250**	**$156,250**	**$187,500**	**$187,500**	**$187,500**
	Other	Equipment Overhead Allocation	122	$477,288	$676,232	$614,342				
		Material Overhead Allocation	298	$88,000						
		Customer Transfer - City of Richland	246		$7,755					
		Total		**$565,288**	**$683,987**	**$614,342**				

Capital Requirements Plan
Distribution - 2022 Budget

Project Group	Project	Project Name	BU Project	2021 Original Budget	2021 Amended Budget	2022	2023	2024	2025	2026
Other	**Total**			**$690,288**	**$840,237**	**$770,592**	**$156,250**	**$187,500**	**$187,500**	**$187,500**
Repair & Replace	12 - Dist. Cable Replacement Projects	Repair & Replacement - Cable	147	$1,498,252	$1,466,884	$1,532,924	$1,466,884	$1,466,884	$1,466,884	$1,466,884
		Total		**$1,498,252**	**$1,466,884**	**$1,532,924**	**$1,466,884**	**$1,466,884**	**$1,466,884**	**$1,466,884**
	14 - Dist. Other Maintenance	Repair & Replacement - Other	92	$265,000	$265,000	$265,000	$265,000	$265,000	$265,000	$265,000
		Trouble Orders	149	$190,000	$580,886	$320,520	$300,000	$300,000	$300,000	$300,000
		Total		**$455,000**	**$845,886**	**$585,520**	**$565,000**	**$565,000**	**$565,000**	**$565,000**
	16 - Dist. Pole Replacement	Distribution Pole Replacement	160	$39,646	$39,422	$39,647	$39,647	$39,647	$39,647	$39,647
		Total		**$39,646**	**$39,422**	**$39,647**	**$39,647**	**$39,647**	**$39,647**	**$39,647**
	23 - Substations	WO#617486 - PMH-10 Switchgear at Gum St. Substation	310		$41,170					
		WO#618736 - Mobile substation control upgrades	314		$49,025					
		WO#613706 - Prior #2 S248F Fuse	306		$11,390					
		WO#617616 - DC Panel Replacement Sunset Rd. Substation	311		$4,552					
		Total			**$106,137**					
	Total			**$1,992,898**	**$2,458,330**	**$2,158,091**	**$2,071,531**	**$2,071,531**	**$2,071,531**	**$2,071,531**
Grand Total				**$12,220,521**	**$16,325,205**	**$14,804,468**	**$12,110,090**	**$11,627,882**	**$9,904,933**	**$9,941,675**

Capital Requirements Plan
Broadband - 2022 Budget

Project Name	BU Project	2021 Original Budget	2021 Amended Budget	2022	2023	2024	2025	2026
NoaNET NCS and District Labor	22	$220,034	$219,526	$230,231	$239,841	$243,336	$246,212	$254,960
Fiber Backbone & Laterals	134	$150,000	$150,000	$125,000	$125,000	$125,000	$125,000	$125,000
WO#559986 - Backbone System Electronics	133	$75,000	$75,000	$125,000	$125,000	$125,000	$125,000	$125,000
WO#560002 - Premise Electronics	136	$75,000	$75,000	$75,000	$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	$20,000	$20,000	$20,000	$20,000
Fiber Customer Connects LEC 2	21	$450,000						
Fiber Customer Connects - LEC 1	135	$100,000						
Advanced Wireless/Small Cell	214	$652,000		$673,500				
Airflow Spoiler Project	132	$65,000						
Fiber Customer Connects - LEC	135		$550,000	$500,000	$500,000	$500,000	$500,000	$500,000
System Improvement Projects	349			$100,000	$300,000	$250,000	$300,000	$200,000
Grand Total		**$1,827,034**	**$1,089,526**	**$1,868,731**	**$1,404,841**	**$1,358,336**	**$1,411,212**	**$1,319,960**

Capital Requirements Plan
General Plant - 2022 Budget

Project	Project Name	BU Project	2021 Original Budget	2021 Amended Budget	2022	2023	2024	2025	2026
Facilities	Asphalt Replacement Admin South Parking Lot	277	$180,000	$65,000					
	Carpet Replacement - Customer Service Lobby	280	$30,000	$30,000					
	Pole Yard Gate - Operations	65	$20,000	$20,000					
	Replace tile floor in Operations	249	$18,000	$18,000					
	CS Wall Paper Removal and Painting	313		$81,542					
	Lighting Upgrade Customer Service Lobby	317		$78,407					
	Replace Asphalt Courtyard Parking	344			$120,000				
	Replace Drinking Fountains Admin	345			$7,000				
	Dist System Improvements/Projected Capital Facilities	Null				$200,000			$200,000
	Admin HVAC Controls	Null				$75,000			
	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	
	Total		**$248,000**	**$292,949**	**$127,000**	**$275,000**	**$300,000**	**$159,000**	**$200,000**
Other	Misc. Construction Capital Expense - Line Department	60	$67,500	$67,500	$67,500	$67,500	$67,500	$67,500	$67,500
	Pole Stubbing	64	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
	Misc. Construction Capital Expense - Transformer Shop	61	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000
	Projected Capital Equip - Ops	66	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
	Communications Equipment/800 MHz Radios	49	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000
	15-Ton Press	284	$5,200	$5,200	$5,500				
	Meter Test Standard	274	$60,000	$60,000					
	Locator (Instrument)	283	$9,300	$9,300					
	Micro Ohm Tester	275	$7,755	$7,755					
	TTR and Winding Resistance Tester	276	$26,000		$26,000				
	CT Verification Tester	273	$25,000		$34,000				
	Fault Locator	352		$50,000					
	Infrared Camera	335			$7,000	$25,000			
	Mobile Spare Battery Bank/Trailer and Equipment	340			$64,000				
	Oil Dielectric Tester	338			$15,000				
	Power Quality Recorder	337			$15,000				
	Hand held TTR	339			$5,000				
	Projected Capital Equip - Line	60				$45,000	$45,000	$45,000	$45,000
	Projected Capital - Meter Shop	Null				$20,000	$20,000	$20,000	$20,000

Capital Requirements Plan
General Plant - 2022 Budget

Project	Project Name	BU Project	2021 Original Budget	2021 Amended Budget	2022	2023	2024	2025	2026
Other	Projected Capital - Transformer Shop	Null				$5,000	$25,000	$25,000	$25,000
	Gas Analyzer	Null				$10,000			
	D6 Dozer	279	$210,000						
	Rock Hammer (for Backhoe)	282	$17,000						
	Total		**$457,755**	**$229,755**	**$269,000**	**$202,500**	**$187,500**	**$187,500**	**$187,500**
Transportation	High Capacity Digger Derrick - Transmission Line Truck	278	$800,000	$800,000					
	Small Bucket Truck for Emergency Standby	281	$90,000	$90,000					
	Forklift for Transformer Shop	285	$60,000		$60,000				
	D6 Dozer	279		$210,000					
	D6 Dozer Trailer	354		$40,000					
	Rock Hammer (for Backhoe)	282		$17,000					
	Bucket Truck - Prosser (Replacing #73)	347			$300,000				
	Overhead Puller	346			$200,000				
	Foreman Truck - Prosser	Null					$120,000		
	Dump Truck	Null					$50,000		
	Kennewick Bucket Truck (Replace #149)	342			$300,000				
	1000KCM Cable Payout Trailer	348			$100,000				
	Engineering Half ton Pick Up (Replace #120)	343			$70,000				
	Truck #180 - Insurance Reimbursement - Superintendent of Oper..	320			$42,000				
	Water Tank for Fire Mitigation Program	341			$35,000				
	Bucket Truck - Kennewick	Null				$300,000			
	Service Truck - Kennewick	Null				$180,000			
	Back Hoe	Null				$160,000			
	Engineering Half ton Pick Up	Null				$70,000			
	Projected Transportation Equipment	Null					$500,000	$500,000	$500,000
	80' High Reach Bucket - Kennewick (to replace #90)	Null						$360,000	
	Total		**$950,000**	**$1,157,000**	**$1,107,000**	**$710,000**	**$670,000**	**$860,000**	**$500,000**
Grand Total			**$1,655,755**	**$1,679,704**	**$1,503,000**	**$1,187,500**	**$1,157,500**	**$1,206,500**	**$887,500**

Capital Requirements Plan
Information Technology - 2022 Budget

Project	Project Name	2021 Original Budget	2021 Amended Budget	2022	2023	2024	2025	2026
Data Analytics/Business Intelligence	Purchase and Implement ETL Tool	$25,000						
	Total	**$25,000**						
Enterprise Applications	iVUE Enhancements	$85,244	$24,176	$98,640	$84,920	$53,570	$53,570	$53,570
	SCADA Historian Enhancements	$90,244		$89,920				
	TRIM Upgrade	$75,244		$33,320			$74,920	
	WindMil Upgrade	$18,350			$18,328			
	Total	**$269,082**	**$24,176**	**$221,880**	**$103,248**	**$53,570**	**$128,490**	**$53,570**
Network Infrastructure	Storage Area Network (SAN) Upgrade	$120,000	$97,000	$120,000	$250,000	$100,000	$100,000	$300,000
	Cisco Blade Server	$75,000	$143,000	$200,000	$125,000	$125,000	$125,000	$125,000
	Windows Datacenter Licenses	$25,000	$25,000	$33,320	$25,000	$25,000	$25,000	$25,000
	Network Switch Purchase	$40,000	$55,000	$48,320	$40,000	$40,000	$40,000	$40,000
	SQL Software - Database Licenses	$130,000	$43,000	$30,000				
	Nexus Switch (Prosser) Upgrade	$63,829	$73,804					$75,000
	Load Balancer	$87,561	$46,000					
	C-Series Cisco Blade Server	$32,428	$2,413					
	Video Accelerator Cards	$31,578	$1,567					
	Veeam Enterprise to Ent Plus	$30,000	$30,000					
	Large Format Scanner	$26,842	$28,000					
	Video Accelerator	$15,789	$784					
	Structured Cabling	$10,702	$9,000					
	Tape drive backup	$5,000	$5,000					
	Datacenter redesign	$50,000		$30,000				
	Video Conference Room Upgrades	$42,537		$45,962				
	Tape Library Active Vault	$8,000						
	Audio Visual Equipment (Commission Room Update)	$1,712						
	Multi-Function Printer		$12,500	$35,000	$35,000	$35,000	$35,000	$35,000
	UCS Memory		$40,000	$40,000		$40,000		
	UCS Chassis		$25,000					
	USC Chassis		$15,000					
	Big Data Storage Array			$100,000				
	Veeam Repository			$70,000				
	CWDM for Datacenter Connection			$25,000				
	Total	**$795,977**	**$652,068**	**$777,602**	**$475,000**	**$365,000**	**$325,000**	**$600,000**
Operational Technology	Communications Monitors	$55,044		$58,320				
	TGB Replacement		$54,039					
	Total	**$55,044**	**$54,039**	**$58,320**				
Other	Adjustment to Annual Minimum of $800,000						$345,959	$146,209
	Total						**$345,959**	**$146,209**

Capital Requirements Plan
Information Technology - 2022 Budget

Project	Project Name	2021 Original Budget	2021 Amended Budget	2022	2023	2024	2025	2026
Grand Total		**$1,145,103**	**$730,283**	**$1,057,802**	**$578,248**	**$418,570**	**$799,448**	**$799,778**

Capital Requirements Plan
Security - 2022 Budget

Project Name	BU Project	2021 Original Budget	2021 Amended Budget	2022	2023	2024	2025	2026
Enterprise Security System Phase 1	222	$364,236	$14,144	$566,640	$616,640	$616,640		
Facility Security Improvements	305	$250,000		$250,000				
Operations Security Fenching	326			$150,000				
Security Manager's Office Remodel	305			$25,000				
Grand Total		**$614,236**	**$14,144**	**$991,640**	**$616,640**	**$616,640**		

Capital Requirements Plan
Capital Contributions - 2022 Budget

Project Group	Project	Project Name	BU Project	2021 Original Budget	2021 Amended Budget	2022	2023	2024	2025	2026
Capacity & Reliability	17 - Dist. System Improvement	WO# 561020 - Ridgeline Under Pass	178	($691,300)	($691,300)					
		Total		**($691,300)**	**($691,300)**					
	Total			**($691,300)**	**($691,300)**					
Customer Growth	30 - Sum Base Growth	Dist Base Growth	140	($1,648,401)	($2,082,599)	($2,487,712)	($2,487,712)	($2,487,712)	($2,487,712)	($2,487,712)
		Total		**($1,648,401)**	**($2,082,599)**	**($2,487,712)**	**($2,487,712)**	**($2,487,712)**	**($2,487,712)**	**($2,487,712)**
	Total			**($1,648,401)**	**($2,082,599)**	**($2,487,712)**	**($2,487,712)**	**($2,487,712)**	**($2,487,712)**	**($2,487,712)**
Other	19 - NESC Standards Compliance	JU - NESC Compliance Program	145	($31,250)	($31,250)	($31,250)	($31,250)	($37,500)	($37,500)	($37,500)
		Total		**($31,250)**	**($31,250)**	**($31,250)**	**($31,250)**	**($37,500)**	**($37,500)**	**($37,500)**
	Other	Angus Franklin - Tower Upgrade (Contract 95-23-01)	Null	($21,775)	($21,775)	($21,775)	($21,775)	($21,775)	($21,775)	($21,775)
		Total		**($21,775)**	**($21,775)**	**($21,775)**	**($21,775)**	**($21,775)**	**($21,775)**	**($21,775)**
	Total			**($53,025)**	**($53,025)**	**($53,025)**	**($53,025)**	**($59,275)**	**($59,275)**	**($59,275)**
Broadband	5 - BB Fiber Line Extension	Advanced Wireless/Small Cell	214	($58,800)		($58,800)				
		Total		**($58,800)**		**($58,800)**				
	Total			**($58,800)**		**($58,800)**				
Grand Total				**($2,451,526)**	**($2,826,924)**	**($2,599,537)**	**($2,540,737)**	**($2,546,987)**	**($2,546,987)**	**($2,546,987)**

Power Supply Plan

Tab 10

Public Utility District No. 1 of Benton County

Power Supply Plan

2022

Contributors

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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 Ten Year Load and Customer Forecast Report 2021-2030 (Resolution No. 2571 adopted by the Commission on April 27, 2021), the current Bonneville Power Administration (BPA) Slice/Block Agreement (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 2022 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; 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; 50 MW of capacity under long term contract is provided by the Frederickson 1 Generating Station, a combined cycle natural-gas-fired combustion turbine project located near Tacoma, Washington (this Power Purchase Agreement, or PPA, expires in August 2022); 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, for the next five years.

