# 2021 Budget

**Including:**

- Comparative Operating Statement
- Comparative Capital Budget
- Comparative Budget by Activity
- Revenue Summary
- Budget Activity by Department
- Department Detail Budget

BENTON P.U.D

RP3 RELIABLE PUBLIC POWER PROVIDER
American Public Power Association

***December 8, 2020***

# Overview

Tab 1

To: Benton PUD Commissioners

From: Rick Dunn, General Manager

Date: December 8, 2020

Re: 2021 Budget

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Benton PUD's 2021 Preliminary Budget was presented to the Commission at a public hearing on Tuesday, November 10, 2020. The preliminary budget is a first draft of the District's forecasted revenues and proposed expenditures for the coming year. Since then, staff has reviewed both expenses and revenues and no significant changes were identified. The proposed 2021 Budget supports our strategic goals and highest priorities. To provide a point of reference, the table below compares the 2021 Budget to the original 2020 budget.

| *Dollars in thousands* | 2021 Budget | 2020 Original Budget | Increase/ (Decrease) | % Change |
|---|---|---|---|---|
| **Revenues (excluding Secondary Market Sales)** | **$137,671** | **$142,163** | **($4,492)** | **(3.2%)** |
| **Expenses (including Secondary Market Sales)** | | | | |
| Purchased Power | 89,895 | 89,627 | 268 | 0.3% |
| Purchased Transmission & Ancillary Services | 14,689 | 14,467 | 222 | 1.5% |
| Net Conservation | 325 | 344 | (19) | (5.5%) |
| **Less**: Secondary Market Sales | 23,428 | 20,419 | 3,009 | 14.7% |
| **Net Power Expenses** | **$81,481** | **$84,019** | **($2,538)** | **(3.0%)** |
| Transmission Operation & Maintenance | 164 | 165 | (1) | (0.6%) |
| Distribution Operation & Maintenance | 12,344 | 12,080 | 264 | 2.2% |
| Broadband Expense | 1,166 | 1,071 | 95 | 8.9% |
| Customer Accounting | 4,706 | 4,915 | (209) | (4.3%) |
| Administrative & General | 8,412 | 7,684 | 728 | 9.5% |
| **Subtotal before Taxes & Depreciation** | **26,792** | **25,915** | **877** | **3.4%** |
| Taxes | 14,231 | 14,689 | (458) | (3.1%) |
| Depreciation/Amortization | 10,172 | 10,111 | 61 | 0.6% |
| **Non-Power Operating Expenses** | **$51,195** | **$50,715** | **$480** | **0.9%** |
| Gross Capital | 21,269 | 17,293 | 3,976 | 23.0% |
| **Less**: Capital Contributions | 2,452 | 1,802 | 650 | 36.1% |
| **Net Capital Additions** | **$18,817** | **$15,491** | **$3,326** | **21.5%** |
| **Debt Service (including BABs Subsidy)** | **$5,228** | **$5,795** | **($567)** | **(9.8%)** |

**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 2021, 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 2021 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 2020 budget, the 2021 Budget includes a forecasted reduction in retail revenues due to COVID-19 impacts on business-customer loads; 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 May 12, 2020 without including impacts of the COVID-19 pandemic. Since this time, it has become clear the pandemic has eroded general service loads and that it will be difficult for some businesses to stay viable going forward.

Based on electricity consumption analytics, staff adjusted the 2021 Budget revenues to reflect a 15% reduction in general service loads to start the year and has 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 is significant. However, continued new customer growth in 2021 along with a gradual recovery of businesses is expected to provide an offset to the sizeable reduction in general service loads resulting in a net $4.492 million (3.2%) reduction in budgeted 2021 revenues compared to 2020. 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 represent nearly 60% of the District's annual costs. These expenses include purchased power (net of revenue from selling surplus electricity into the wholesale power market), and transmission services.

The 2021 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 25$^{th}$ percentile of the distribution of simulated outcomes which represents a 75% probability that the net power budget will be achieved.

Overall, 2021 net power expenses are expected to be $2.5 million less than the 2020 original budget which represents a 3% reduction. The main driver for the decrease is the District's general service

estimated load reduction due to COVID-19. Less load means the District will not need to procure as much power or will have more surplus power to sell resulting in either lower costs or higher revenue for the District.

**Non-Power Operating Expenses**

Non-power operating expenses are expected to increase $0.5 million or 0.9% over the 2020 original budget. Depreciation expenses are expected to increase slightly while tax expenses have been reduced to reflect the forecasted reduction in retail electricity sales. Overall, non-power operating expenses, before taxes and depreciation, represent approximately 18% of the District's expenditures. 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 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 2021 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 2021 total gross capital budget has been set at $21.2 million including the following five categories: $3.8 million (18%) for transmission system additions; $12.2 million (57.5%) for substation and distribution projects; $1.5 million (7%) for information technology projects; $1.9 million (9%) for general plant; and $1.8 million (8.5%) for broadband projects. A credit of $2.5 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 2021 Net Capital Additions of $18.8 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 of 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 2021 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 our long-term success. 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**

# 2021 BUDGET - KEY ASSUMPTIONS

## REVENUES

- The 2021 Budget reflects no revenue increase.
- Gross retail energy sales of $132.9 million are based on 203 aMW of retail load.
- Sales for resale are estimated at $23.4 million.
- 802 new customer connections are included in the 2021 load forecast, medium load growth (see Tab 8) and of these new customer connections, 718 are residential.

## POWER & TRANSMISSION COSTS *(see Tab 10, 2021 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 25$^{th}$ 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 25$^{th}$ 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 $3.5 million in CY 2021.
  - Conservation program costs for CY 2021 are $2.6 million, offset by a $2.3 million reimbursement from BPA.
  - No Cost Recovery Adjustment Clauses (CRACs) are assumed for CY 2021.
  - Court ordered additional spill costs are included in BPA's rates for 2021.
  - No slice true-up credit is assumed for CY 2021.
  - 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 $6.5 million are based on total District labor of $15.7 million. Employee benefit costs include the District's share of FICA, Medicare, retirement, medical, dental, life insurance, short-term disability insurance, personal leave, retirement, unemployment tax, and state industrial insurance (see Tab 5).

# 2021 BUDGET - KEY ASSUMPTIONS

(CONTINUED)

**FINANCING**

- In 2020, the District issued $20 million in new bonds to provide funds for capital improvements to the Electric System.
- No debt issuance is assumed in the 2021 Budget.

**CAPITAL**

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

- Includes $3.8 million for new transmission line planning and design.
  - New transmission line from Phillips to Spaw
  - Hedges 115kV metering point

- Includes $12.2 million for distribution system upgrades and additions.
  - $4.4 million for projected customer growth, such as requested electrical line extension, transformers, and meters (718 new service)
  - $4.0 million for capacity and reliability upgrades and additions
  - $1.5 million for repair and replacement of aging underground cable

- Includes $1.5 million for Information Technology network reliability upgrades, security enhancements, utility analytics, and enterprise applications.

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

- Includes $1.9 million for equipment replacements and facilities improvements/replacements.
  - Transmission high capacity line truck replacement
  - Physical security audit recommendations phase 1