Power Management staff worked with The Energy Authority (TEA) to develop a list of fixed cost power supply assumptions for 2022-2026, 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 2021 – included in Section I
- BPA rate escalation assumptions: (BPA fiscal year is October 1 through September 30)
    - FY2022-FY2023: Actual BP-22 power and transmission rates
    - FY2024-FY2026: 4.0% increase in Power and 6.0% increase in Transmission rates per BPA rate period
- District's Rate Period High Water Mark (RHWM) is 192.001 aMW in FY2022, down from 200.214 aMW in FY2021, and assumed to remain at this value through the rest of the study period.
- 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.
- The District uses 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. Using these results, the District sets its 2022 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 2022.

Table 1 below are net power cost forecasts using the 25th and 50th percentile scenarios for 2022-2026. 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	2022	2023	2024	2025	2026
25%	$80,135,128	$81,299,993	$85,432,638	$87,985,205	$91,984,801
50%	$76,407,330	$77,206,028	$80,819,695	$82,822,024	$86,976,687
Budget vs Expected (25% - 50%)	$3,727,798	$4,093,965	$4,612,944	$5,163,181	$5,008,113

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 2021-2030 adopted by the Commission (Resolution 2571) on April 27, 2021. 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 five-year retail load projection forecasts a 0.61% average annual rate of growth as illustrated below in **Figure 2.**

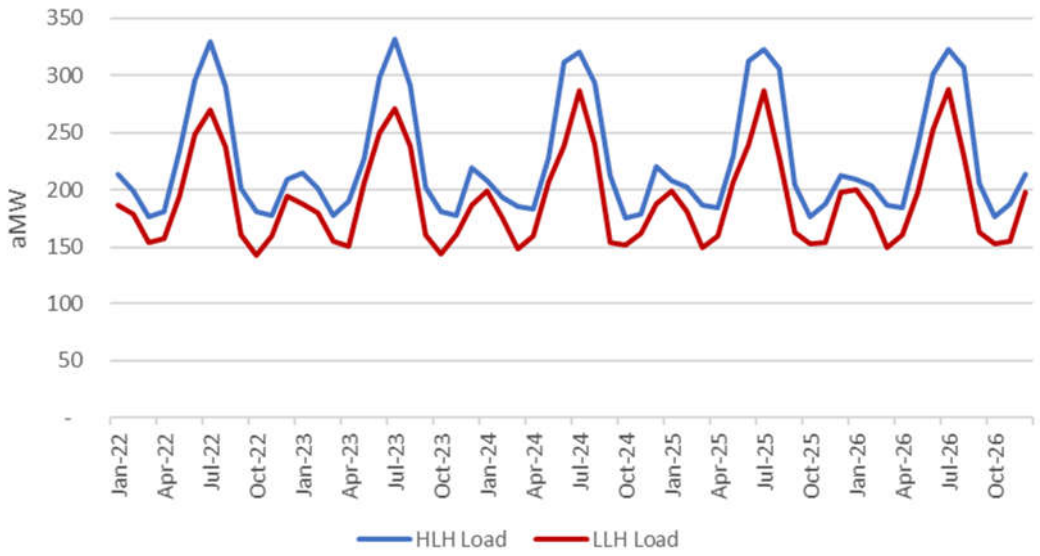

FIGURE 1: DISTRICT HLH AND LLH LOADS

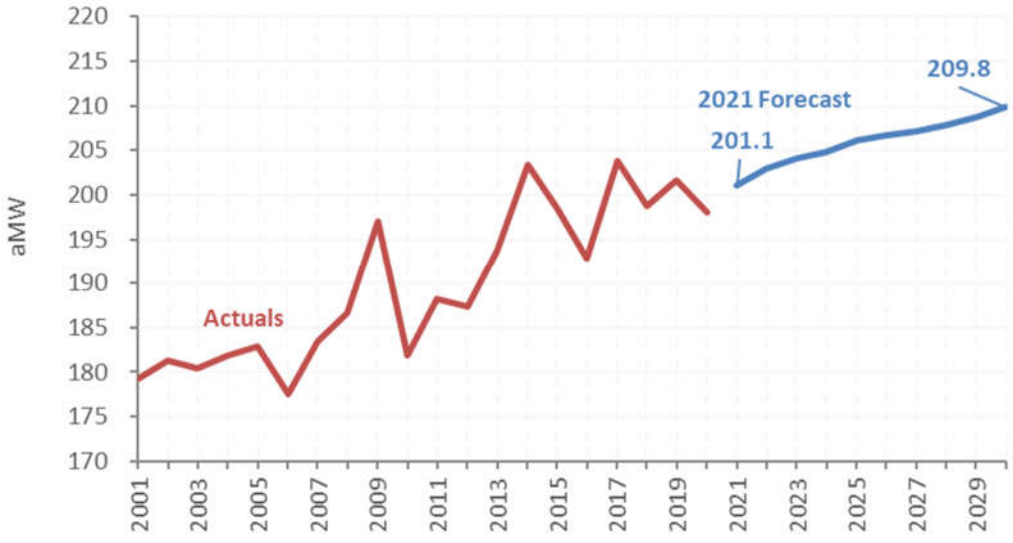

FIGURE 2: AVERAGE ANNUAL RATE OF LOAD GROWTH

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, 2022-2026.

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. Slice is paired with the Tier 1 Block Product to meet additional demand up to the Rate Period High Water Mark (RHWM) of 192.001 aMW.

The critical Slice allocation for FY2022 is 93.050 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 16.445 aMW.

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 FY2022 Tier 1 Cost Allocator (TOCA) of 2.85022% and the BPA Composite Rate. BPA Costs are outlined in **Table 19: Cost per MWh from BPA** later in the document.

Month (aMW)	FY2022	FY2023	FY2024	FY2025	FY2026
October	75.7	77.1	75.9	77.1	75.7
November	83.0	84.5	83.2	84.5	83.0
December	94.4	96.1	94.6	96.1	94.4
January	102.5	104.4	102.8	104.4	102.5
February	85.1	86.7	82.4	86.7	85.1
March	75.8	77.2	76.0	77.2	75.8
April	84.3	85.8	84.5	85.8	84.3
May	102.5	104.4	102.8	104.4	102.5
June	124.0	126.3	124.3	126.3	124.0
July	145.6	148.3	146.0	148.3	145.6
August	125.8	128.1	126.2	128.1	125.8
September	86.7	88.3	86.9	88.3	86.7
Block Total (aMW)	99.0	100.8	99.0	100.8	99.0
Block Total (MWh)	866,810	882,615	869,185	882,615	866,810

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 District assumes the same operations around spill will continue for the 2022-2026 fish passage seasons. 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.

NON-BPA RESOURCES

In addition to short term, energy purchases from the wholesale energy market, Benton PUD has secured six non-BPA resources: Frederickson 1 Generating Station, 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.

FREDERICKSON 1 GENERATING STATION

Benton PUD entered into an agreement for the purchase of 50 MW of contract capacity at a 7.1 MMBtu per megawatt hour heat rate from the Frederickson 1 Generating Station combined cycle combustion turbine (CCCT) plant located near Tacoma, WA. Each day, the District has the right, but not the obligation, to purchase output from Frederickson. The decision to buy from Frederickson is based on a comparison of the spot price of power to the variable cost of generation. The plant, which reached commercial operation in September 2002, will need 8,520 MMBtu of gas per day to fuel the District's share of its 24x7 operation and 5,680 MMBtu of gas per day for HLH-only operations. There is an additional charge of approximately $5,000 for each start-up that is charged for HLH-only operations. **Figure 3** below illustrates the lifecycle of power generated from Frederickson from fuel to market.

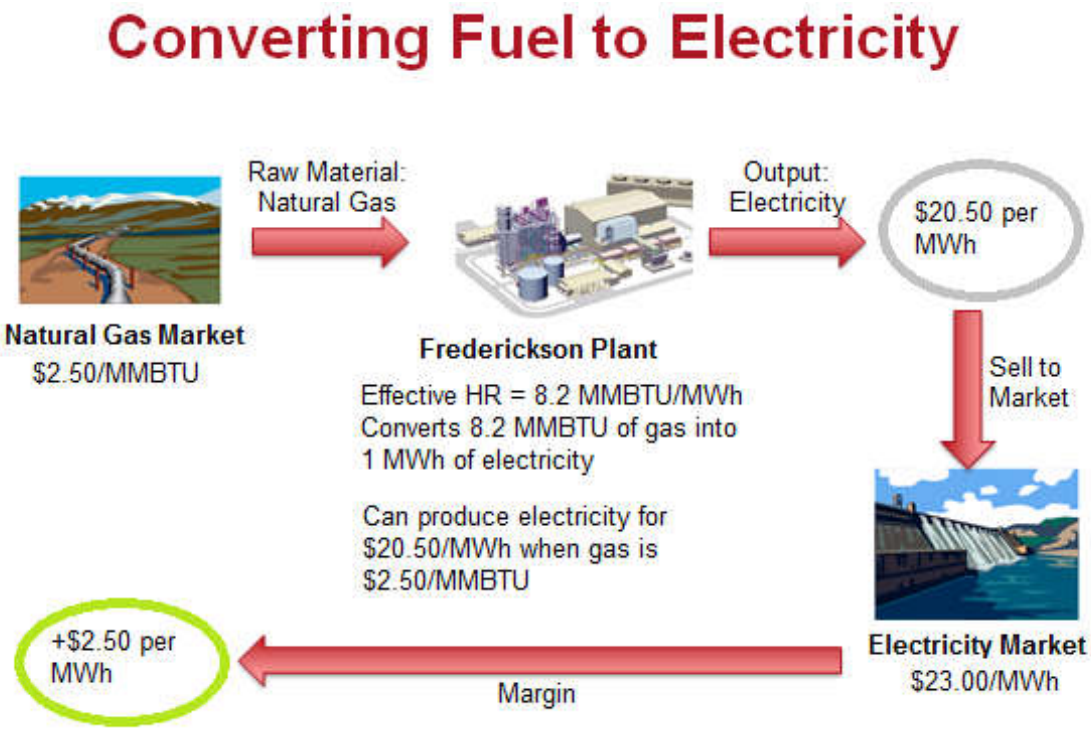

FIGURE 3: THERMAL CONVERSION OF FUEL TO ELECTRICITY

Benton PUD, along with Grays Harbor PUD and Franklin PUD, are purchasing contract capacity under separate but substantially similar agreements. Together, the three PUDs have contract rights to 125 MW of the plant's total 249 MW capacity. Up to 40% of the plant capacity may be displaced regardless of the dispatch decisions of Puget Sound Energy, who controls the dispatch of the remaining 124 MW of the plant. (i.e., output of plant may be reduced in LLH to capture better economics since prices in HLH tend

to be higher); however, the reducing generation output also decreases the plant's thermal efficiency, and the heat rate may increase to a maximum of 7.952 MMBtu. **Table 4** displays the District's fixed costs and volumetric for Frederickson.

The power purchase agreement is set up as a tolling arrangement. The District will purchase and deliver gas to the fuel receipt point just across the Canadian border at Huntingdon, BC. The plant is responsible to transport the gas from Huntingdon, and to burn the gas and deliver power to the point of delivery on the BPA grid at the South Tacoma substation. TEA is the District's appointed agent for fuel management services for this plant. **Table 4** additionally shows the budgeted costs for Frederickson in calendar year 2022, the contract expires in August.

Benton PUD is actively monitoring both federal and state regulatory policies regarding Green House Gas emissions to determine the physical and financial implications each policy could have on economically dispatching the Frederickson 1 Generating Station. The WA legislature passed SB5116 in 2019 and is named the Clean Energy Transformation Act (CETA). CETA requires power supplies to be 80% non-carbon emitting by 2030 and 100% by 2045. CETA is not anticipated to impact Frederickson costs before the contract expires.

Year	Annual Fixed Cost	Firm Pipeline Fixed Cost	Annual Volumetric Cost	Total Annual Cost	YoY
2022*	$4,573,970	$807,985	$1,394,151	$6,776,106	-29%
2023	$0	$0	$0	$0	N/A
2024	$0	$0	$0	$0	N/A
2025	$0	$0	$0	$0	N/A
2026	$0	$0	$0	$0	N/A
***Partial year costs as Frederickson PPA expires August 2022**					

TABLE 4: FREDERICKSON FIXED COSTS & VOLUMETRIC COSTS

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. This purchase produces about 1 aMW of energy, at $56.91 per MWh in 2022. 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).

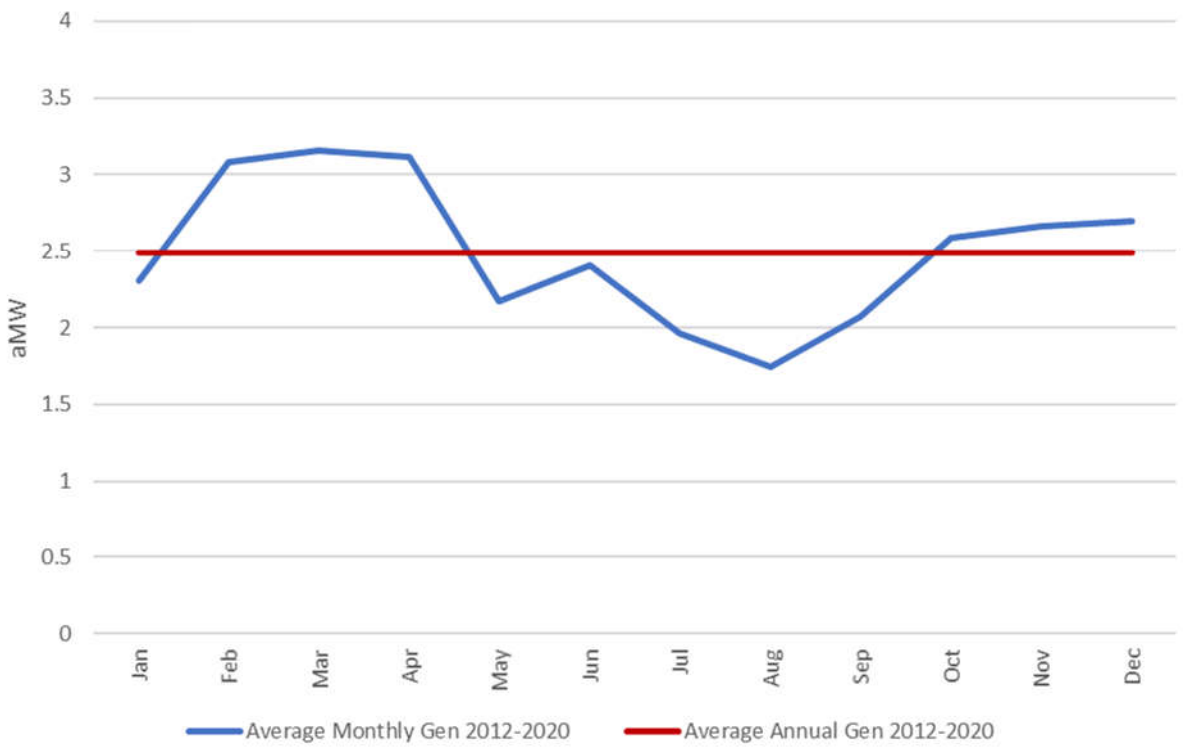

FIGURE 4: NINE CANYON AVERAGE MONTHLY GENERATION (2012-2020)

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 2022. 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 4** 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 $69.75 per MWh in 2022.

Table 5 below shows the annual cost of output purchased from each phase. In addition to these costs, the District incurs an estimated $14,000 in transmission costs 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
2022	$56.91	$76.17	$69.75	$41,547	$111,206	$1,833,036
2023	$28.46	$76.17	$60.26	$20,773	$111,206	$1,583,747
2024	$28.47	$76.17	$60.27	$20,783	$111,206	$1,583,872
2025	$28.47	$76.17	$60.27	$20,783	$111,206	$1,583,872
2026	$28.47	$76.17	$60.27	$20,783	$111,206	$1,583,872

TABLE 5: 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 $68.57 per MWh in 2022, and costs escalate by 2% each year of the contract. **Table 6** is a breakdown of the project's fixed cost assumptions through 2026.

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
2022	$68.57	$50,058	$600,697	2%
2023	$69.94	$51,056	$612,674	2%
2024	$71.34	$52,078	$624,938	2%
2025	$72.77	$53,122	$637,465	2%
2026	$74.23	$54,188	$650,255	2%

TABLE 6: LL&P WIND ENERGY, INC. AT WHITE CREEK COSTS

WHITE CREEK WIND I

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 2022. This purchase produces approximately 2 aMW of energy. Benton PUD paid Klickitat PUD (a project owner) a lump sum for the capital component. The total generation cost is estimated at $62.51 per MWh in 2022. Capital costs are fixed, and O&M costs escalate between 2-4% each year through 2026. **Table 7** below is a breakdown of the fixed cost assumptions for this project. **Figure 5** 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.

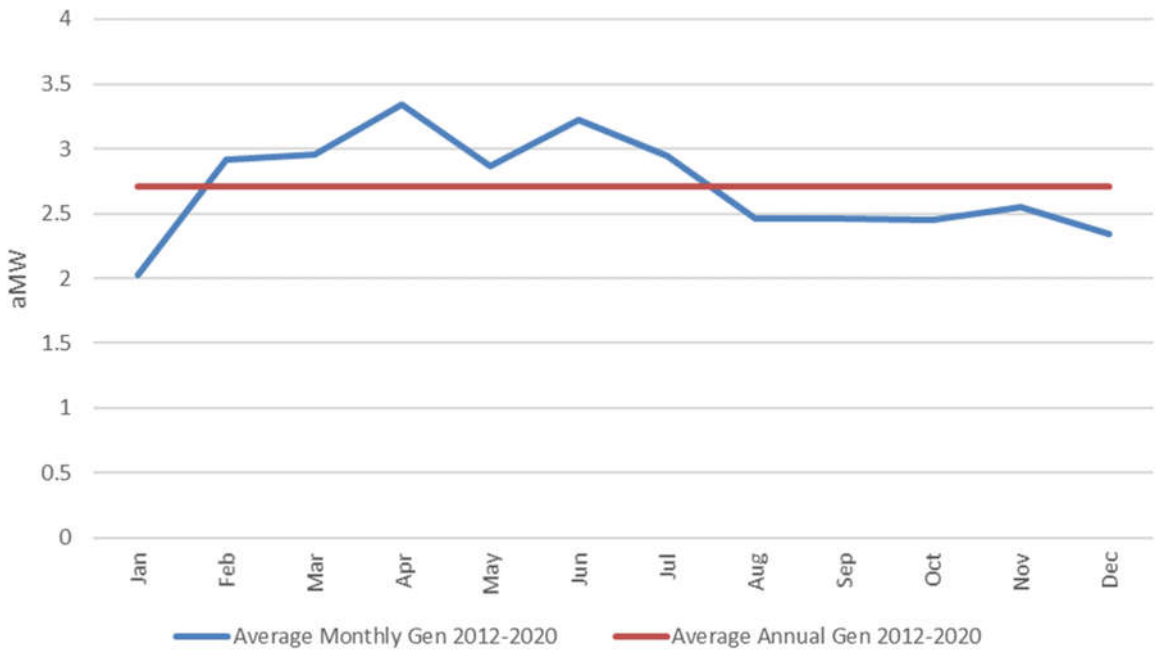

FIGURE 5: WHITE CREEK AVERAGE MONTHLY GENERATION (2012-2020)

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
2022	$62.51	$29.49	$516,742	$578,400	$1,095,142
2023	$63.39	$30.38	$532,244	$578,400	$1,110,644
2024	$64.30	$31.29	$548,212	$578,400	$1,126,612
2025	$65.24	$32.23	$564,658	$578,400	$1,143,058
2026	$66.21	$33.11	$581,598	$578,400	$1,159,998

TABLE 7: 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 8** 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
2022	$53.05	$38,729	$464,743.50
2023	$53.78	$39,256	$471,077.70
2024	$55.39	$40,434	$485,210.03
2025	$57.05	$41,647	$499,766.33
2026	$58.76	$42,897	$514,759.32

TABLE 8: 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 9** below shows the annual costs of capacity without the option for energy.

Year	Winter Capacity Cost	Summer Capacity Cost	Annual Capacity Cost
2022	$93,750	$0	$93,750
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

TABLE 9: SEASONAL CAPACITY COSTS

The District has also assumed in its future budget projections that it will purchase some amount of additional summer and winter capacity to address any forecast seasonal deficits. **Table 10** below shows these estimated costs for additional capacity.

Year	Winter Capacity Cost	Summer Capacity Cost	Annual Capacity Cost
2022	$0	$0	$0
2023	$0	$1,575,000	$1,575,000
2024	$0	$1,575,000	$1,575,000
2025	$156,250	$1,575,000	$1,731,250
2026	$468,750	$2,925,000	$3,393,750

TABLE 10: ASSUMED FUTURE SEASONAL CAPACITY COSTS

TRANSMISSION

The District has a long term Point-to-Point (PTP) Transmission agreement with BPA Transmission Services. The firm annual capacity is 423 MW. Fixed costs for the BPA Transmission agreement are budgeted at nearly $10 million in 2022. The District is projected to be long transmission for most hours of the year in 2022, as can be seen in **Figure 6** and **Table 11**, which the District monetizes through short-term PTP sales. Net sales of surplus transmission are projected to be $1,100,000 per year in 2022-2026.

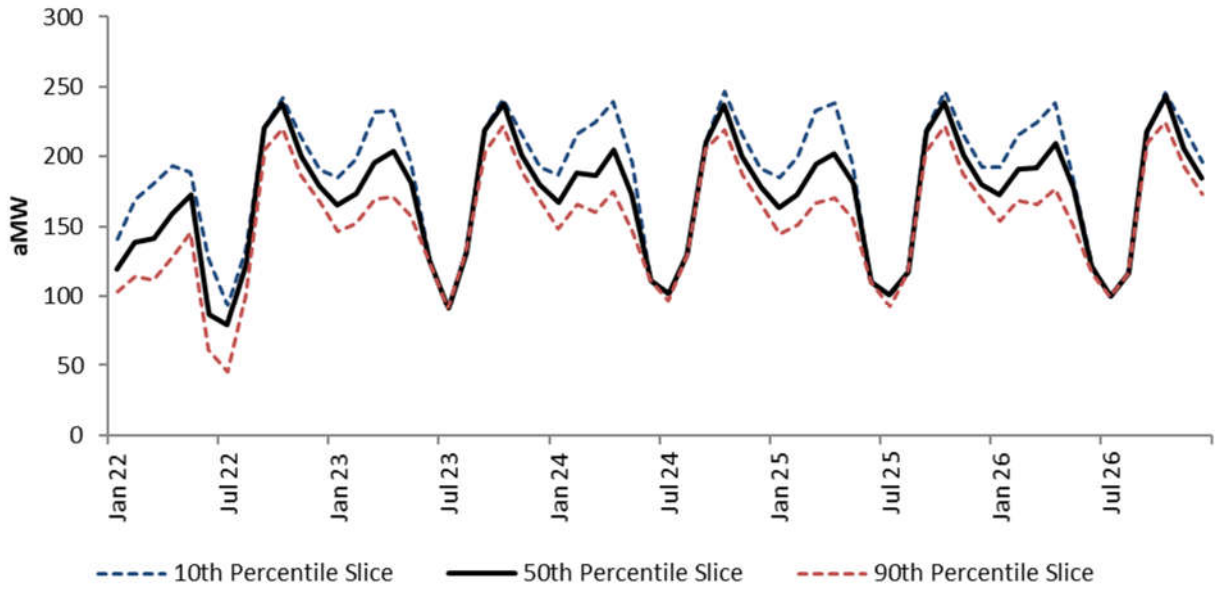

FIGURE 6: BENTON PUD 2022-2026 LONG-TERM HLH FIRM TRANSMISSION SURPLUS, NET OF LOAD & RESOURCES

Resource Availability	BPA	Nice Canyon	White Creek	Packwood	Frederickson
2022-2026 Average	219.9	2.7	3.0	1.5	*5.8
Minimum	161.4	2.4	3.0	0.1	0.0
Median	221.8	2.7	3.0	1.4	0.0
LTF Transmission Rights *Frederickson ends in August 2022	408.0	9.0	6.0	0.0	0.0

TABLE 11: BENTON PUD TRANSMISSION SNAPSHOT (ANNUAL AMW)

SECTION III: LOAD/RESOURCE BALANCE

This section examines the District's ability to meet its load with current resources under several Slice generation scenarios, with and without Frederickson included as a resource. The goal is to identify any capacity issues and the likelihood that they could occur.

MONTHLY LOAD/RESOURCE BALANCE: 2022

The following portion of the analysis examines the District's monthly load/resource balance 50th percentile Slice generation scenarios. The scenario assumes expected loads. The District's load/resource balance is examined including Frederickson (when it is economically prudent to dispatch in order to meet load) and excluding Frederickson altogether. The net positions shown are the District's hedged financial net positions (i.e., net of forward purchases and sales already executed).

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 7** shows BPA's expected FCRPS generation under a 50th percentile Slice scenario, showing that Slice varies substantially by month/season.

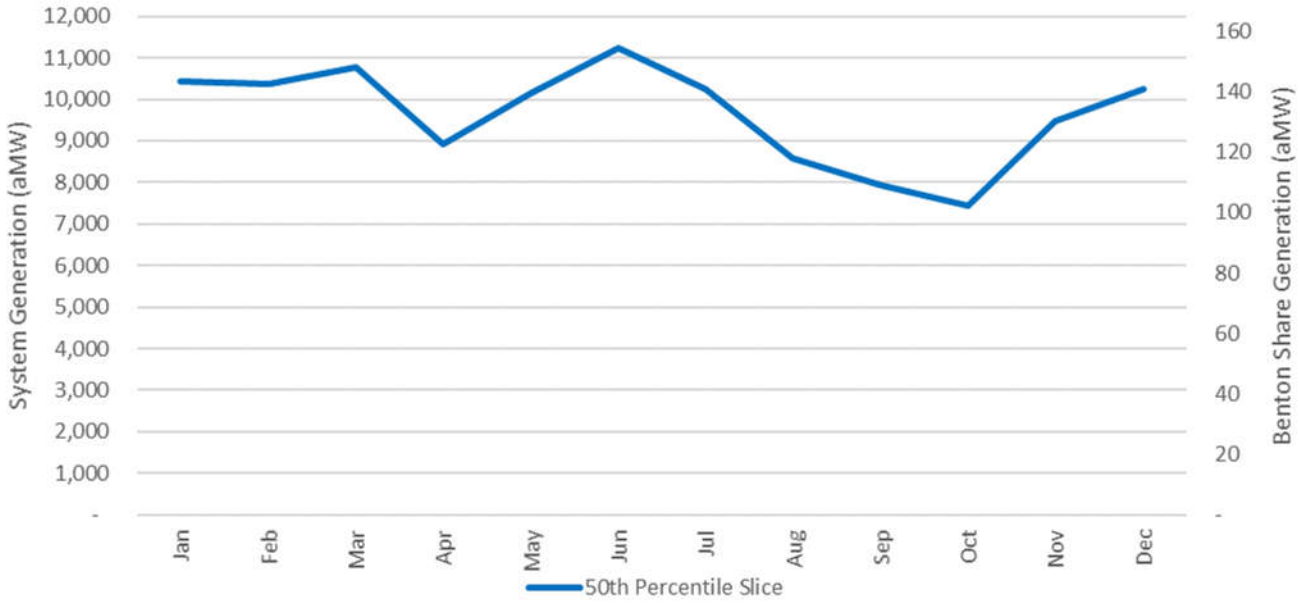

FIGURE 7: 50TH PERCENTILE 2022 MONTHLY SLICE GENERATION

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 8** shows the District's load/resource balance, including slice hedges given expected loads and with Frederickson economically dispatched in 2022. With Frederickson, the District has sufficient physical resources in 2022 on an average monthly energy basis, with a small HLH short to neutral position in October. **Figure 9** below shows that excluding Frederickson as a resource, leads to small capacity deficits in the months of June, July, and August, while other months maintain neutral or positive net position throughout the year. The District actively manages the excess surplus and deficits to optimize value and reduce costs to customers through price risk mitigation.

Note that hedges associated with the Frederickson delta hedging program have been excluded from **Figure 8**. The delta hedging program uses financial hedges to optimize the value of the Frederickson asset but do not impact the District's actual physical position.