# Annual Budget Summary

**Tab 3**

## Comparative Operating Statement
**Public Utility District No. 1 of Benton County**
**2021 Budget**

| | 2021 Budget | 2020 Original Budget | Increase/ (Decrease) | % Change |
|---|---|---|---|---|
| **OPERATING REVENUES** | | | | |
| Energy Sales - Retail [1] | $132,983,984 | $137,001,522 | ($4,017,538) | (2.9%) |
| Energy Secondary Market Sales | 22,527,727 | 19,518,637 | 3,009,090 | 15.4% |
| Transmission of Power for Others | 900,000 | 900,000 | - | 0.0% |
| Broadband Revenue | 2,921,407 | 2,638,253 | 283,154 | 10.7% |
| Other Revenue | 1,415,720 | 1,523,700 | (107,980) | (7.1%) |
| **TOTAL OPERATING REVENUES** | **160,748,838** | **161,582,112** | **(833,274)** | **(0.5%)** |
| **OPERATING EXPENSES** | | | | |
| Purchased Power | 89,894,685 | 89,626,501 | 268,184 | 0.3% |
| Purchased Transmission and Ancillary Services | 14,689,033 | 14,467,044 | 221,989 | 1.5% |
| Conservation | 325,298 | 343,793 | (18,495) | (5.4%) |
| Total Power Supply | 104,909,017 | 104,437,338 | 471,678 | 0.5% |
| Transmission Operation & Maintenance | 164,242 | 165,419 | (1,177) | (0.7%) |
| Distribution Operation & Maintenance | 12,343,707 | 12,080,052 | 263,654 | 2.2% |
| Broadband Expense | 1,166,295 | 1,071,293 | 95,002 | 8.9% |
| Customer Accounting, Collection and Information | 4,705,890 | 4,914,573 | (208,683) | (4.2%) |
| Administrative & General | 8,412,372 | 7,683,735 | 728,638 | 9.5% |
| Subtotal before Taxes & Depreciation | 26,792,505 | 25,915,072 | 877,433 | 3.4% |
| Taxes | 14,231,000 | 14,689,000 | (458,000) | (3.1%) |
| Depreciation & Amortization | 10,172,186 | 10,110,642 | 61,544 | 0.6% |
| Total Other Operating Expenses | 51,195,691 | 50,714,714 | 480,977 | 0.9% |
| **TOTAL OPERATING EXPENSES** | **156,104,708** | **155,152,052** | **952,655** | **0.6%** |
| **OPERATING INCOME (LOSS)** | **4,644,130** | **6,430,060** | **(1,785,929)** | **(27.8%)** |
| **NONOPERATING REVENUES & EXPENSES** | | | | |
| Interest Income | 350,000 | 1,000,000 | (650,000) | (65.0%) |
| Other Income | 376,070 | 376,070 | - | 0.0% |
| Interest Expense | (2,907,621) | (2,591,154) | (316,467) | 12.2% |
| Debt Discount & Expense Amortization | 418,421 | 359,620 | 58,801 | 16.4% |
| **TOTAL NONOPERATING REVENUES & EXPENSES** | **(1,763,130)** | **(855,464)** | **(907,666)** | **106.1%** |
| **INCOME (LOSS) BEFORE CONTRIBUTIONS** | **2,881,000** | **5,574,596** | **(2,693,595)** | **(48.3%)** |
| **CAPITAL CONTRIBUTIONS** | **2,451,526** | **1,801,775** | **649,751** | **36.1%** |
| **CHANGE IN NET POSITION** | **$5,332,526** | **$7,376,371** | **($2,043,844)** | **(27.7%)** |
| **NET POWER** [1] | **$81,481,290** | **$84,018,701** | **($2,537,412)** | **(3.0%)** |
| **CHANGE IN NET POSITION** | **$5,332,526** | **$7,376,371** | **($2,043,844)** | **(27.7%)** |
| Less: Gross Capital in Excess of Depreciation | (11,096,315) | (7,182,224) | (3,914,091) | 54.5% |
| Less: Principal Payment on Outstanding Debt | (3,115,000) | (3,940,000) | 825,000 | (20.9%) |
| Plus: Non-Cash Items (Prepaid Expense Amortizations, etc.) | 598,715 | 657,516 | (58,801) | (8.9%) |
| **ESTIMATED ADDITION/(REDUCTION) TO CASH RESERVES** | **($8,280,074)** | **($3,088,337)** | **($5,191,736)** | **168.1%** |
| **2020 Bond Proceeds** | **$20,007,652** | | | |
| **ESTIMATED ADDITION/(REDUCTION) TO CASH RESERVES** | **$11,727,579** | | | |

# Comparative Capital Budget
## Public Utility District No. 1 of Benton County
## 2021 Budget

| Capital Category | Project Group | 2021 Budget | 2020 Original Budget | Increase/ (Decrease) | % Change |
|---|---|---|---|---|---|
| **Transmission** | Transmission Projects | $3,805,851 | $620,328 | $3,185,523 | 513.5% |
| **Distribution** | Capacity & Reliability | 4,087,891 | 5,524,917 | (1,437,026) | (26.0%) |
| | Customer Growth | 5,249,445 | 4,879,724 | 369,721 | 7.6% |
| | General Plant | 200,000 | 200,000 | - | 0.0% |
| | Other | 690,288 | 192,500 | 497,788 | 258.6% |
| | Repair & Replace | 1,992,898 | 1,995,000 | (2,102) | (0.1%) |
| Total | | 12,220,522 | 12,792,141 | (571,619) | (4.5%) |
| **Broadband** | Broadband | 1,827,034 | 2,101,128 | (274,094) | (13.0%) |
| **General Plant** | General Plant | 1,905,755 | 620,800 | 1,284,955 | 207.0% |
| **Information Technology** | Information Technology | 1,509,339 | 1,158,469 | 350,870 | 30.3% |
| **Grand Total (Gross)** | | **21,268,501** | **17,292,866** | **3,975,635** | **23.0%** |
| **Contributions in Aid** | Broadband | (58,800) | (73,500) | 14,700 | (20.0%) |
| | Capacity & Reliability | (691,300) | - | (691,300) | N/A |
| | Customer Growth | (1,648,401) | (1,644,000) | (4,401) | 0.3% |
| | Other | (53,025) | (84,275) | 31,250 | (37.1%) |
| Total | | (2,451,526) | (1,801,775) | (649,751) | 36.1% |
| **Net Capital** | | **$18,816,975** | **$15,491,091** | **$3,325,884** | **21.5%** |

# Comparative Budget by Activity Code
## Public Utility District No. 1 of Benton County
## 2021 Budget

| | | 2021 Budget | 2020 Original Budget | Increase/ (Decrease) | % Change |
|---|---|---|---|---|---|
| **Allocated Costs:** | | | | | |
| 88 | Payroll Taxes | $1,182,365 | $1,148,190 | $34,175 | 3.0% |
| 101 | Employee Benefits | 5,361,679 | 5,672,155 | (310,476) | (5.5%) |
| | **Allocated Cost Total** | **6,544,044** | **6,820,345** | **(276,301)** | **(4.1%)** |
| **Payroll:** | | | | | |
| 10 | District Overtime Labor | 771,322 | 745,095 | 26,227 | 3.5% |
| 11 | All Other District Labor | 14,899,809 | 14,538,797 | 361,012 | 2.5% |
| | **District Labor Total** | **15,671,131** | **15,283,892** | **387,239** | **2.5%** |
| **Power Cost:** | | | | | |
| 9 | Purchased Power | 101,166,751 | 100,518,131 | 648,620 | 0.6% |
| | **Power Cost Total** | **101,166,751** | **100,518,131** | **648,620** | **0.6%** |
| **System Costs:** | | | | | |
| 1 | Unidentified Under Run / Carry Over | - | (695,000) | 695,000 | n/a |
| 12 | Materials & Supplies | 5,650,580 | 3,872,684 | 1,777,896 | 45.9% |
| 13 | Store Expense - Non Labor | 25,000 | 25,000 | - | 0.0% |
| 14 | Small Tools & Materials | 119,950 | 112,450 | 7,500 | 6.7% |
| 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 | 434,922 | 427,922 | 7,000 | 1.6% |
| 18 | Misc Construction Expense | 229,665 | 187,892 | 41,773 | 22.2% |
| 19 | Tree Trimming - Contract | 825,000 | 805,000 | 20,000 | 2.5% |
| 20 | Off-the-Dock Labor | 1,075,897 | 1,296,496 | (220,599) | (17.0%) |
| 21 | Elec Construction Contracts | 4,263,249 | 2,980,073 | 1,283,176 | 43.1% |
| 23 | Environmental | 22,000 | 22,000 | - | 0.0% |
| | **System Cost Total** | **13,063,263** | **9,451,517** | **3,611,746** | **38.2%** |
| **General Expenditures:** | | | | | |
| 25 | Maintenance of Software | 1,163,433 | 1,059,350 | 104,083 | 9.8% |
| 26 | Computer Hardware & Equip Exp | 91,000 | 74,000 | 17,000 | 23.0% |
| 27 | Personal Computer Software | 87,200 | 89,500 | (2,300) | (2.6%) |
| 28 | Personal Computer O&M Costs | 200,700 | 187,700 | 13,000 | 6.9% |
| 29 | Personal Computer Supplies&Exp | 10,000 | 10,000 | - | 0.0% |
| 30 | Customer Service Expenses | 452,364 | 407,500 | 44,864 | 11.0% |
| 33 | Office Supplies & Expenses | 81,200 | 79,100 | 2,100 | 2.7% |
| 34 | Insurance | 643,450 | 584,700 | 58,750 | 10.0% |
| 37 | Grounds Care | 93,000 | 93,000 | - | 0.0% |
| 38 | Maint of Bldg & Improvements | 308,000 | 315,000 | (7,000) | (2.2%) |
| 39 | Maint of Equipment | 40,400 | 40,400 | - | 0.0% |
| 40 | Rents | 323,011 | 373,284 | (50,273) | (13.5%) |
| 41 | Insurance Damages & Other Reim | 10,000 | 10,000 | - | 0.0% |