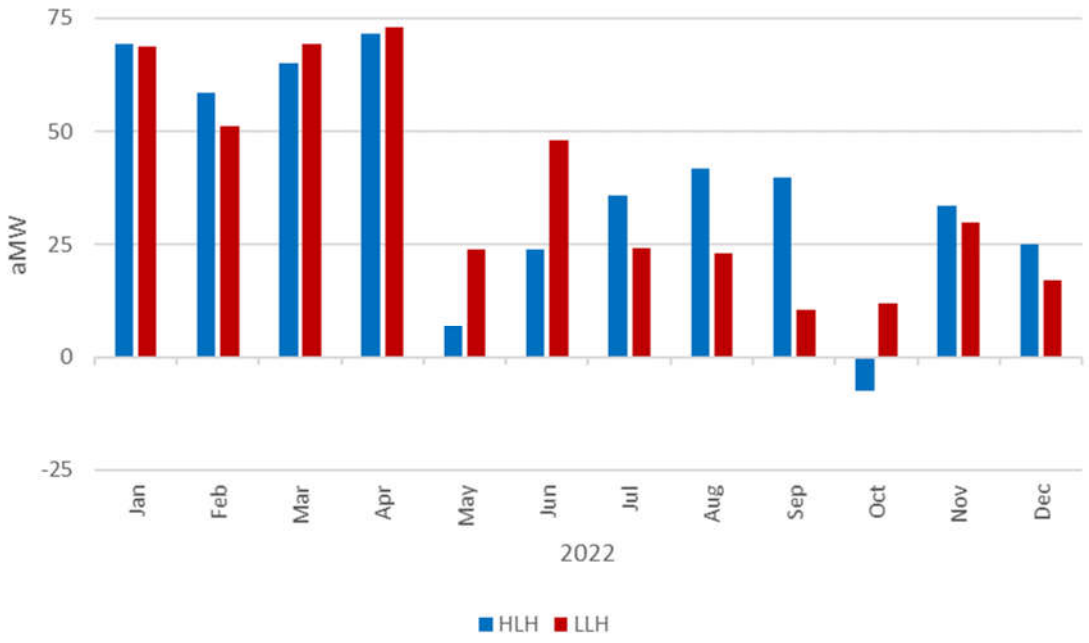

FIGURE 8: HEDGED PORTFOLIO NET POSITION, 50TH PERCENTILE SLICE, EXPECTED LOAD, FREDERICKSON ECONOMICALLY DISPATCHED

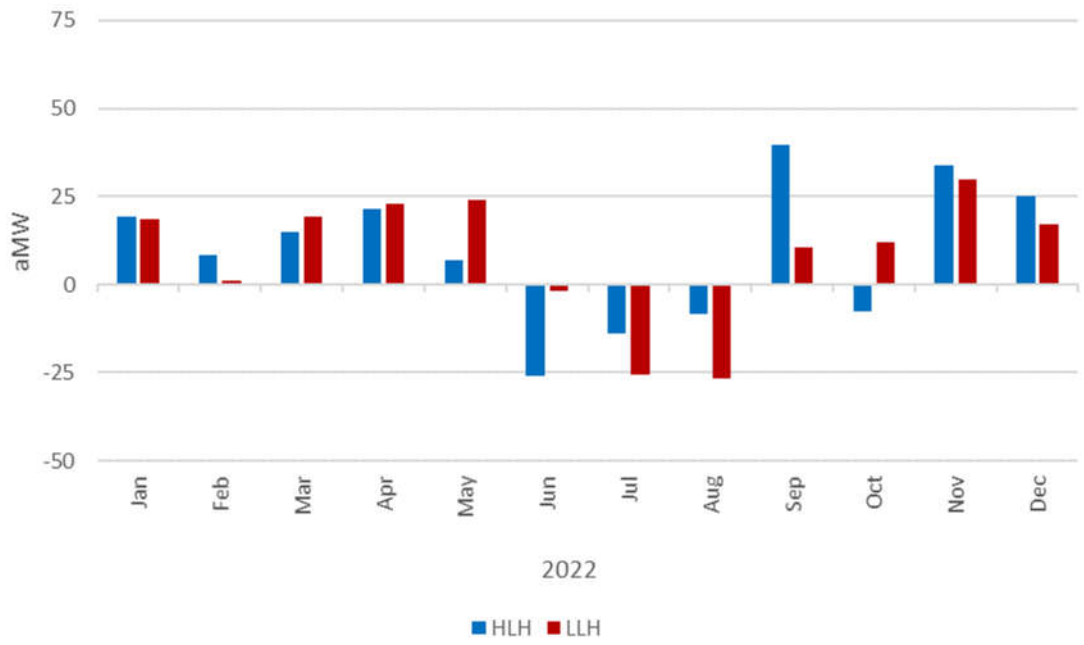

FIGURE 9: HEDGED PORTFOLIO NET POSITION, 50TH PERCENTILE SLICE, EXPECTED LOAD, FREDERICKSON EXCLUDED

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 performed a capacity study to determine the District's loads and resources on a peak summer day. Peak demand days are not well defined, and in this case District staff determined an appropriate planning scenario by analyzing the temperature that produced the actual single highest average HLH load each year, between 2011 and 2020. The planning scenario was created by assuming that the load during future peak periods will fall within this range. 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 10** shows during this period, average HLH loads reached as high as 385 aMW.

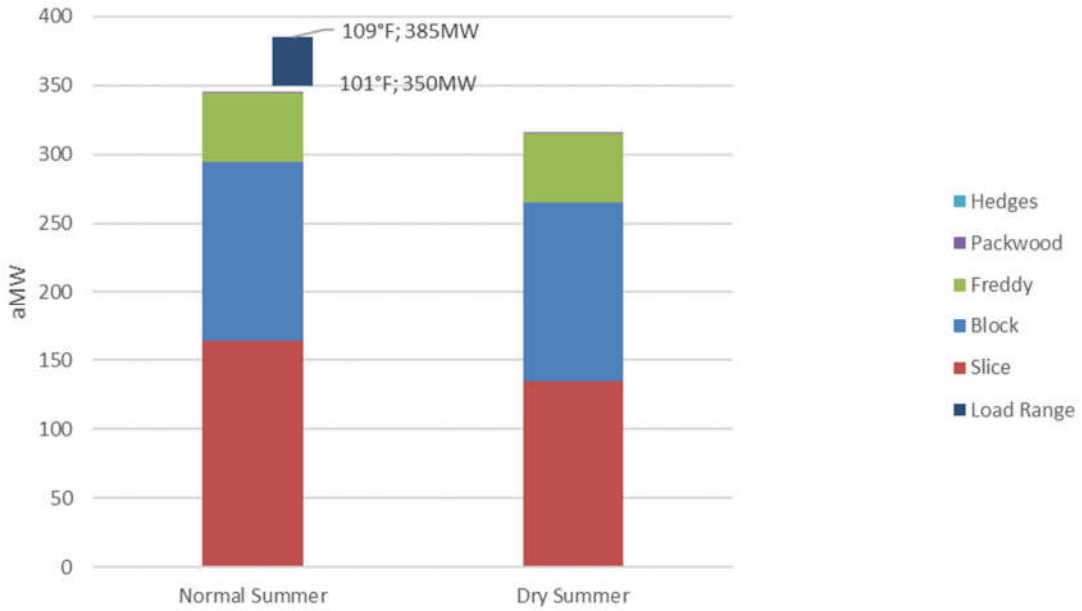

FIGURE 10: SUMMER PEAKING LOADS AND RESOURCES

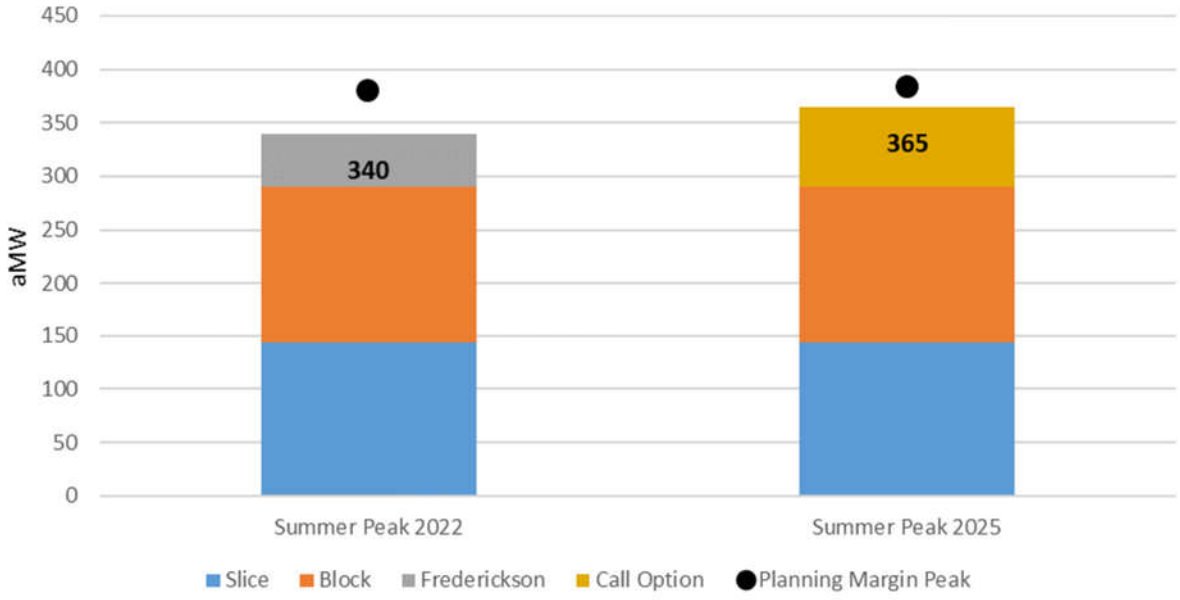

FIGURE 11: SUMMER HOURLY PEAKING RESOURCES

Figure 11 above shows the forecast of summer hourly peaking resources for 2022 and 2025. The District is forecasted to be short of meeting its loads during a 2022 summer peak event. The District purchased an average of 50 MW swaps for summer HLH periods to serve as financial protection against high market prices.

Relative to the summer, a wider range of winter low temperatures were observed in the last 10 years, from an annual daily low temperature of -7°F to 11°F. This variability in temperature means the District can still experience peak load events in the winter months. **Figure 12** compares the District's current resources against the load range.

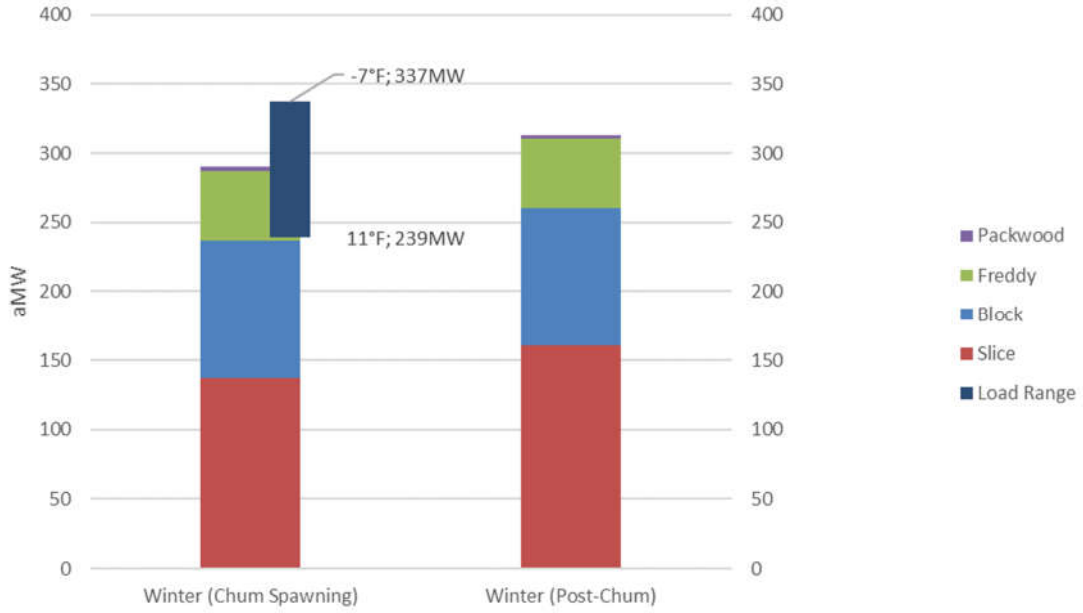

FIGURE 12: WINTER PEAKING LOADS AND RESOURCES

District staff has historically utilized two separate tools to manage against cold weather events: outright power purchases 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, much like the physical summer call option, has a 25 MW HLH winter call option that can be exercised during the months of December, January, and February. **Figure 13** represents the District's forecasted peaking resources during a winter peak event for both 2022 and 2025.

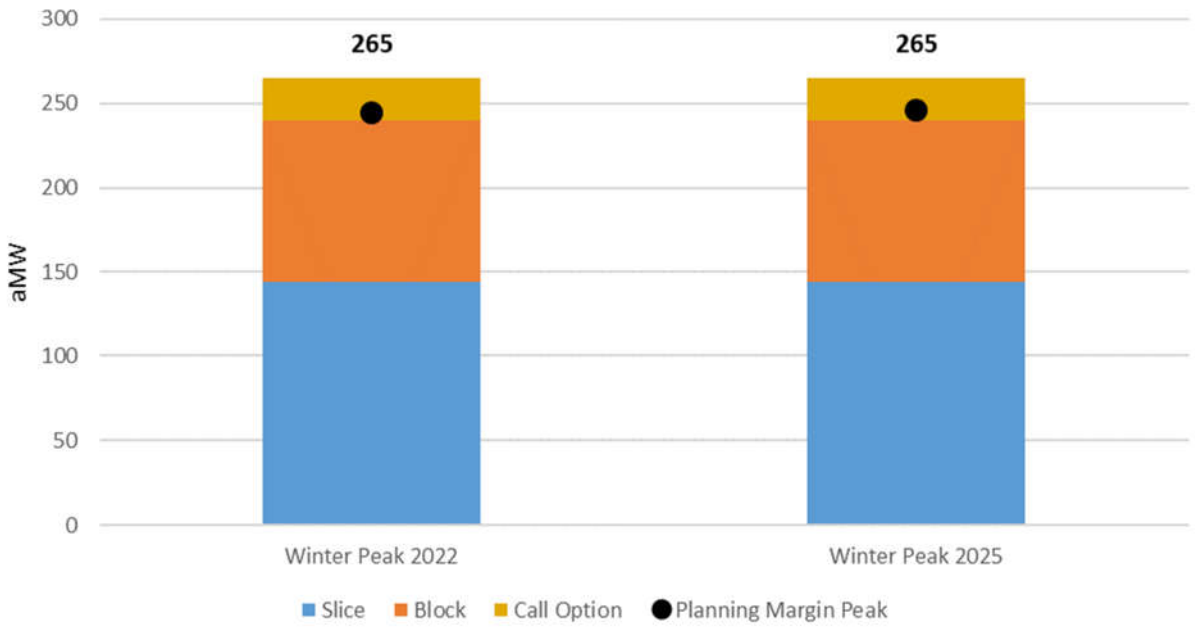

FIGURE 13: WINTER HOURLY PEAKING RESOURCES

ANNUAL LOAD/RESOURCE BALANCE: 2022-2026

The following section examines the District's annual average load/resource balance under critical water conditions from 2022-2026. **Figure 14** represents the District's current resource stack to load from 2022 to 2026. Note in **Table 12** that load will exceed critical slice/block by 20 aMW in BPA's FY22. As shown below, the District's other resources make up for this deficit.