# Comparative Budget by Activity Code
## Public Utility District No. 1 of Benton County
## 2021 Budget

| | 2021 Budget | 2020 Original Budget | Increase/ (Decrease) | % Change |
|---|---|---|---|---|
| 42 Business Expense & Travel | 167,325 | 267,100 | (99,775) | (37.4%) |
| 43 Training Expense & Travel | 163,301 | 250,060 | (86,759) | (34.7%) |
| 44 Other General Expenses | 1,073,094 | 982,165 | 90,929 | 9.3% |
| 45 Subscriptions & Publications | 23,991 | 24,961 | (970) | (3.9%) |
| 46 Treasurer Expenses | 485,000 | 451,000 | 34,000 | 7.5% |
| **General Expenditure Total** | **5,416,469** | **5,298,820** | **117,649** | **2.2%** |
| **Utilities:** | | | | |
| 50 Telephone & Answering Services | 266,500 | 247,000 | 19,500 | 7.9% |
| 51 Water,Garbage,Irrigation&Other | 79,000 | 75,000 | 4,000 | 5.3% |
| **Utilities Total** | **345,500** | **322,000** | **23,500** | **7.3%** |
| **Outside Services:** | | | | |
| 60 Audit Examination - State | 87,000 | 102,500 | (15,500) | (15.1%) |
| 61 Professional Services | 2,177,192 | 1,515,095 | 662,097 | 43.7% |
| **Outside Services Total** | **2,264,192** | **1,617,595** | **646,597** | **40.0%** |
| **Dues and Assessments:** | | | | |
| 70 Civic & Service Organizations | 19,380 | 19,205 | 175 | 0.9% |
| 72 Industry Assoc Assessments | 544,856 | 534,146 | 10,710 | 2.0% |
| 73 Other Assessments | 35,000 | - | 35,000 | n/a |
| **Dues and Assessments Total** | **599,236** | **553,351** | **45,885** | **8.3%** |
| **Taxes:** | | | | |
| 80 Public Utility & Excise Tax | 5,327,000 | 5,477,000 | (150,000) | (2.7%) |
| 81 State Privilege Tax | 2,720,000 | 2,801,000 | (81,000) | (2.9%) |
| 82 City Occupation Taxes | 6,184,000 | 6,411,000 | (227,000) | (3.5%) |
| **Taxes Total** | **14,231,000** | **14,689,000** | **(458,000)** | **(3.1%)** |
| **Other Employee Costs:** | | | | |
| 104 Other Employee Costs | 216,694 | 184,694 | 32,000 | 17.3% |
| **Other Employee Costs Total** | **216,694** | **184,694** | **32,000** | **17.3%** |
| **Energy Resources:** | | | | |
| 112 Residential Conservation Exp | 621,000 | 512,765 | 108,235 | 21.1% |
| 113 Commercial Conservation Exp | 334,000 | 537,293 | (203,293) | (37.8%) |
| 114 Industrial Conservation Exp | 486,000 | 726,668 | (240,668) | (33.1%) |
| 115 Agriculture Conservation Exp | 104,000 | 67,002 | 36,998 | 55.2% |
| 117 Appliance Efficiency Program | 19,000 | - | 19,000 | n/a |
| 118 Low Income Conservation | 250,000 | 230,000 | 20,000 | 8.7% |
| **Energy Resources Total** | **1,814,000** | **2,073,728** | **(259,728)** | **(12.5%)** |

# Comparative Budget by Activity Code
## Public Utility District No. 1 of Benton County
## 2021 Budget

| | | 2021 Budget | 2020 Original Budget | Increase/ (Decrease) | % Change |
|---|---|---|---|---|---|
| **Public Information:** | | | | | |
| 119 | Public Information Expenses | 303,000 | 294,100 | 8,900 | 3.0% |
| | **Public Information Total** | **303,000** | **294,100** | **8,900** | **3.0%** |
| **Purchased Electric Plant & Equip:** | | | | | |
| 120 | Substation Xfrs & Regulators | - | 583,051 | (583,051) | n/a |
| 121 | Substation Equip & Materials | 807,535 | 1,288,633 | (481,098) | (37.3%) |
| 122 | Line Devices | 303,236 | 392,593 | (89,357) | (22.8%) |
| 123 | Transformers & Related Items | 1,200,000 | 1,200,000 | - | 0.0% |
| 124 | Meters & Related Items | 200,000 | 200,000 | - | 0.0% |
| 125 | Land & Land Rights - Electric | 328,864 | 321,510 | 7,354 | 2.3% |
| 127 | SCADA Communications Equipment | 80,252 | 113,500 | (33,248) | (29.3%) |
| 128 | SCADA Substation Equipment | 30,000 | 30,000 | - | 0.0% |
| | **Purchased Electric Plant and Equip Total** | **2,949,887** | **4,129,287** | **(1,179,400)** | **(28.6%)** |
| **Purchased General Plant & Equip:** | | | | | |
| 131 | Structures & Improvements | 498,000 | 139,000 | 359,000 | >200% |
| 132 | Office Equipment | 7,000 | 7,000 | - | 0.0% |
| 133 | Transportation Equipment | 950,000 | 380,000 | 570,000 | 150.0% |
| 134 | Tools, Shop & Stores Equipment | 247,100 | 19,900 | 227,200 | >200% |
| 135 | Laboratory & Test Equipment | 118,755 | 55,000 | 63,755 | 115.9% |
| 136 | Communication Equipment | 155,000 | 190,000 | (35,000) | (18.4%) |
| 137 | Capitalized Computer Software | 273,000 | 97,000 | 176,000 | 181.4% |
| 138 | Computer Equipment | 805,000 | 647,500 | 157,500 | 24.3% |
| | **Purchased General Plant & Equip Total** | **3,053,855** | **1,535,400** | **1,518,455** | **98.9%** |
| **Debt Service:** | | | | | |
| 150 | Principal | 3,115,000 | 3,940,000 | (825,000) | (20.9%) |
| 151 | Interest | 2,073,130 | 1,815,464 | 257,666 | 14.2% |
| | **Debt Service Total** | **5,188,130** | **5,755,464** | **(567,334)** | **(9.9%)** |
| **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) | 10,172,186 | 10,110,642 | 61,544 | 0.6% |
| | Transportation Equipment - Allocation | 296,000 | 296,417 | (417) | (0.1%) |
| | **Depreciation Total** | **10,468,186** | **10,407,059** | **61,127** | **0.6%** |
| | **Grand Total** | **$183,301,338** | **$178,940,383** | **$4,360,955** | **2.4%** |

## Comparative Broadband Budget
### Public Utility District No. 1 of Benton County
### 2021 Budget

| | 2021 Budget [1] | 2020 Original Budget | Increase/ (Decrease) | % Change |
|---|---|---|---|---|
| **Revenue** | $2,921,407 | $2,638,253 | $283,154 | 10.7% |
| **Operating Expenses** | (1,166,295) | (1,071,293) | (95,002) | 8.9% |
| **Net Income (Loss)** | **1,755,112** | **1,566,960** | **188,152** | **12.0%** |
| | | | | |
| **Broadband Capital:** | | | | |
| Base Capital Expenditures | 1,175,034 | 1,285,278 | (110,244) | (8.6%) |
| Small Cell | 652,000 | 815,850 | (163,850) | (20.1%) |
| Capital Contributions | (58,800) | (73,500) | 14,700 | (20.0%) |
| **Net Capital Expenditures** | **1,768,234** | **2,027,628** | **(259,394)** | **(12.8%)** |
| | | | | |
| **Net Cash from / (to) Broadband** | **($13,122)** | **($460,668)** | **$447,546** | **(97.2%)** |

| | Future 5 Years (2021-2025)[1] | Previous 5 Years (2016-2020) |
|---|---|---|
| Five Year Rolling Net Cash Test[2] | $3,136,035 | $721,544 |

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
#### 2021 Budget

| | 2021 Budget | 2020 Original Budget | Increase/ (Decrease) | % Change |
|---|---|---|---|---|
| Retail Power Sales | $133,063,984 | $137,081,522 | ($4,017,538) | (2.9%) |
| Wholesale Power Sales | 23,427,727 | 20,418,637 | 3,009,090 | 14.7% |
| Broadband Revenues | 2,921,407 | 2,638,253 | 283,154 | 10.7% |
| Interest Income and Other | 726,070 | 1,376,070 | (650,000) | (47.2%) |
| Other Electric Revenue | 1,335,720 | 1,443,700 | (107,980) | (7.5%) |
| Joint Use Cost Share | 700,000 | 700,000 | - | 0.0% |
| Capital Contributions: | | | | |
| Electric Facilities | 2,392,726 | 1,728,275 | 664,451 | 38.4% |
| Broadband Facilities | 58,800 | 73,500 | (14,700) | (20.0%) |
| **Total Revenue** | **$164,626,434** | **$165,459,957** | **($833,523)** | **(0.5%)** |