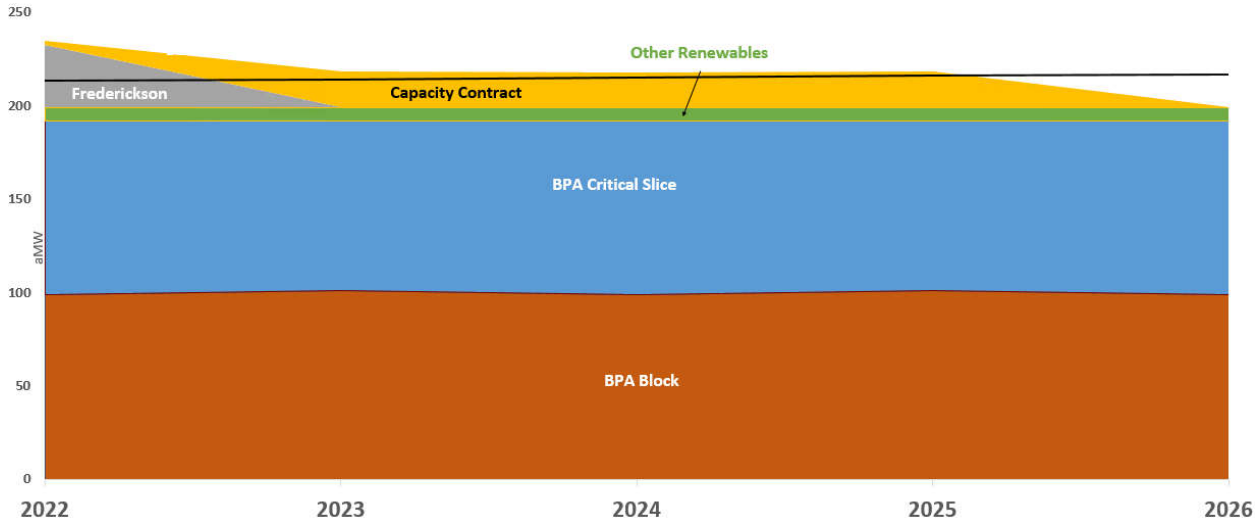

FIGURE 14: DISTRICT'S RESOURCE STACK – CRITICAL WATER CONDITIONS

All Units in aMW	BPA 2022	BPA 2023	BPA 2024	BPA 2025	BPA 2026
Load w/Tx Losses	212.6	213.1	213.9	215.3	215.9
BPA Block	99.0	100.8	99.0	100.8	99.0
BPA Critical Slice	93.1	91.2	93.1	91.2	93.1
Other Renewables	7.2	7.2	7.2	7.2	7.2
Frederickson	33.3	0.0	0.0	0.0	0.0
Capacity Contract	2.1	18.9	18.9	18.9	0.0
Net Position	22.1	5.0	4.3	2.8	-16.6

TABLE 12: ANNUAL LOAD/RESOURCE BALANCE, 2022-2026

Figure 15 and **Figure 16** show that, on an annual average basis, the District has sufficient energy to meet its load for the next five years. Despite having surplus energy on average, the District will be deficit energy at times due to low Slice generation, high demand, or a combination of the two. The declaration of any upcoming Resource Adequacy (RA) programs, which are programs that ensure a load serving entity has sufficient capacity resources to meet its customers' system loads within all hours of a study period, will likely have an impact on future resource decisions. The District will continue to actively manage its load/resource balance to optimize the value of its surplus energy while mitigating price risk during deficit periods through short-term and long-term market hedges.

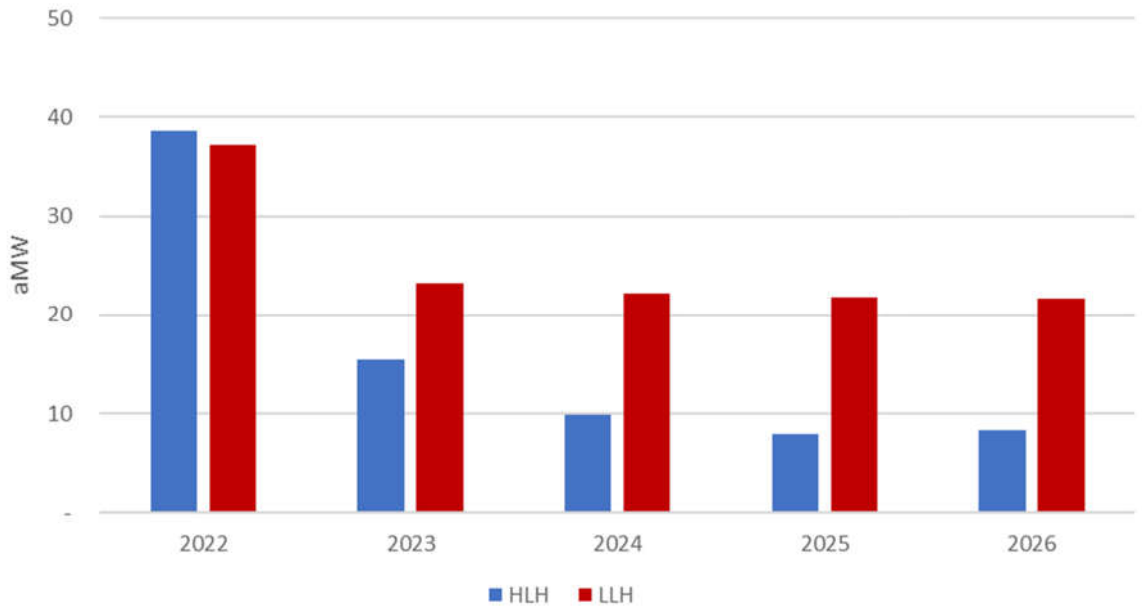

FIGURE 15: 2022-2026 ANNUAL NET POSITION, 50TH PERCENTILE SLICE, EXPECTED LOAD, FREDERICKSON ECONOMICALLY DISPATCHED

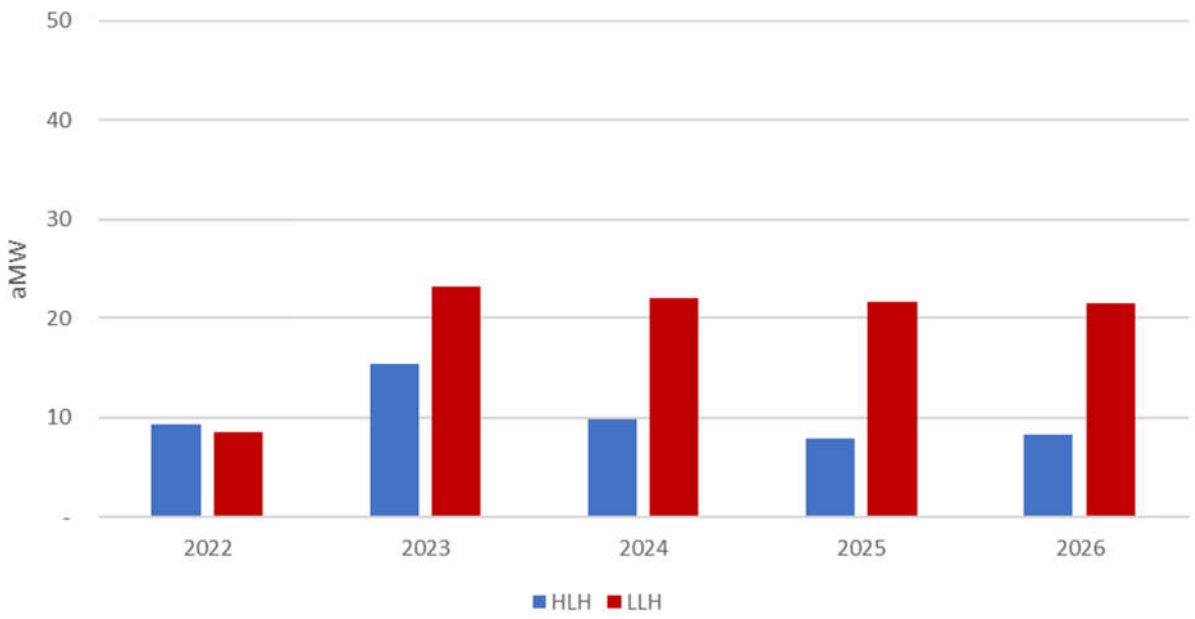

FIGURE 16: 2022-2026 ANNUAL NET POSITION, 50TH PERCENTILE SLICE, EXPECTED LOAD, FREDERICKSON EXCLUDED

RENEWABLE LOAD/RESOURCE BALANCE: 2022-2026

The District has three renewable energy resources that qualify under EIA as well as multiple renewable energy credit contracts. In order to comply with the EIA, the District must meet the following target with qualifying renewable energy, or renewable energy credits (RECs):

- At least fifteen percent of its two-year average load by January 1, 2020, and each year thereafter

As can be observed **Figure 17** and **Table 13**, it's anticipated that the District will have sufficient renewable resources to meet EIA requirements through 2024. Once the Idaho Wind Projects contract expires, the District falls short of the requirement by 3.1 aMW starting in 2025.

As shown in **Table 14** 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.

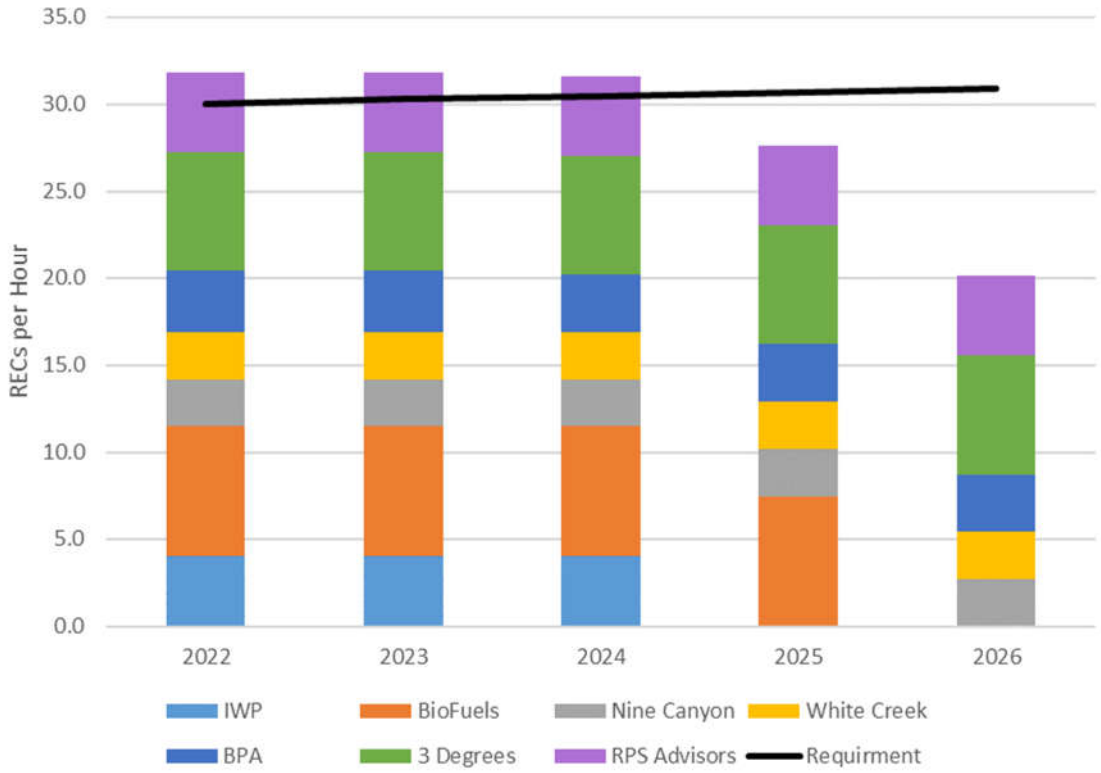

FIGURE 17: RENEWABLE RESOURCES AND RECS VS. EIA REQUIREMENT

	2022	2023	2024	2025	2026
Forecast Requirement	30.0	30.3	30.5	30.7	30.9
IWP	4.0	4.0	4.0	0.0	0.0
BioFuels	7.5	7.5	7.5	7.5	0.0
Nine Canyon	2.7	2.7	2.7	2.7	2.7
White Creek	2.7	2.7	2.7	2.7	2.7
BPA	3.5	3.5	3.5	3.3	3.3
3 Degrees	6.8	6.8	6.8	6.8	6.8
RPS Advisors	4.6	4.6	4.6	4.6	4.6
Net Position (aMW)	1.8	1.5	1.3	-3.1	-10.8

TABLE 13: RENEWABLE LOAD/RESOURCE NET POSITION

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	2022	2023	2024	2025	2026
IWP	35,003/$6.75	35,003/$6.75	35,003/$6.75	35,003/$8.00*	101,003/$8.00*
BioFuels	33,000/$11.64	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 14: 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, FY 2022-2026. 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 192.001 aMW in FY2022. The District's total retail load for FY22 is 209.365 aMW, with 192.001 aMW being served with BPA resources in critical water conditions, with an additional 16.445 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 FY2022 TOCA is 2.85022% and the Composite Charge is $1,998,417/TOCA%/month. The Composite Charge is forecasted to increase by 4.0% in FY2024 to $2,078,354/TOCA%/month. The total Composite charge in CY2022 is expected to be $68,351,137.
- **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 (2.85022%) and its Slice percentage (1.36792%). In FY2022, NSTOCA is 1.48230%. The Non-Slice Rate is ($329,943)/NSTOCA %/month in FY2022. The Non-Slice Charge is expected to be the same in FY2023 and beyond. The total credit in CY 2022 is expected to be ($5,868,894).