**Comparative Revenues**

**Public Utility District No. 1 of Benton County**

**2021 Budget**

| | 2021 Budget | 2020 Original Budget | Increase/ (Decrease) | % Change |
|---|---|---|---|---|
| **Finance and Customer Service** | | | | |
| **Finance** | | | | |
| 515 Interest Income | $350,000 | $1,000,000 | ($650,000) | (65.0%) |
| 151 BAB's Subsidy | 376,070 | 376,070 | - | 0.0% |
| 560 Insurance/Claims Reimbursements | 100,000 | 100,000 | - | 0.0% |
| Total Finance | 826,070 | 1,476,070 | (650,000) | (44.0%) |
| **Customer Service** | | | | |
| 530 Property Rental Revenue | | | | |
| Auditorium Rental | 10,000 | 10,000 | - | 0.0% |
| 545 Other Electric Revenue | | | | |
| Customer Fees and late charges | 500,000 | 500,000 | - | 0.0% |
| Total Customer Service | 510,000 | 510,000 | - | 0.0% |
| **Total Finance and Customer Service** | **1,336,070** | **1,986,070** | **(650,000)** | **(32.7%)** |
| **Engineering** | | | | |
| 523 Pole Contact Revenue | | | | |
| Pole Contact Fees | 440,000 | 440,000 | - | 0.0% |
| 525 Capital Contributions | | | | |
| Angus Franklin Transmission | 21,775 | 21,775 | - | 0.0% |
| ENW Nine Canyon Harmonic Analysis | | - | - | n/a |
| Joint Use Deficiency Correction CAIC | 31,250 | 62,500 | (31,250) | (50.0%) |
| Teague Farms Sunheaven #1 Substation Upgrades | | - | - | n/a |
| Ridgeline Under Pass | 691,300 | - | 691,300 | n/a |
| DNR Teague Farms Booster Station | | - | - | n/a |
| Misc. Customer Fees (Primary, etc.) | 1,648,401 | 1,644,000 | 4,401 | 0.3% |
| 545 Other Electric Revenue | 700,000 | 700,000 | - | 0.0% |
| **Total Engineering** | **3,532,726** | **2,868,275** | **664,451** | **23.2%** |
| **Power Management** | | | | |
| 505 Wholesale Power Sales Revenue | | | | |
| Slice Power Sales for Resale | 9,289,120 | 6,881,327 | 2,407,793 | 35.0% |
| Fredrickson Power Sales for Resale | 12,616,837 | 11,667,250 | 949,587 | 8.1% |
| Fredrickson Gas Sales for Resale | 621,770 | 970,060 | (348,290) | (35.9%) |
| 510 Wholesale Transmission Sales Revenue | 900,000 | 900,000 | - | 0.0% |
| **Total Power Management** | **23,427,727** | **20,418,637** | **3,009,090** | **14.7%** |
| **Broadband** | | | | |
| 550 Products and Services Revenue | | | | |
| Ethernet Revenue | 1,790,107 | 1,555,953 | 234,154 | 15.0% |
| TDM Revenue | 36,000 | 36,000 | - | 0.0% |
| Wireless Revenue | 42,300 | 42,300 | - | 0.0% |
| Internet Transport Revenue | 54,000 | 54,000 | - | 0.0% |
| Access Internet Revenue | 349,000 | 300,000 | 49,000 | 16.3% |
| Broadband Revenue-Other (Incl. Fiber Leases) | 650,000 | 650,000 | - | 0.0% |
| 525 Capital Contributions | | | | |
| Advanced Wireless/Small Cell | 58,800 | 73,500 | (14,700) | (20.0%) |
| **Total Broadband** | **2,980,207** | **2,711,753** | **268,454** | **9.9%** |
| **Operations** | | | | |
| **Supt. of Transmission & Distribution** | | | | |
| 550 Products and Services Revenue | | | | |
| Pre-Notifier - Tree Trimming | 52,120 | 59,000 | (6,880) | (11.7%) |
| Safety Coordinator | - | 109,000 | (109,000) | n/a |

**Comparative Revenues**

**Public Utility District No. 1 of Benton County**

**2021 Budget**

| | 2021 Budget | 2020 Original Budget | Increase/ (Decrease) | % Change |
|---|---|---|---|---|
| Total Supt. of Transmission & Distribution | 52,120 | 168,000 | (115,880) | (69.0%) |
| **Supt. of Operations** | | | | |
| 535 Microwave Site Rental | 67,700 | 62,700 | 5,000 | 8.0% |
| Rattlesnake Site Rental | 51,900 | 49,000 | 2,900 | 5.9% |
| 545 Other Electric Revenue | | | | |
| Windfarm Maintenance | 114,000 | 114,000 | - | 0.0% |
| Total Supt. of Operations | 233,600 | 225,700 | 7,900 | 3.5% |
| **Total Operations** | **285,720** | **393,700** | **(107,980)** | **(27.4%)** |
| **Non-Departmental** | | | | |
| 501 Retail Energy Sales Total | 127,049,130 | 130,847,156 | (3,798,026) | (2.9%) |
| 503 Bad Debt Expense | (249,146) | (256,634) | 7,488 | (2.9%) |
| 502 City Occupation Taxes Collected | 6,184,000 | 6,411,000 | (227,000) | (3.5%) |
| 520 Temporary Service Revenue | 80,000 | 80,000 | - | 0.0% |
| **Total Non-Departmental** | **133,063,984** | **137,081,522** | **(4,017,538)** | **(2.9%)** |
| **Grand Total Revenue** | **$164,626,434** | **$165,459,957** | **($833,523)** | **(0.5%)** |

# Labor Staffing

**Tab 5**

# Public Utility District No. 1 of Benton County
## 2021 Labor & Benefits Budget

| District Labor | 2021 Budget | 2020 Original Budget | Increase (Decrease) | % Change |
|---|---|---|---|---|
| Regular Labor - Activity 11 | $14,899,809 | $14,538,796 | $361,013 | 2.5% |
| Overtime Labor - Activity 10 | 771,322 | 745,095 | 26,227 | 3.5% |
| ***Total Labor*** | **$15,671,131** | **$15,283,891** | **$387,240** | **2.5%** |
| | | | | |
| **District Labor Taxes & Benefits** | | | | |
| Payroll Taxes - Activity 88 | $1,182,365 | $1,148,191 | $34,174 | 3.0% |
| Employee Benefits - Activity 101 | 5,361,678 | 5,672,155 | (310,477) | (5.5%) |
| ***Total Labor Taxes & Benefits*** | **$6,544,044** | **$6,820,346** | **($276,302)** | **(4.1%)** |

| District Staffing | 2021 Budget | 2020 Original Budget | Increase (Decrease) | % Change |
|---|---|---|---|---|
| Full Time Equivalent Positions (FTEs) | 155.00 | 155.00 | - | 0.0% |

# Public Utility District No. 1 of Benton County
## 2021 Staffing Plan

***Full Time Equivalent Positions (FTEs)***

| Directorate | 2021 Budget | 2020 Original Budget | Increase/ (Decrease) |
|---|---|---|---|
| Executive / Human Resources / Communications & Government | 10.00 | 10.00 | 0.00 |
| Finance & Customer Service | 36.25 | 38.25 | (2.00) |
| Engineering | 16.25 | 16.25 | 0.00 |
| Power Management | 11.00 | 10.00 | 1.00 |
| Operations | 63.50 | 63.50 | 0.00 |
| IT | 18.00 | 17.00 | 1.00 |
| **Authorized District Positions** | **155.00** | **155.00** | **0.00** |
| Less: FTEs utilized by other local utilities - Vegetation Management | (0.50) | (1.10) | 0.60 |
| **District Adjusted FTEs** | **154.50** | **153.90** | **0.60** |

| | |
|---|---|
| **Change in FTEs** | **0.60** |
| **Executive / Human Resources / Communications & Government** | **0.00** |
| **Dept. 1 - General Manager** | |
| Add - Director of Executive Administration | 1.00 |
| **Dept. 2 - Human Resources** | |
| Remove - HR Generalist III (currently vacant) | (1.00) |
| **Finance & Customer Service** | **(2.00)** |
| **Dept. 42 - Prosser** | |
| Remove - Customer Service Representative - LA (currently vacant) | (1.00) |
| **Dept. 44 - Customer Service** | |
| Remove - Director Customer Programs & Service (currently vacant) | (1.00) |
| **Engineering** | **0.00** |
| **Dept. 21 - Engineering Directorate** | |
| Remove - Sr. Director of Engineering & Power (currently vacant) | (1.00) |
| **Dept. 22 - Customer Engineering** | |
| Add - Engineering Technician (limited assignment) | 1.00 |
| **Power Management** | **1.00** |
| **Dept. 45 - Energy Programs** | |
| Remove - Energy Programs Analyst I (currently vacant) | (1.00) |
| Add - Energy Efficiency Advisor (retirement overlap) | 1.00 |
| **Dept. 51 - Power Management** | |
| Add - Power & Energy Programs Analyst II | 1.00 |
| **Operations** | **0.00** |
| **Dept. 31 - Ops. Directorate** | |
| Remove - Utility Safety Coordinator II - Vacancy of shared position filled by Benton REA | (1.00) |
| **Dept. 32 - Superintendent T&D** | |
| Add - Pre Apprentice Lineman (apprentice inadvertently removed from previous budget) | 1.00 |
| **IT** | **1.00** |
| **Dept. 18 - Information Systems** | |
| Add - Business Intelligence Analyst | 1.00 |
| **FTEs utilized by other local utilities** | **0.60** |
| Remove - Utility Safety Coordinator II - Vacancy of shared position filled by Benton REA | 0.60 |