- **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 FY2022-2023 period. Therefore, the FRP surcharge has been removed through September 2021. Similar to the CRAC above, no FRP Surcharge is anticipated in the near future.
- **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. FY2022-2026 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.
- **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 forecast load shaping charge is a credit of $607,535 for CY2022. A pattern of larger credits in the even years followed by smaller credits in the odd years will continue due to the Columbia Generating Station (CGS) refueling outage falling in the odd years. The size of the FCRPS is smaller due to the outage, but the District is still able to purchase its total RHWM or NR.
- **Long-Term Point-to-Point Transmission Cost:** Fixed at $9,969,264 in CY2022. Staff is planning for a 6% rate increase over FY2022-23 for BPA FY2024-25 period
- **Load Regulation Cost:** Load regulation costs will decrease slightly as compared to increases in the past several years and is forecasted to be $816,844 in CY2022. The decrease is due to a BPA decision join the Energy Imbalance Market in March of 2022 and therefore BPA can carry less balancing reserves overall. The Load Regulation rate is planning for a 6% increase in FY2024.
- **Operating Reserves – Spinning:** $658,518 in CY2022. Spinning Reserves are 3% of total transmission schedules for generation and 3% of schedules for load.
- **Operating Reserves – Supplemental:** $ 430,272 in CY2022. 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:** $12,687 per year.
- **Reliability Coordinator Charges (CAISO/WECC):** $147,000 per year.
- **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 $77,976 in CY2022.
- **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 CY2022. **Table 15** displays the monthly credit that the District receives.

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

TABLE 15: IRRIGATION MITIGATION CREDIT AMOUNTS

- **Net Cost of Conservation:**

Year	BPA EEI Allocation	Cost of Conservation	Net Cost of Conservation
2022	$(2,196,000)	$2,488,810	$252,810
2023	$(1,692,000)	$2,088,500	$396,500
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

TABLE 16: 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:** $1,027,433 in 2022, increasing to $1,156,385 by 2026.
- **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 fixed fee of $1,744,810 annually is budgeted for Scheduling and Risk Management Services in 2022. The cost is assumed to increase by 3% annually.
  - An estimated charge for consulting services equals $184,200 for CY2022. An IRP is assumed to be undertaken in 2022. 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. The charge includes preparation of an Integrated Resource Plan in 2022 and 2024.

NON-BPA RESOURCE COSTS

- **Options and Capacity Product costs:** $193,750 is budgeted for option premiums in 2022. The amount increases to $2,518,750 in 2023. Additional purchases of call options are anticipated to make up for the reduction in generation capacity. The option premium budget increases to $3,493,750 in 2026 to account for the first full year under an expected assumption of a future capacity product.
- **Frederickson:** The monthly Frederickson fixed payment totals roughly $674,500. The primary components of this charge include a monthly capacity payment of $385,500 fixed for the life of the contract, a fixed O&M charge of approximately $188,000 per month, and a pipeline capacity charge of about $101,000 per month. Fixed costs are forecasted at $5,381,955 for CY2022. Volumetric charges vary based on the plant's actual dispatch. August is the last month of the Frederickson contract.
- **White Creek Wind 1:** $1,095,142 in 2022. Costs escalate by approximately 1.4% annually.
- **LL&P Wind:** $600,697 in 2022. Costs escalate by 2% per year.
- **Nine Canyon Wind Phases 1 & 3:** $2,002,584 in 2022 including transmission.
- **Packwood:** $464,744 in 2022 and escalates about 3% per year.

FIVE YEAR BUDGET PROPOSAL

The District uses Monte Carlo analysis to set its annual budget. The Stochastic Model allows the District to review the possible range of future financial outcomes by subjecting the portfolio to a thousand randomly generated Slice generation, price and load scenarios. The District selects the 25th percentile net power cost from the Stochastic Model outputs as its annual budget in Year 1 (2022), and the 50th percentile net power cost as the budget in Years 2-5 (2023-2026). **Table 17** is the summary power cost information associated with the District's budget for 2022-2026**.**

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

Benton PUD
Financial Model

	2022	2023	2024	2025	2026
I. FIXED COSTS					
BPA COSTS					
Tier 1					
Composite	$68,351,137	$69,034,649	$71,085,183	$71,973,747	$74,639,442
Non-Slice	($5,868,894)	($5,868,894)	($5,868,894)	($5,868,894)	($5,868,894)
Slice True-up/CRAC	$0	$0	$0	$0	$0
Load Shaping	($607,535)	($382,188)	($527,103)	($376,445)	($576,184)
Other BPA					
REP Refund	$0	$0	$0	$0	$0
BPA Power Prepay Credit	($161,256)	($161,256)	($161,256)	($161,256)	($161,256)
Irrigation Mitigation	($3,403,407)	($3,403,407)	($3,403,407)	($3,403,407)	($3,403,407)
Conservation	($2,196,000)	($1,692,000)	($2,196,000)	($1,692,000)	($2,196,000)
Transmission					
Long-Term PTP	$9,969,264	$10,118,803	$10,567,420	$10,831,605	$11,624,162
Short-Term PTP	$77,976	$77,976	$77,976	$77,976	$77,976
Load Regulation	$816,844	$823,635	$867,279	$889,232	$960,159
Operating Reserves -- Spinning	$658,518	$647,947	$682,045	$697,318	$752,938
Operating Reserves -- Supplemental	$430,272	$423,365	$445,644	$455,623	$491,965
Energy Imbalance UAI	$192,000	$192,000	$192,000	$192,000	$192,000
GTA Delivery Charge	$12,687	$12,623	$48,369	$48,334	$48,314
Non-BPA Transmission Purchases;					
WECC/Peak Fees	$147,000	$149,752	$157,687	$161,678	$174,574
PTP Resales	($1,100,000)	($1,100,000)	($1,100,000)	($1,100,000)	($1,100,000)
NON BPA RESOURCE COSTS					
Frederickson	$5,381,955				
White Creek	$1,695,839	$1,723,319	$1,751,550	$1,780,523	$1,808,663
Nine Canyon	$2,002,584	$1,753,295	$1,753,420	$1,753,420	$1,753,420
Packwood	$464,744	$471,078	$485,210	$499,766	$514,759
OTHER POWER COSTS					
Internal Costs and WECC fees	$1,027,433	$1,058,256	$1,090,004	$1,122,704	$1,156,385
TEA Scheduling & Risk Management	$1,744,810	$1,797,155	$1,851,069	$1,906,601	$1,963,799
TEA Consulting	$184,200	$109,800	$145,500	$116,500	$154,400
Cost of Conservation	$2,448,810	$2,088,500	$2,572,274	$2,699,443	$2,830,426
Option Premium	$193,750	$2,518,750	$2,518,750	$2,581,250	$3,493,750
REC PPAs	$ 1,195,390	$ 1,214,530	$ 1,234,660	$ 1,299,534	$ 1,383,024
II. VARIABLE COSTS					
RESOURCE VARIABLE COSTS					
Frederickson					
Volumetric Charges	$1,394,151				
Spot Gas	$3,481,724				
Forward Gas Purchases	$2,736,000				
Forward Gas Sales	$0				
Forward Power Purchases	$0				
Forward Power Sales	($5,086,769)				
Spot Power HLH	($3,104,184)				
Spot Power LLH	($2,185,395)				
BALANCING MARKET					
HLH Sales	($3,831,898)	($4,438,693)	($3,867,066)	($3,781,885)	($3,779,712)
HLH Purchases	$1,354,890	$1,446,488	$3,205,119	$2,994,327	$2,874,288
LLH Sales	($1,718,371)	($3,301,572)	($3,305,642)	($3,192,143)	($3,296,283)
LLH Purchases	$712,861	$200,276	$517,907	$316,472	$463,979
FORWARD MARKET					
Sales HLH	($355,720)	$0	$0	$0	$0
Sales LLH	($288,794)	$0	$0	$0	$0
Purchases HLH	$3,271,884	$1,691,844	$0	$0	$0
Purchases LLH	$96,628	$0	$0	$0	$0
NET POWER COST	**$80,135,127**	**$77,206,029**	**$80,819,694**	**$82,822,023**	**$86,976,687**

TABLE 17: FIVE YEAR BUDGET PROPOSAL

2021 VS. 2022 BUDGET VARIANCE

The 2022 net power supply budget are reduced slightly relative to the 2021 budget, which is summarized in **Table 18**. The largest year-over-year changes are expected purchased power and sales for resale.

Table 19 shows the change in the cost per MWh from BPA.

	2021 Budget	2022 Budget	% Change
BPA Purchased Power	$60,944,158	$58,310,045	-4%
Other Purchased Power	$26,149,788	$23,982,400	-8%
Net Conservation	$329,312	$252,810	-23%
Purchased Transmission and Ancillaries	$13,801,697	$14,161,003	3%
Gross Power Supply	$101,224,954	$96,706,258	-4%
Less: Sales for Resale	($17,921,753)	($16,571,131)	-8%
Net Power Supply	$83,303,201	$80,135,127	-4%

TABLE 18: POWER SUPPLY BUDGET VARIANCE SUMMARY

	2021 Budget	2022 Budget	% Change
BPA Power Cost	$60,944,158	$58,310,045	-4%
BPA Transmission Cost	$10,937,475	$11,204,560	2%
MWh from BPA	1,857,333	1,817,866	-2%
BPA Power Cost per MWh	$32.81	$32.08	-2%
Transmission Cost per MWh	$5.89	$6.16	5%

TABLE 19: COST PER MWH FROM BPA

Table 20 on the next page compares the detailed 2022 power supply budget to the 2021 budget.

TABLE 20: 2022 AND 2021 DETAILED POWER SUPPLY COST COMPARISON

Budget Item		Notes
1.	Composite Charge	0.1% decrease in 2022 costs from 2021 due to lower BPA Power costs in the BP-22 rate case
2.	Non-Slice Charge	64.7% increase in credit for 2022 compared to 2021
3.	Slice True-up/CRAC	100% decrease in 2022 costs from 2021 due to better financial situation at BPA
4.	Load Shaping Charge	25.3% increase in 2022 credit vs 2021 credit
5.	Conservation Credit	Conservation Credit reduced by 3.0% from 2021. The District had adjusted biennium spending (2020-2021) due to COVID. Projects were completed more in the 2nd year of the biennium (2021) as opposed to the first year (2020). Conservation budgets typically follow the cycle of conservation credits: greater in even years, less in odd years
6.	Long-Term PTP	5.1% increase in 2022 costs over 2021 due to higher BPA Transmission costs based on costs in the BP-22 rate case
7.	Cost of Conservation	Cost of Conservation decreased slightly to $2,448,810. Conservation budgets typically follow the cycle of conservation credits: greater in even years, less in odd years. This was changed in the biennium 2020-2021 due to the impact of COVID on outreach and projects for Conservation.
8.	Frederickson	Power sales margins from Frederickson operations are forecasted to be $2,764,473, a decrease of 31% from the 2021 budget. This is largely due to the end of the Frederickson PPA after August 2022.
9.	Balancing Market	The Slice generation assumption for 2022 is slightly lower relative to the 2021 budget.

Year	25th Percentile Slice Generation
2021 Budget	108.6 aMW
2022 Budget	108.2 aMW
Delta	-0.4 aMW

Purchased MWhs	January	February	March	April	May	June	July	August	September	October	November	December	Total
BPA													
Slice HLH	52,929	48,047	55,379	43,681	49,327	54,931	46,687	44,624	40,179	38,415	48,904	55,954	579,057
Slice LLH	37,910	29,145	32,636	25,060	34,641	32,974	32,468	25,290	25,513	24,267	32,282	36,414	368,601
Block HLH	41,010	32,691	32,759	35,058	41,010	51,585	58,253	54,357	34,672	32,078	33,787	39,974	487,235
Block LLH	35,269	24,518	23,584	25,619	35,269	37,697	50,098	39,258	27,738	25,292	27,114	31,518	382,973
Total BPA Purchases	**167,119**	**134,401**	**144,357**	**129,418**	**160,248**	**177,186**	**187,507**	**163,530**	**128,102**	**120,052**	**142,087**	**163,860**	**1,817,866**
Other Power													
Frederickson HLH	20,000	19,200	21,600	20,800	-	20,800	20,000	21,600	-	-	-	-	144,000
Frederickson LLH	17,200	14,400	15,550	15,200	-	15,200	17,200	15,600	-	-	-	-	110,350
White Creek Wind HLH	1,200	1,152	1,296	1,248	1,200	1,248	1,200	1,296	1,200	1,248	1,200	1,248	14,736
White Creek Wind LLH	1,032	864	933	912	1,032	912	1,032	936	960	984	963	984	11,544
Nine Canyon Wind HLH	1,134	1,017	1,329	1,125	1,089	1,097	984	1,025	942	1,089	1,133	1,182	13,145
Nine Canyon Wind LLH	975	763	956	822	936	801	846	740	754	859	909	932	10,294
Packwood HLH	575	473	537	602	970	1,076	872	469	551	27	741	664	7,556
Packwood LLH	495	355	386	440	834	787	750	339	441	21	594	524	5,964
Balancing Market HLH	-	-	-	-	9,270	2,527	-	-	-	3,124	-	-	14,921
Balancing Market LLH	-	-	-	-	-	-	-	-	3,005	-	-	-	3,005
"Churn" Purchases HLH	1,600	1,613	1,469	4,784	5,800	5,907	4,040	3,629	4,640	3,162	1,960	1,914	40,517
"Churn" Purchases LLH	1,376	1,210	1,057	3,496	4,988	4,317	3,474	2,621	3,712	2,493	1,573	1,509	31,826
Swaps HLH - Slice	-	-	-	4,160	4,000	4,160	20,000	21,600	20,000	-	-	-	73,920
Swaps LLH - Slice	-	-	-	3,040	3,440	3,040	-	-	-	-	-	-	9,520
Swaps HLH - Thermal	-	-	-	-	-	-	-	-	-	-	-	-	-
Swaps LLH - Thermal	-	-	-	-	-	-	-	-	-	-	-	-	-
Options HLH (delta volume)	-	-	-	-	-	-	-	-	-	-	-	-	-
Options LLH (delta volume)	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Other Power Purchases	**45,586**	**41,046**	**45,113**	**56,629**	**33,558**	**61,872**	**70,397**	**69,855**	**36,205**	**13,005**	**9,073**	**8,957**	**491,297**
TOTAL PURCHASES	**212,705**	**175,448**	**189,471**	**186,047**	**193,806**	**239,058**	**257,904**	**233,385**	**164,307**	**133,058**	**151,159**	**172,817**	**2,309,163**
Less													
Sales for Resale													
Balancing Market HLH	15,750	10,911	15,154	17,272	-	-	6,332	9,469	7,939	-	13,496	10,414	106,737
Balancing Market LLH	16,783	8,961	15,369	19,189	4,822	11,593	1,476	975	-	3,935	9,603	5,593	98,299
"Churn" Sales HLH	1,600	1,613	1,469	4,784	5,800	5,907	4,040	3,629	4,640	3,162	1,960	1,914	40,517
"Churn" Sales LLH	1,376	1,210	1,057	3,496	4,988	4,317	3,474	2,621	3,712	2,493	1,573	1,509	31,826
Swaps HLH - Slice	2,000	1,920	6,480	-	-	-	-	-	-	-	-	-	10,400
Swaps LLH - Slice	3,440	2,880	3,110	-	-	-	-	-	-	-	-	-	9,430
Swaps HLH - Thermal	12,000	11,520	12,960	12,480	12,000	12,480	8,000	8,640	8,000	-	-	-	98,080
Swaps LLH - Thermal	6,880	5,760	6,220	3,040	3,440	3,040	6,880	6,240	6,400	-	-	-	47,900
Options HLH (delta volume)	-	-	-	-	-	-	-	-	-	-	-	-	-
Options LLH (delta volume)	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Sales for Resale	**59,829**	**44,775**	**61,818**	**60,260**	**31,050**	**37,337**	**30,203**	**31,574**	**30,691**	**9,590**	**26,632**	**19,429**	**443,188**
Losses/Imbalance													
Losses HLH	1,702	1,492	1,852	1,437	1,025	1,828	1,611	1,594	836	795	1,302	1,381	16,857
Losses LLH	1,343	969	1,186	923	841	1,171	1,208	991	618	598	882	884	11,613
Total Losses	**3,045**	**2,461**	**3,038**	**2,360**	**1,866**	**2,999**	**2,819**	**2,585**	**1,454**	**1,393**	**2,184**	**2,265**	**28,470**
TOTAL SALES/LOSSES	**62,874**	**47,236**	**64,856**	**62,620**	**32,916**	**40,336**	**33,022**	**34,160**	**32,145**	**10,983**	**28,816**	**21,695**	**471,658**
NET PURCHASES	**149,831**	**128,212**	**124,614**	**123,427**	**160,890**	**198,722**	**224,882**	**199,225**	**132,162**	**122,075**	**122,343**	**151,122**	**1,837,505**