## Public Utility District No. 1 of Benton County
### 2021 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 | 2021 Budget | 2020 Original Budget | Increase/ (Decrease) | Notes |
|---|---|---|---|---|
| Labor charged to Expense | $10,007,094 | $9,763,577 | $243,517 | |
| Labor charged to Capital | 2,260,773 | 2,177,810 | 82,963 | |
| Labor charged to Warehouse & Equipment Maintenance | 534,068 | 550,080 | (16,012) | |
| *Total Productive Labor* | 12,801,935 | 12,491,467 | 310,468 | |
| Paid Leave - Includes Holidays and Personal Leave | $2,097,874 | $2,047,330 | $50,544 | |
| ***Total Regular Labor*** | **$14,899,809** | **$14,538,797** | **$361,012** | |
| **Benefits/Taxes** | | | | |
| Social Security | $955,134 | $926,574 | $28,560 | |
| Medicare | 227,231 | 221,616 | 5,615 | |
| WA State Sick Leave | - | 22,396 | (22,396) | The District chose to enter into a volunteer option for the WA State Sick Leave that took effect on 7/1/20. |
| State Industrial | 131,065 | 141,836 | (10,771) | This represents 80% of the employer portion of the total L&I charges with a 3% increase assumption. The District's experience rating is contributing to reduced premiums. |
| Unemployment | 13,000 | 12,000 | 1,000 | The District does not pay unemployment tax but instead reimburses the State for benefits paid to former employees. |
| PERS | 1,762,752 | 1,909,027 | (146,275) | 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 contributing which is dependent on the employee's participation in a wellness program. As of 9/1/20, the employer rate for PERS was set at 12.97%. The 2021 projected rate is 10.25% which is projected to take effect on July 1, 2020. |
| Deferred Compensation | 430,562 | 422,052 | 8,510 | |
| VEBA Contribution | 360,000 | 360,000 | - | |
| Medical Insurance | 2,196,543 | 2,337,894 | (141,351) | The 2021 budget assumes no increase for medical, dental and vision insurance on 1/1/21. A shift in employee enrollment from the PPO plan (80/20) to the CDHP plan (high deductible) has resulted in a savings. |
| Dental Insurance | 205,372 | 205,250 | 122 | |
| Vision Insurance | 36,812 | 36,791 | 21 | |
| Life Insurance | 72,573 | 71,909 | 664 | |
| STD Admin Fee | 3,000 | 3,000 | - | |
| *Total Benefits/Taxes* | $6,394,044 | $6,670,345 | ($276,301) | |
| **Leave** | | | | |
| Change PL Liability | $150,000 | $150,000 | $0 | |
| Paid Time Off | 2,097,874 | 2,047,330 | 50,544 | |
| *Leave Subtotal* | $2,247,874 | $2,197,330 | $50,544 | |
| ***Total Benefits/Taxes and Leave*** | **$8,641,918** | **$8,867,675** | **($225,757)** | |

| ***Allocation Rate - Regular and Overtime*** | |
|---|---|
| Total Regular Benefits/Taxes and Leave | $8,641,918 |
| Total Regular Productive Labor | 12,801,935 |
| **Allocation Rate - Regular Time** | **67.50%** |

# Budget by Directorate

**Tab 6**

**Revenue and Expense Summary by Department**
**Public Utility District No. 1 of Benton County**
**2021 Budget**

| | 2021 Budget | 2020 Original Budget | Increase/ (Decrease) | % Change |
|---|---|---|---|---|
| **REVENUE** | | | | |
| *Finance and Customer Service* | $1,610,000 | $1,986,070 | ($376,070) | (18.9%) |
| *Broadband* | 2,980,207 | 2,711,753 | 268,454 | 9.9% |
| *Engineering* | 3,532,726 | 2,868,275 | 664,451 | 23.2% |
| *Power Management* | 23,427,727 | 20,418,637 | 3,009,090 | 14.7% |
| *Operations* | 285,720 | 393,700 | (107,980) | (27.4%) |
| *Non-Departmental* | 133,063,984 | 137,081,522 | (4,017,538) | (2.9%) |
| **Total Revenue** | **$164,900,364** | **$165,459,957** | **($559,593)** | **(0.3%)** |
| | | | | |
| **EXPENSES** | | | | |
| *Executive Administration* | $2,836,324 | $2,678,091 | $158,233 | 5.9% |
| *Finance & Customer Service* | 4,503,095 | 4,458,655 | 44,440 | 1.0% |
| *Information Technology* | 5,389,555 | 4,362,082 | 1,027,473 | 23.6% |
| *Broadband* | 2,684,740 | 3,098,199 | (413,459) | (13.3%) |
| *Engineering* | 14,402,070 | 12,371,461 | 2,030,609 | 16.4% |
| *Power Management* | 104,307,794 | 103,817,822 | 489,972 | 0.5% |
| *Operations* | 12,631,400 | 11,277,205 | 1,354,195 | 12.0% |
| *Non-Departmental* | 35,846,360 | 36,876,868 | (1,030,508) | (2.8%) |
| **Total Expenses** | **$182,601,338** | **$178,940,383** | **$3,660,955** | **2.0%** |

# Executive

**Tab 6**

**PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY**
**2021 Budget**
**Summary of Expense by Directorate**

## Executive Administration

| Department(s) | | Totals |
|---|---|---|
| 01 | General Manager, Commission | 1,905,369 |
| 02 | Human Resources | 405,440 |
| 12 | Communications & Government | 525,515 |
| **Grand Total Expenses - Executive Administration** | | $2,836,324 |

## Directorate Budget by Department and Activity
## 2021 Budget Compared to 2020 Original Budget

| Directorate | Executive |
|---|---|

| Department | Activity | 2021 Budget | 2020 Original Budget | Increase / (Decrease) | % Increase / (Decrease) |
|---|---|---|---|---|---|
| 1 - General Manager, Commission | 11 - All Other District Labor | $1,233,979 | $797,244 | $436,735 | 54.8% |
| | 33 - Office Supplies & Expenses | 11,200 | 17,200 | (6,000) | (34.9%) |
| | 42 - Business Expense & Travel | 46,200 | 70,500 | (24,300) | (34.5%) |
| | 43 - Training Expense & Travel | 11,300 | 11,500 | (200) | (1.7%) |
| | 44 - Other General Expenses | 30,000 | 30,000 | - | 0.0% |
| | 45 - Subscriptions & Publications | 9,036 | 9,306 | (270) | (2.9%) |
| | 61 - Professional Services | 115,000 | 85,000 | 30,000 | 35.3% |
| | 72 - Industry Assoc Assessments | 448,654 | 442,212 | 6,442 | 1.5% |
| **1 - General Manager, Commission Total** | | **1,905,369** | **1,462,962** | **442,407** | **30.2%** |
| 2 - Human Resources | 11 - All Other District Labor | - | 438,779 | (438,779) | (100.0%) |
| | 33 - Office Supplies & Expenses | - | 1,500 | (1,500) | (100.0%) |
| | 42 - Business Expense & Travel | 10,500 | 16,000 | (5,500) | (34.4%) |
| | 43 - Training Expense & Travel | 3,800 | 6,000 | (2,200) | (36.7%) |
| | 44 - Other General Expenses | 40,500 | 56,200 | (15,700) | (27.9%) |
| | 45 - Subscriptions & Publications | 5,800 | 6,500 | (700) | (10.8%) |
| | 61 - Professional Services | 225,500 | 95,800 | 129,700 | 135.4% |
| | 72 - Industry Assoc Assessments | 37,340 | 36,550 | 790 | 2.2% |
| | 104 - Other Employee Costs | 82,000 | 50,500 | 31,500 | 62.4% |
| **2 - Human Resources Total** | | **405,440** | **707,829** | **(302,389)** | **(42.7%)** |
| 12 - Communications & Government | 33 - Office Supplies & Expenses | - | 400 | (400) | (100.0%) |
| | 42 - Business Expense & Travel | 14,900 | 26,000 | (11,100) | (42.7%) |
| | 45 - Subscriptions & Publications | 800 | 800 | - | 0.0% |
| | 61 - Professional Services | 154,000 | 166,000 | (12,000) | (7.2%) |
| | 70 - Civic & Service Organizations | 16,265 | 15,950 | 315 | 2.0% |
| | 72 - Industry Assoc Assessments | 4,050 | 6,550 | (2,500) | (38.2%) |
| | 73 - Other Assessments | 35,000 | - | 35,000 | N/A |
| | 119 - Public Information Expenses | 300,500 | 291,600 | 8,900 | 3.1% |
| **12 - Communications & Government Total** | | **525,515** | **507,300** | **18,215** | **3.6%** |
| **Grand Total** | | **$2,836,324** | **$2,678,091** | **$158,233** | **5.9%** |

## *Department* 01 General Manager, Commission

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **011** | **All Other District Labor** | | | **$1,233,979** |
| | Labor - Admin General | 920.00 | | $949,544 |
| | Labor - Customer Accounting | 903.00 | | $111,424 |
| | Labor - Distribution | 588.00 | | $254 |
| | Labor - Leave | 184.30 | | $172,757 |
| **033** | **Office Supplies & Expenses** | | | **$11,200** |
| | Misc Office Supplies | 921.00 | | $5,000 |
| | Off-Site Storage of Permanent Records | 921.00 | | $1,200 |
| | Records Mgmt - Shredding Services | 921.00 | | $5,000 |
| **042** | **Business Expense and Travel** | | | **$46,200** |
| | Commission Travel | 930.20 | | $29,300 |
| | General Manager | 921.00 | | $14,300 |
| | RM Software Users Group (Records Administrator) | 921.00 | | $1,300 |
| | WPUDA Annual Assistant's Meeting (2) (Executive Assistant) | 921.00 | | $700 |
| | WPUDA Records Roundtable (2) (Records Administrator) | 921.00 | | $600 |
| **043** | **Training Expense & Travel** | | | **$11,300** |
| | AIIM/ARMA Nat'l Conference and Other Local/In-State Trainings (Program Administrator) | 921.00 | | $2,600 |
| | Misc Training (Local seminars/Trainings) | 921.00 | | $1,900 |
| | NAGARA - National Association of Government Archives and Records Administrators (1) | 921.00 | | $2,600 |
| | NW Clerks Institute, Professional Development II (Tacoma, WA) | 921.00 | | $1,600 |
| | WA Municipal Clerks Association Conference (Clerk) | 921.00 | | $700 |
| | WAPRO Training (3) | 921.00 | | $1,900 |
| **044** | **Other General Expenses** | | | **$30,000** |
| | Election Costs (Annual Fee) | 930.20 | | $30,000 |
| **045** | **Subscriptions & Publications** | | | **$9,036** |
| | Clearing Up (Newsdata) | 930.20 | | $8,300 |
| | Columbia Basin Bulletin | 930.20 | | $96 |
| | Wall Street Journal (2) - Commissioners & General Manager | 930.20 | | $640 |
| **061** | **Professional Services** | | | **$115,000** |
| | Consultant - Security | 930.20 | | $30,000 |
| | Contract Attorney | 930.20 | | $75,000 |

## *Department* 01 General Manager, Commission

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| | Misc. Legal (Gordon Thomas Honeywell) | 930.20 | | $10,000 |
| **072** | **Industry Association Assessment** | | | **$448,654** |
| | APPA | 930.20 | | $49,869 |
| | ARMA Membership - Includes Local Chapter (2) | 921.00 | | $400 |
| | Benton/Franklin Council of Governments | 930.20 | | $7,078 |
| | IEEE (General Manager) | 921.00 | | $235 |
| | International Institute of Municipal Clerks (Clerk) | 921.00 | | $200 |
| | NAGARA Membership - Records Program Administrator | 921.00 | | $89 |
| | Notary (Clerk) | 921.00 | | $45 |
| | NW River Partners | 930.20 | | $46,575 |
| | NWPPA | 930.20 | | $30,000 |
| | Pacific Northwest Waterways (PNWA) | 930.20 | | $3,400 |
| | PNUCC | 557.00 | | $10,659 |
| | PNUCC Columbia River Treaty Dues | 557.00 | | $3,000 |
| | Professional Engineers License - General Manager | 921.00 | | $116 |
| | Public Generating Pool (PGP) | 557.00 | | $70,000 |
| | Public Power Council (PPC) | 557.00 | | $62,375 |
| | Rotary Club of Tri Cities Sunrise (Commissioner) | 930.20 | | $900 |
| | SHRM (2) | 921.00 | | $438 |
| | Soroptimist International of Three Rivers (Commissioner) | 930.20 | | $150 |
| | TRIDEC | 930.20 | | $20,000 |
| | WA Municipal Clerk Association (Clerk) | 921.00 | | $75 |
| | WA Public Records Officer Association (3) | 921.00 | | $75 |
| | WAPRO Certified Public Records Officer Designation (Program Administrator) | 921.00 | | $175 |
| | WPUDA | 930.20 | | $142,800 |
| **TOTAL EXPENSE** | **General Manager, Commission** | | | **$1,905,369** |

***Department*** 02 Human Resources

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **042** | **Business Expense and Travel** | | | **$10,500** |
| | CWPU Meetings | 921.00 | | $700 |
| | Executive - Leadership Planning Workshop | 921.00 | | $300 |
| | HR - Affiliate Conferences | 921.00 | | $3,900 |
| | HR - AWC Labor Relations Institute | 921.00 | | $300 |
| | HR - Business Travel | 921.00 | | $2,000 |
| | HR - LERG Meetings | 921.00 | | $3,300 |
| **043** | **Training Expense & Travel** | | | **$3,800** |
| | District - Misc. Developmental Training | 921.00 | | $1,600 |
| | District Leadership Training | 921.00 | | $300 |
| | HR - Misc. Training | 921.00 | | $1,900 |
| **044** | **Other General Expenses** | | | **$40,500** |
| | Community Outreach | 921.00 | | $500 |
| | Driver Abstracts/Clearinghouse Queries | 921.00 | | $2,000 |
| | Employee Recognition & Programs | 921.00 | | $7,000 |
| | General Expenses - Misc. | 921.00 | | $500 |
| | Recruitment - Advertising | 921.00 | | $20,000 |
| | Recruitment - Background Screening | 921.00 | | $2,000 |
| | Recruitment - Interview/Travel Expenses | 921.00 | | $4,000 |
| | Recruitment - Physicals & DOT Screens | 921.00 | | $3,000 |
| | Trucking Consortia - Collections | 921.00 | | $1,500 |
| **045** | **Subscriptions & Publications** | | | **$5,800** |
| | Labor Law Poster Updates | 921.00 | | $300 |
| | Salary Survey - Misc. | 921.00 | | $500 |
| | Salary Surveys (Milliman) | 921.00 | | $4,500 |
| | Subscription & Publications | 921.00 | | $500 |
| **061** | **Professional Services** | | | **$225,500** |
| | Consultant - Affirmative Action | 921.00 | | $1,500 |
| | Consultant - Policy Development | 921.00 | | $2,000 |
| | District - Employment Law Training | 921.00 | | $5,000 |
| | District - IBM Tests & Administration | 921.00 | | $5,000 |
| | District - Respectful Workforce Training | 921.00 | | $11,500 |
| | District - Safety Training | 921.00 | | $5,000 |

***Department*** 02 Human Resources

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| | District - Utility IQ Training | 921.00 | | $150,000 |
| | Engagement Survey | 921.00 | | $8,500 |
| | Leadership Training Series | 921.00 | | $26,000 |
| | Legal Services | 921.00 | | $10,000 |
| | Trucking Consortium (Service Fee & Training) | 923.00 | | $1,000 |
| **072** | **Industry Association Assessment** | | | **$37,340** |
| | CWPU Membership Assessments | 921.00 | | $35,000 |
| | District - Assoc. of WA Cities Membership | 921.00 | | $500 |
| | District - NWPPA Labor & Employee Relations Membership | 921.00 | | $650 |
| | HR Staff - SHRM Professional Memberships (3) | 921.00 | | $660 |
| | HR Staff - World at Work Memberships (2) | 921.00 | | $530 |
| **104** | **Other Employee Costs** | | | **$82,000** |
| | Assessments - ADA, Ergonomic & Fitness For Duty | 926.10 | | $2,000 |
| | Assessments - CDL Medical Certifications | 926.10 | | $3,000 |
| | COBRA Administration | 926.10 | | $2,500 |
| | ComPsych EAP Administration | 926.10 | | $2,500 |
| | CWPU Wellness Program/Catapult | 926.10 | | $15,000 |
| | Employee Assistance Program (EAP) Mediation | 926.10 | | $500 |
| | Flex 125 Plan Administration | 926.10 | | $2,500 |
| | HealthInvest Administration Fee | 926.10 | | $1,500 |
| | Local Wellness Activities & Events | 926.10 | | $13,500 |
| | Professional Certifications | 926.10 | | $5,000 |
| | Safety Program - Supplies & Administration | 926.10 | | $4,000 |
| | Tuition Reimbursement | 926.10 | | $30,000 |
| **TOTAL EXPENSE Human Resources** | | | | **$405,440** |

***Department*** 12 Communications & Government

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **042** | **Business Expense and Travel** | | | **$14,900** |
| | Adobe Max, NWPPA, WPUDA (Communications Specialist) | 921.00 | | $5,500 |
| | APPA, NWPPA, Olympia, PPC, WPUDA (Manager) | 921.00 | | $9,400 |
| **045** | **Subscriptions & Publications** | | | **$800** |
| | Seattle Times, Shutterstock, Survey Monkey, Tri-City Herald | 921.00 | | $800 |
| **061** | **Professional Services** | | | **$154,000** |
| | Customer Survey | 910.00 | | $53,000 |
| | Governmental Relations | 910.00 | | $66,000 |
| | 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 |
| | Tri-Cities Visitor & Convention Bureau | 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, Communications Specialist) | 910.00 | | $1,000 |
| **073** | **Other Assessments** | | | **$35,000** |
| | NW River Partners - Media Campaign | 930.20 | | $35,000 |
| **119** | **Public Information Expenses** | | | **$300,500** |
| | Advertising (Print & Online) | 910.00 | | $30,500 |
| | Printing (Newsletter, Brochures, Inserts, Direct Mail, etc.) | 910.00 | | $71,600 |
| | Public Education/Community Outreach | 910.00 | | $54,400 |
| | TV/Radio | 910.00 | | $144,000 |
| **TOTAL EXPENSE** | **Communications & Government** | | | **$525,515** |

# Finance & Customer Service

**Tab 6**

**PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY**
**2021 Budget**
**Summary of Expense by Directorate**

## Finance & Customer Service

| Department(s) | | Totals |
|---|---|---|
| 11 | Finance & Business Services | 791,573 |
| 14 | General Accounting | 589,480 |
| 16 | Risk Management & Treasury | 1,176,430 |
| 17 | Contracts & Purchasing | 19,795 |
| 42 | Customer Service - Prosser | 378,456 |
| 44 | Customer Service | 1,547,361 |
| **Grand Total Expenses - Finance & Customer Service** | | $4,503,095 |