WA $/MWh Secondary Sales	January	February	March	April	May	June	July	August	September	October	November	December	Total
ATC	$ 47.19	$ 43.23	$ 36.42	$ 25.93	$ 26.63	$ 32.25	$ 80.24	$ 91.42	$ 85.05	$ 43.63	$ 43.41	$ 52.45	$ 47.65

TABLE 21: 2022 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.

STOCHASTIC MODEL RESULTS – NET POWER COST: 2022-2026

Percentile	2022	2023	2024	2025	2026
5%	$86,555,797	$87,840,263	$91,694,043	$95,381,369	$99,363,581
10%	$84,073,072	$85,394,948	$89,580,982	$92,707,549	$95,748,927
15%	$82,746,781	$83,682,631	$87,799,313	$90,802,151	$94,560,824
20%	$81,402,402	$82,331,375	$86,669,136	$89,347,521	$93,030,402
25%	$80,135,128	$81,299,993	$85,432,638	$87,985,205	$91,984,801
30%	$79,135,159	$80,431,119	$84,512,508	$86,341,689	$90,819,132
35%	$78,393,101	$79,689,899	$83,452,917	$85,264,814	$89,669,190
40%	$77,579,756	$78,660,765	$82,648,681	$84,302,756	$88,554,964
45%	$77,043,954	$77,963,164	$81,524,355	$83,625,416	$87,739,299
50%	$76,407,330	$77,206,028	$80,819,695	$82,822,024	$86,976,687
55%	$75,637,435	$76,432,763	$80,044,794	$82,266,651	$86,112,896
60%	$75,090,548	$75,918,519	$79,307,705	$81,586,148	$85,297,020
65%	$74,523,955	$75,228,388	$78,667,408	$80,925,823	$84,753,411
70%	$73,895,604	$74,604,035	$78,084,487	$80,111,116	$83,972,733
75%	$73,217,821	$73,905,649	$77,430,763	$79,288,845	$83,216,552
80%	$72,465,595	$73,082,444	$76,379,467	$78,501,314	$82,263,954
85%	$71,561,107	$72,010,394	$75,571,090	$77,552,245	$81,306,195
90%	$70,362,682	$71,028,775	$74,718,043	$76,067,375	$80,047,780
95%	$68,816,955	$69,601,273	$73,438,740	$74,409,298	$78,377,007

TABLE 22: ANNUAL NET POWER COST PERCENTILES

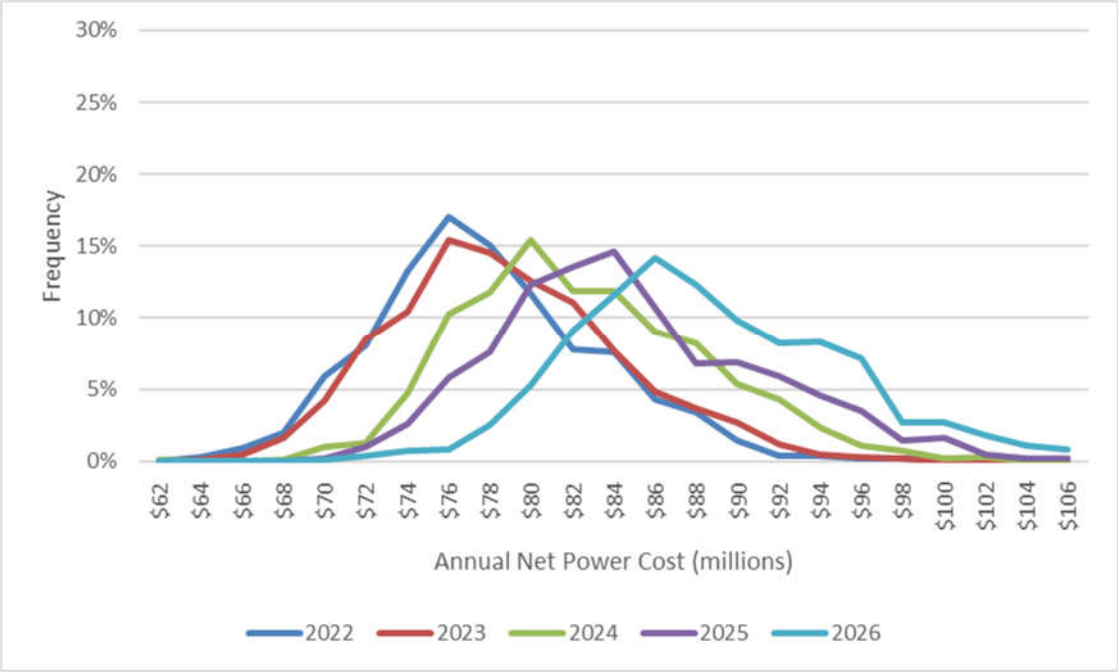

FIGURE 18: NET POWER COST DISTRIBUTION

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 19** shows the various components of the Stochastic Model and how each flows through to produce the financial metrics important to the District.

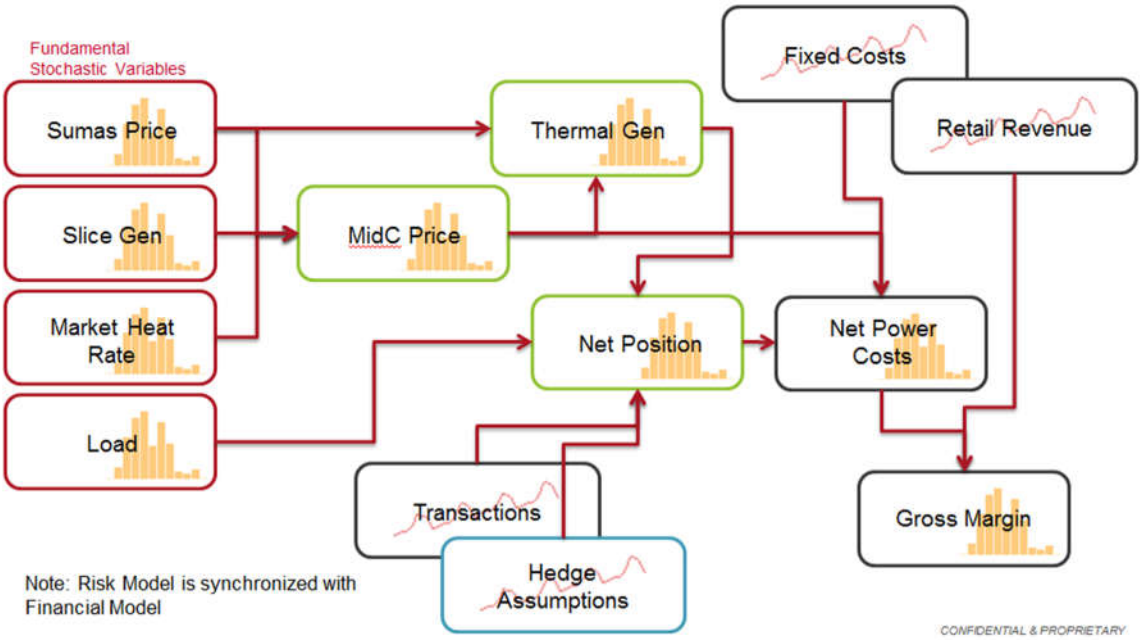

FIGURE 19: RISK MODEL COMPONENTS FLOW-CHART

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 20** 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 2022 budget with transmission losses included. **Figure 21** shows the 10th and 90th percentile LLH load outputs relative to the LLH load forecast used to develop the 2022 budget also with transmission losses included.

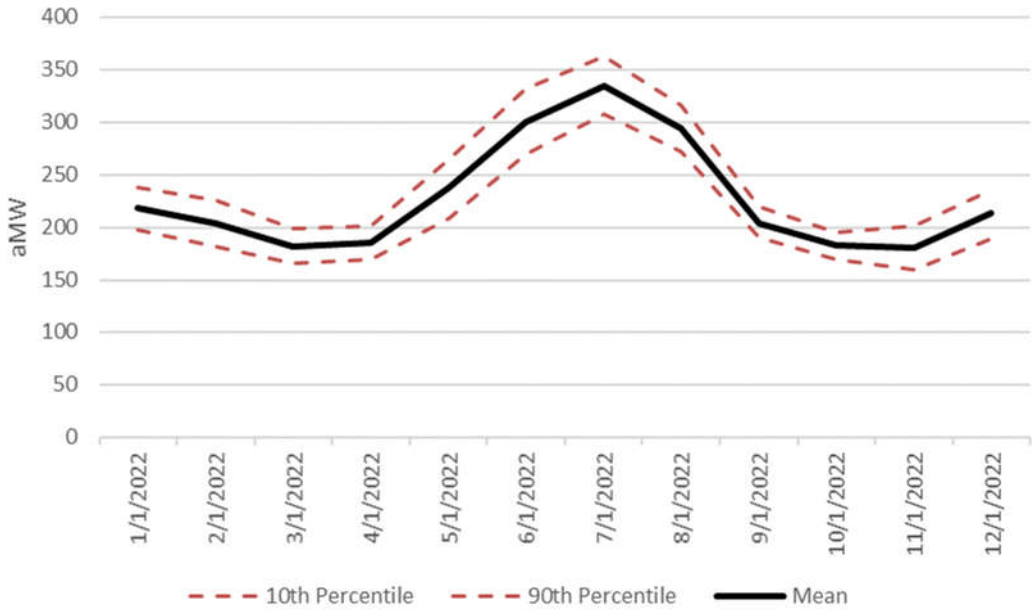

FIGURE 20: STOCHASTIC MODEL OUTPUT: 2022 HLH LOADS

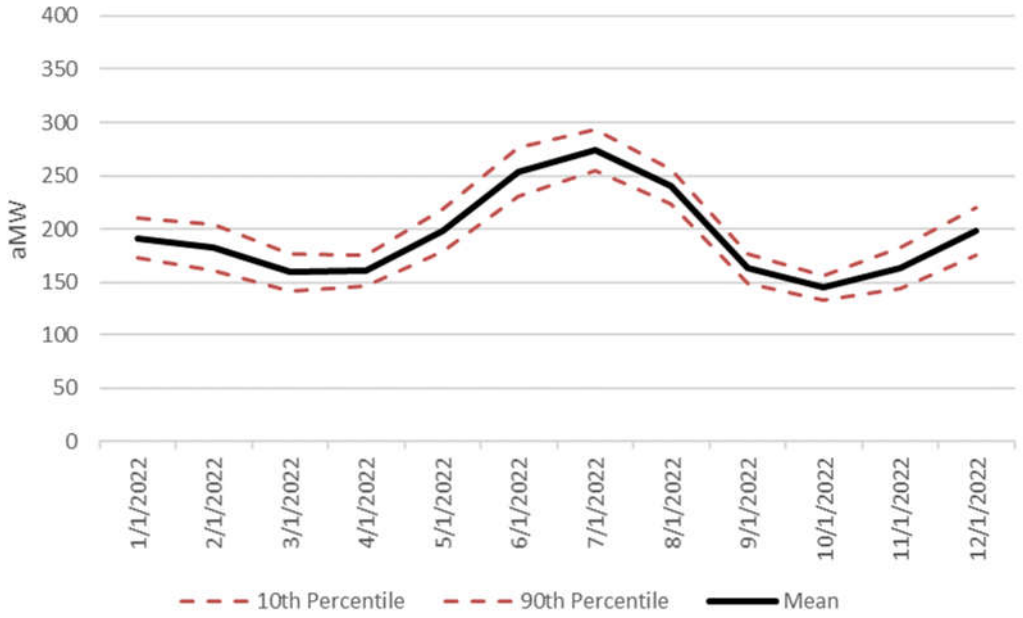

FIGURE 21: STOCHASTIC MODEL OUTPUT: 2022 LLH LOADS

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.