## Directorate Budget by Department and Activity
## 2021 Budget Compared to 2020 Budget

| Directorate | Finance & Customer Services |
|---|---|

| Department | Activity | 2021 Budget | 2020 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 | 779,266 | 741,287 | 37,979 | 5.1% |
| | 33 - Office Supplies & Expenses | 5,000 | 5,000 | - | 0.0% |
| | 42 - Business Expense & Travel | 1,300 | 2,000 | (700) | (35.0%) |
| | 43 - Training Expense & Travel | 2,600 | 4,000 | (1,400) | (35.0%) |
| | 45 - Subscriptions & Publications | 200 | 200 | - | 0.0% |
| | 72 - Industry Assoc Assessments | 1,207 | 1,207 | - | 0.0% |
| **11 - Finance & Business Services Total** | | **791,573** | **755,694** | **35,879** | **4.7%** |
| **14 - General Accounting** | 10 - District Overtime Labor | 1,000 | 1,000 | - | 0.0% |
| | 11 - All Other District Labor | 504,160 | 492,091 | 12,069 | 2.5% |
| | 43 - Training Expense & Travel | 3,900 | 6,000 | (2,100) | (35.0%) |
| | 45 - Subscriptions & Publications | 2,305 | 2,305 | - | 0.0% |
| | 60 - Audit Examination - State | 76,500 | 72,500 | 4,000 | 5.5% |
| | 72 - Industry Assoc Assessments | 1,615 | 1,268 | 347 | 27.4% |
| **14 - General Accounting Total** | | **589,480** | **575,164** | **14,316** | **2.5%** |
| **16 - Treasurer** | 34 - Insurance | 643,450 | 584,700 | 58,750 | 10.0% |
| | 41 - Insurance Damages & Other Reim | 10,000 | 10,000 | - | 0.0% |
| | 42 - Business Expense & Travel | 1,300 | 2,000 | (700) | (35.0%) |
| | 43 - Training Expense & Travel | 3,600 | 5,600 | (2,000) | (35.7%) |
| | 45 - Subscriptions & Publications | 500 | 500 | - | 0.0% |
| | 46 - Treasurer Expenses | 485,000 | 451,000 | 34,000 | 7.5% |
| | 61 - Professional Services | 32,500 | 32,500 | - | 0.0% |
| | 72 - Industry Assoc Assessments | 80 | 80 | - | 0.0% |
| **16 - Treasurer Total** | | **1,176,430** | **1,086,380** | **90,050** | **8.3%** |
| **17 - Purchasing** | 33 - Office Supplies & Expenses | 11,000 | 11,000 | - | 0.0% |
| | 42 - Business Expense & Travel | 1,300 | 2,000 | (700) | (35.0%) |
| | 43 - Training Expense & Travel | 4,500 | 7,000 | (2,500) | (35.7%) |
| | 44 - Other General Expenses | 2,565 | 2,565 | - | 0.0% |
| | 72 - Industry Assoc Assessments | 430 | 610 | (180) | (29.5%) |
| **17 - Purchasing Total** | | **19,795** | **23,175** | **(3,380)** | **(14.6%)** |
| **42 - Prosser Branch** | 10 - District Overtime Labor | 5,012 | 5,980 | (968) | (16.2%) |
| | 11 - All Other District Labor | 323,729 | 330,759 | (7,030) | (2.1%) |
| | 30 - Customer Service Expenses | 15,800 | 10,000 | 5,800 | 58.0% |
| | 33 - Office Supplies & Expenses | 3,000 | 3,000 | - | 0.0% |
| | 39 - Maint of Equipment | 1,000 | 1,000 | - | 0.0% |
| | 42 - Business Expense & Travel | 1,300 | 2,000 | (700) | (35.0%) |
| | 43 - Training Expense & Travel | 2,000 | 3,000 | (1,000) | (33.3%) |
| | 51 - Water,Garbage,Irrigation&Other | 19,000 | 15,000 | 4,000 | 26.7% |
| | 70 - Civic & Service Organizations | 3,115 | 3,115 | - | 0.0% |
| | 72 - Industry Assoc Assessments | 4,500 | 4,500 | - | 0.0% |
| **42 - Prosser Branch Total** | | **378,456** | **378,354** | **102** | **0.0%** |
| **44 - Customer Service** | 10 - District Overtime Labor | 20,607 | 21,176 | (569) | (2.7%) |
| | 11 - All Other District Labor | 1,030,390 | 1,154,112 | (123,722) | (10.7%) |
| | 30 - Customer Service Expenses | 436,564 | 397,500 | 39,064 | 9.8% |
| | 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 | 11,000 | (3,800) | (34.5%) |
| | 43 - Training Expense & Travel | 6,500 | 10,000 | (3,500) | (35.0%) |
| | 44 - Other General Expenses | 5,000 | 5,000 | - | 0.0% |
| | 45 - Subscriptions & Publications | 200 | 200 | - | 0.0% |
| | 61 - Professional Services | 5,000 | 5,000 | - | 0.0% |
| | 119 - Public Information Expenses | 2,500 | 2,500 | - | 0.0% |
| | 200 - New Services Expenses | 2,500 | 2,500 | - | 0.0% |
| | 201 - New Product Expenses | 3,500 | 3,500 | - | 0.0% |
| **44 - Customer Service Total** | | **1,547,361** | **1,639,888** | **(92,527)** | **(5.6%)** |
| **Grand Total** | | **$4,503,095** | **$4,458,655** | **$44,440** | **1.0%** |

***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** | | | **$779,266** |
| | Labor - Admin General | 920.00 | | $514,582 |
| | Labor - Customer Accounting | 903.00 | | $25,772 |
| | Labor - Distribution | 588.00 | | $82,510 |
| | Labor - Leave | 184.30 | | $109,097 |
| | Labor - Purchased Power | 557.00 | | $47,305 |
| **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 (Administrative Assistant) | 921.00 | | $1,000 |
| | WPUDA (Director) | 921.00 | | $600 |
| **045** | **Subscriptions & Publications** | | | **$200** |
| | Miscellaneous Publications | 921.00 | | $200 |
| **072** | **Industry Association Assessment** | | | **$1,207** |
| | AICPA (American Institute of CPA's) Membership (Director) | 921.00 | | $285 |
| | 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** | | | | **$791,573** |

## *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** | | | **$504,160** |
| | Labor - Admin General | 920.00 | | $433,578 |
| | Labor - Leave | 184.30 | | $70,582 |
| **043** | **Training Expense & Travel** | | | **$3,900** |
| | Training (Accounting Manager) | 921.00 | | $1,000 |
| | Training (AP & Payroll) | 921.00 | | $500 |
| | Training (Financial Analyst/Specialist) | 921.00 | | $1,400 |
| | WPUDA Finance Meetings | 921.00 | | $1,000 |
| **045** | **Subscriptions & Publications** | | | **$2,305** |
| | APA Basic Guide to Payroll | 921.00 | | $500 |
| | GFOA Fee - CAFR Excellence in Reporting program | 921.00 | | $580 |
| | Governmental GAAP (Various) | 921.00 | | $550 |
| | Keep Up to Date on A/P | 921.00 | | $350 |
| | Keep Up to Date on Payroll | 921.00 | | $325 |
| **060** | **Audit Examination - State** | | | **$76,500** |
| | Financial Statement External Audit | 923.00 | | $57,500 |
| | State Auditor's Office | 923.00 | | $19,000 |
| **072** | **Industry Association Assessment** | | | **$1,615** |
| | AICPA (American Institute of CPAs) (Manager, Financial Analyst) | 921.00 | | $285 |
| | APA (American Payroll Assoc) (Payroll Specialist) | 921.00 | | $260 |
| | CPA License - Wash. State Board of Accountancy (Manager, Financial Analyst) | 921.00 | | $460 |
| | WSCPA (Wash. Society of CPAs) (Manager, Financial Analyst) | 921.00 | | $610 |

**TOTAL EXPENSE General Accounting** **$589,480**

## *Department* 16 Risk Management & Treasury

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **034** | **Insurance** | | | **$643,450** |
| | Crime Policy | 925.00 | | $3,750 |
| | Cyber Security Insurance | 925.00 | | $12,000 |
| | Fiduciary Liability Policy | 925.00 | | $17,000 |
| | Liability, Directors & Officers | 925.00 | | $18,000 |
| | Liability, Excess $65 million, EIM | 925.00 | | $55,000 |
| | Liability, Excess General & Professional, AEGIS | 925.00 | | $167,000 |
| | 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 | | $132,000 |
| | Property, General Assessment | 925.00 | | $80,000 |
| | Railroad | 925.00 | | $3,000 |
| | Special Trips | 925.00 | | $3,700 |
| | 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 (Manager, Analyst) | 921.00 | | $300 |
| **045** | **Subscriptions & Publications** | | | **$500** |
| | Subscription & Publications | 921.00 | | $500 |
| **046** | **Treasurer Expenses** | | | **$485,000** |
| | Bank Service Fees (Bank of America) | 921.00 | | $35,000 |
| | Credit Card Processor Fees (NISC) | 903.00 | | $394,000 |
| | Fiscal Agent Fees (US Bank) | 921.00 | | $1,500 |
| | Investment Custody Fees (US Bank) | 921.00 | | $3,000 |
| | Jack Henry & Associates Processing Fees | 903.00 | | $5,750 |
| | Line of Credit Fee (Bank of America) | 431.00 | | $40,000 |

***Department*** 16 Risk Management & Treasury

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| | NISC Banking Fees (Citi Bank First Data) | 903.00 | | $5,750 |
| **061** | **Professional Services** | | | **$32,500** |
| | 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** | | | **$1,176,430** |

***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, C/P Coordinator) | 921.00 | | $2,000 |
| | ISM Seminar (Local) (Manager, Buyer) | 921.00 | | $300 |
| | L & I Training (Manager, Buyer, C/P 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* 42 Customer Service - Prosser