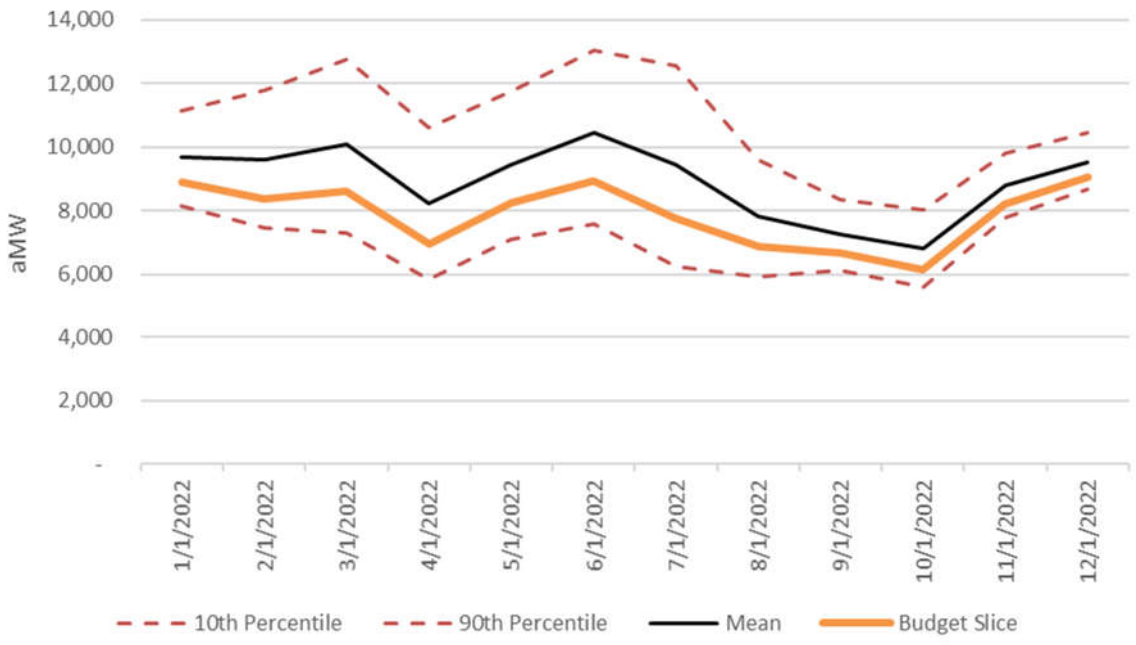

FIGURE 22: STOCHASTIC MODEL OUTPUT: 2022 SLICE GENERATION

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 23** shows the average Sumas gas price distribution from the Stochastic Model relative to the gas price assumed in the 2022 budget.

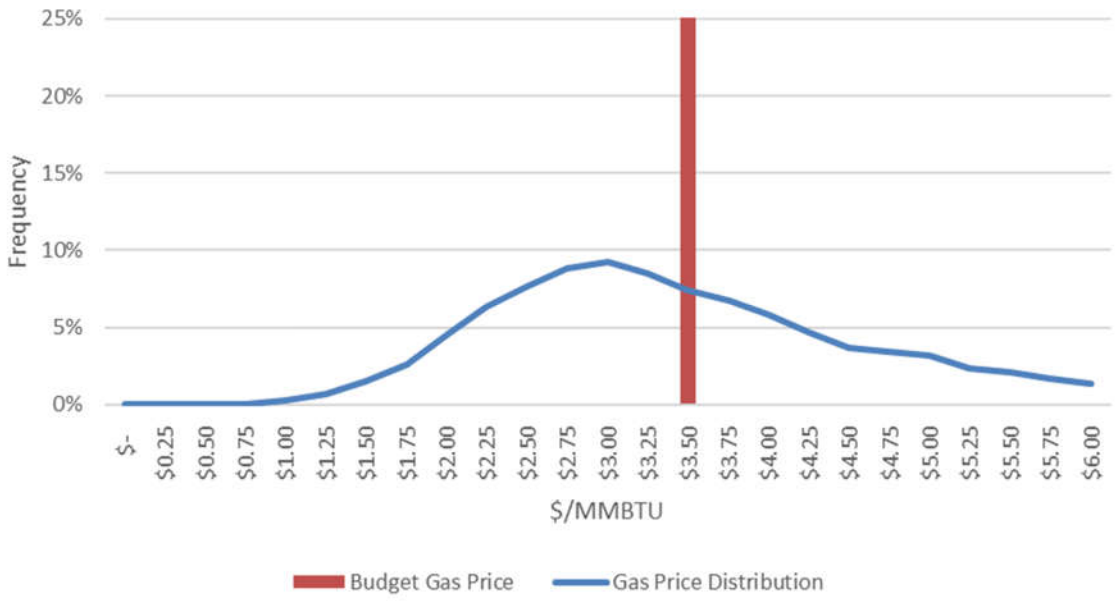

FIGURE 23: STOCHASTIC MODEL OUTPUT: 2022 GAS PRICE DISTRIBUTION

HEAT RATE

Heat Rate is a measure of a power plant's efficiency in converting fuel to electricity, expressed as the number of British thermal units (Btu) required to generate a kilowatt hour (kWh) of electricity. In the stochastic model gas prices are generated and parameterized based on historical volatility. Market heat rates are then derived by correlating market heat rates with Slice generation and WECC transmission constraints. This accounts for the fact that the effect of high gas prices can be partially offset by robust hydro generation and vice versa. Market heat rates generated by Aurora are fed into the Model and applied to simulated gas prices to arrive at simulated market power prices. **Figure 24** and **Figure 25** show the average HLH and LLH heat rate distribution from the stochastic model relative to the 2022 HLH and LLH heat rate budget assumption. The stochastic model projects a very long tail for HLH heat rate distributions. This is an artifact of the model capturing and reflecting market behavior from the summer of 2018, when power prices reached the triple digits with gas prices remaining in the $2/MMBTU range. Though it is anomalous for market heat rates to exceed the heat rate of even the most inefficient thermal units, it is not unprecedented and reflects scarcity pricing.

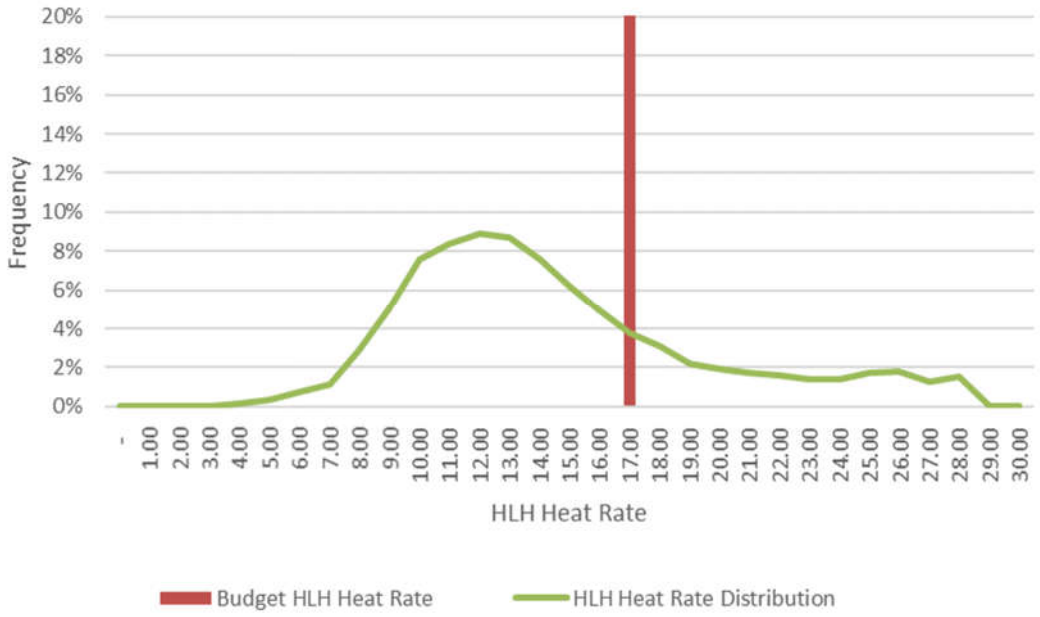

FIGURE 24: STOCHASTIC MODEL OUTPUT: 2022 HLH HEAT RATE DISTRIBUTION

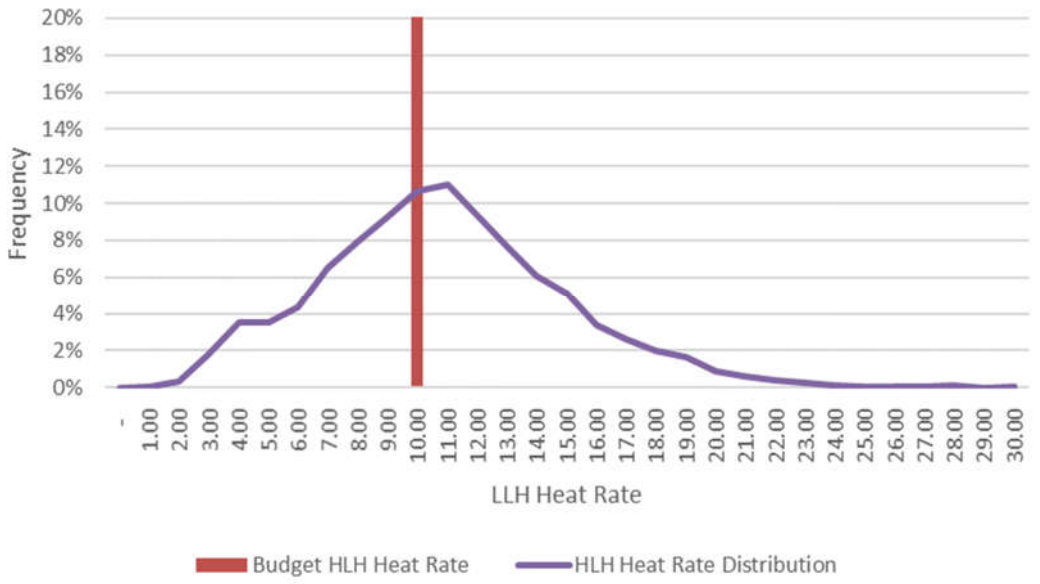

FIGURE 25: STOCHASTIC MODEL OUTPUT: 2022 LLH HEAT RATE DISTRIBUTION

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 26** and **Figure 27** show the average HLH and LLH power price distribution from the stochastic model relative to the 2022 HLH and LLH budget price assumptions.

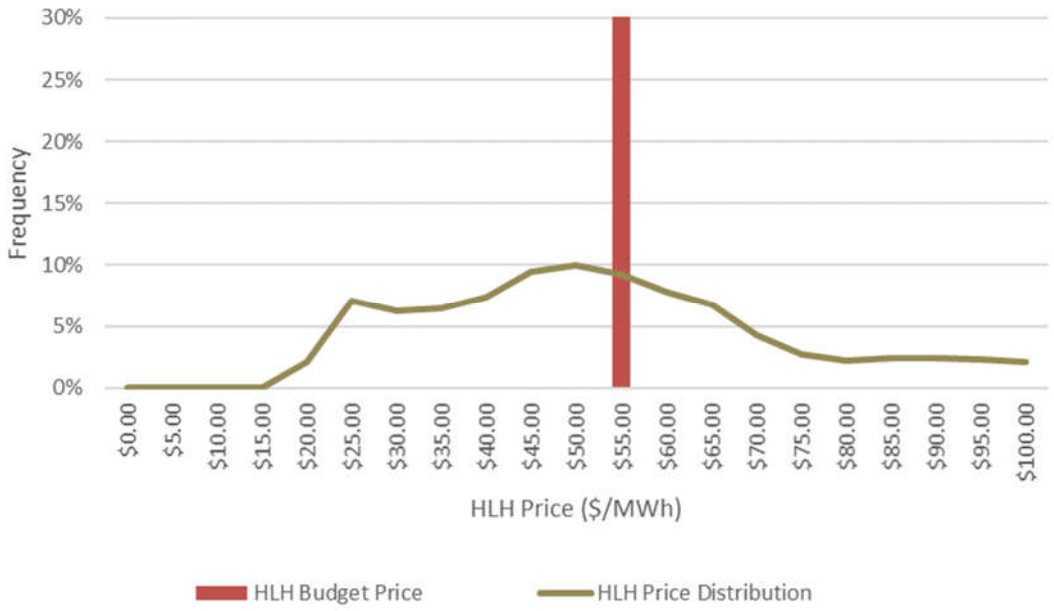

FIGURE 26: STOCHASTIC MODEL OUTPUT: 2022 HLH POWER PRICE DISTRIBUTION

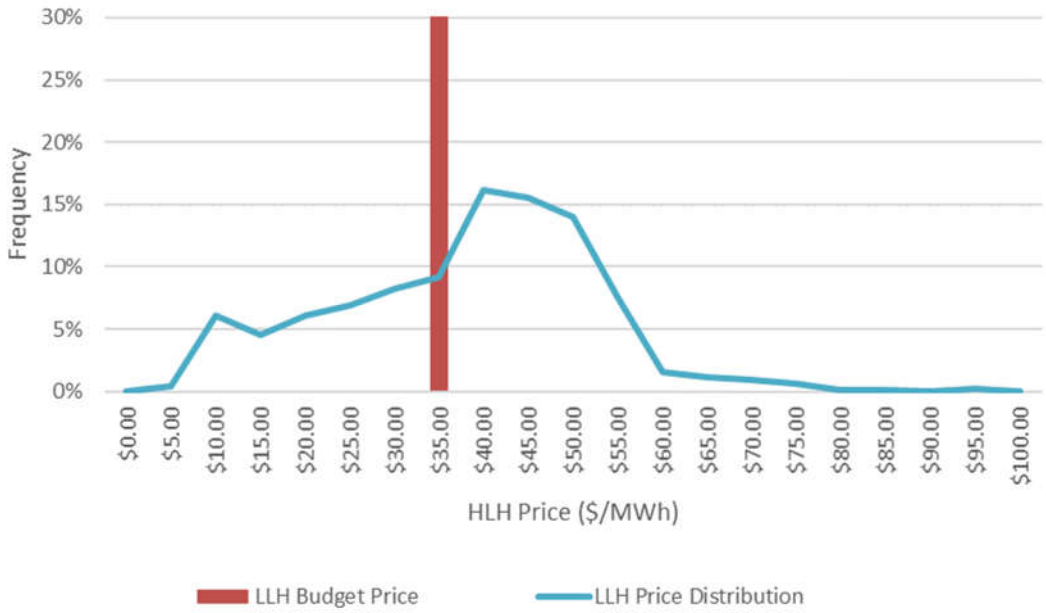

FIGURE 27: STOCHASTIC MODEL OUTPUT: 2022 LLH POWER PRICE DISTRIBUTION