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **010** | **District Overtime Labor** | | | **$5,012** |
| | Labor - Overtime - Distribution | 588.00 | | $5,012 |
| **011** | **All Other District Labor** | | | **$323,729** |
| | Labor - Admin General | 920.00 | | $2,711 |
| | Labor - Customer Accounting | 903.00 | | $275,696 |
| | Labor - Leave | 184.30 | | $45,322 |
| **030** | **Customer Service Expenditures** | | | **$15,800** |
| | Armored Car Service | 903.00 | | $13,000 |
| | Customer Service Expenditures | 903.00 | | $2,800 |
| **033** | **Office Supplies & Expenses** | | | **$3,000** |
| | Misc Office Supplies | 903.00 | | $3,000 |
| **039** | **Maintenance of Equipment** | | | **$1,000** |
| | Maint of Equipment | 903.00 | | $1,000 |
| **042** | **Business Expense and Travel** | | | **$1,300** |
| | Business Travel & Expense | 903.00 | | $1,300 |
| **043** | **Training Expense & Travel** | | | **$2,000** |
| | CSR Training Off Site | 903.00 | | $2,000 |
| **051** | **Water, Garbage, Irrigation & Other** | | | **$19,000** |
| | Prosser Utilities | 598.10 | | $19,000 |
| **070** | **Civic & Service Organizations** | | | **$3,115** |
| | Benton City Chamber of Commerce | 903.00 | | $300 |
| | Prosser Chamber of Commerce | 903.00 | | $315 |
| | 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 Customer Service - Prosser** | | | | **$378,456** |

## *Department* 44 Customer Service

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **010** | **District Overtime Labor** | | | **$20,607** |
| | Labor - Overtime - Customer Accounting | 903.00 | | $20,607 |
| **011** | **All Other District Labor** | | | **$1,030,390** |
| | Labor - Admin General | 920.00 | | $1,671 |
| | Labor - Customer Accounting | 903.00 | | $884,464 |
| | Labor - Leave | 184.30 | | $144,255 |
| **030** | **Customer Service Expenditures** | | | **$436,564** |
| | Application Processing Fees (Helping Hands/Disabled Disc Programs) | 903.00 | | $9,800 |
| | 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 | | $2,600 |
| | NISC - Messenger Letters, Urgent Notices, LL, Autopay, Budget Plan | 903.00 | | $54,000 |
| | NISC - Print & Mail Services (forms,envelopes, data) | 903.00 | | $294,609 |
| | 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 | | $1,500 |
| **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 | 903.00 | | $1,300 |
| | MIC Meeting (3) | 903.00 | | $4,900 |
| | NISC NW Users Group | 903.00 | | $500 |
| | NWPPA CS Best Practices | 903.00 | | $500 |
| **043** | **Training Expense & Travel** | | | **$6,500** |
| | CSR Training Off Site | 903.00 | | $2,000 |
| | Other Customer Service | 903.00 | | $600 |
| | QA Program | 903.00 | | $3,900 |

***Department*** 44 Customer Service

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **044** | **Other General Expenses** | | | **$5,000** |
| | 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** | | | | **$1,547,361** |

# Information Technology / Broadband

**Tab 6**

**PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY**
**2021 Budget**
**Summary of Expense by Directorate**

# Information Technology (IT)

| Department(s) | | Totals |
|---|---|---|
| 15 | IT Infrastructure | 2,735,301 |
| 18 | IT Applications | 2,654,254 |
| **Grand Total Expenses - Information Technology (IT)** | | $5,389,555 |

## Directorate Budget by Department and Activity
## 2021 Budget Compared to 2020 Budget

| Directorate | Information Technology |
|---|---|

| Department | Activity | 2021 Budget | 2020 Original Budget | Increase / (Decrease) | % Increase / (Decrease) |
|---|---|---|---|---|---|
| **15 - IT Infrastructure** | 10 - District Overtime Labor | $3,500 | $3,500 | $0 | 0.0% |
| | 11 - All Other District Labor | 706,326 | 695,495 | 10,831 | 1.6% |
| | 25 - Maintenance of Software | 320,650 | 273,150 | 47,500 | 17.4% |
| | 26 - Computer Hardware & Equip Exp | 73,500 | 56,500 | 17,000 | 30.1% |
| | 27 - Personal Computer Software | 74,500 | 78,000 | (3,500) | (4.5%) |
| | 28 - Personal Computer O&M Costs | 141,700 | 128,700 | 13,000 | 10.1% |
| | 29 - Personal Computer Supplies&Exp | 9,000 | 9,000 | - | 0.0% |
| | 33 - Office Supplies & Expenses | 10,000 | - | 10,000 | N/A |
| | 42 - Business Expense & Travel | 11,700 | 18,000 | (6,300) | (35.0%) |
| | 43 - Training Expense & Travel | 12,675 | 19,500 | (6,825) | (35.0%) |
| | 45 - Subscriptions & Publications | 250 | 250 | - | 0.0% |
| | 50 - Telephone & Answering Services | 144,500 | 125,000 | 19,500 | 15.6% |
| | 61 - Professional Services | 214,000 | 54,000 | 160,000 | 296.3% |
| | 137 - Capitalized Computer Software | 208,000 | 47,000 | 161,000 | 342.6% |
| | 138 - Computer Equipment | 805,000 | 647,500 | 157,500 | 24.3% |
| **15 - IT Infrastructure Total** | | **2,735,301** | **2,155,595** | **579,706** | **26.9%** |
| **18 - IT Applications** | 11 - All Other District Labor | 1,205,071 | 1,071,137 | 133,934 | 12.5% |
| | 17 - Operation & Maintenance Exp | 68,400 | 68,400 | - | 0.0% |
| | 25 - Maintenance of Software | 842,783 | 786,200 | 56,583 | 7.2% |
| | 26 - Computer Hardware & Equip Exp | 17,500 | 17,500 | - | 0.0% |
| | 27 - Personal Computer Software | 9,700 | 7,500 | 2,200 | 29.3% |
| | 33 - Office Supplies & Expenses | 1,500 | 1,500 | - | 0.0% |
| | 42 - Business Expense & Travel | 19,175 | 27,500 | (8,325) | (30.3%) |
| | 43 - Training Expense & Travel | 10,725 | 16,500 | (5,775) | (35.0%) |
| | 45 - Subscriptions & Publications | 250 | 250 | - | 0.0% |
| | 61 - Professional Services | 406,150 | 152,000 | 254,150 | 167.2% |
| | 72 - Industry Assoc Assessments | 8,000 | 8,000 | - | 0.0% |
| | 137 - Capitalized Computer Software | 65,000 | 50,000 | 15,000 | 30.0% |
| **18 - IT Applications Total** | | **2,654,254** | **2,206,487** | **447,767** | **20.3%** |
| **Grand Total** | | **$5,389,555** | **$4,362,082** | **$1,027,473** | **23.6%** |

**Department** 15 IT Infrastructure

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **010** | **District Overtime Labor** | | | **$3,500** |
| | Labor - Overtime - Admin General | 920.00 | | $3,500 |
| **011** | **All Other District Labor** | | | **$706,326** |
| | Audio Visual Equipment (Commission Room Update) | 391.00 | 24 | $2,537 |
| | Communications Monitors | 391.00 | 25 | $3,012 |
| | C-Series Cisco Blade Server | 391.00 | 219 | $1,450 |
| | Fiber to Substations & Line Devices | 380.00 | 144 | $3,942 |
| | Labor - Admin General | 920.00 | | $402,279 |
| | Labor - Customer Accounting | 903.00 | | $57,468 |
| | Labor - Distribution | 588.00 | | $114,937 |
| | Labor - Leave | 184.30 | | $98,886 |
| | Large Format Scanner | 391.00 | 224 | $1,100 |
| | Load Balancer Eval and Purchase | 391.00 | 32 | $7,500 |
| | Nexus Switch (Prosser) Upgrade | 391.00 | 34 | $2,286 |
| | Physical Security Audit Recommendations Phase 1 | 391.00 | 222 | $8,500 |
| | Structured Cabling | 391.00 | 220 | $1,016 |
| | Video Accelerator | 391.00 | 217 | $471 |
| | Video Accelerator Cards | 391.00 | 213 | $942 |
| **025** | **Maintenance of Software** | | | **$320,650** |
| | Accellion (FTP Software) | 921.00 | | $8,600 |
| | Accellops | 921.00 | | $8,100 |
| | Acronis (Desktop/Server Imaging) | 921.00 | | $2,250 |
| | Archive Social | 921.00 | | $1,800 |
| | Azure ID Badging Software | 921.00 | | $1,000 |
| | Brava Reader | 921.00 | | $500 |
| | Cisco ISE Anyconnect | 921.00 | | $3,000 |
| | Cradlepoint Cloud Mngr | 921.00 | | $1,000 |
| | 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 |
| | Microcall (Phone Call Logging) | 921.00 | | $1,200 |
| | Mobile Device Management | 921.00 | | $3,000 |
| | Nessus (Network Analysis) | 921.00 | | $23,000 |
| | Net App Software Maintenance | 921.00 | | $48,000 |

***Department*** 15 IT Infrastructure

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| | OATI Certificate | 921.00 | | $1,100 |
| | OEL for Existing | 921.00 | | $6,000 |
| | OVM | 921.00 | | $2,200 |
| | Phone Q/A Software | 903.00 | | $3,500 |
| | Power Broker (Desktop Security) | 921.00 | | $1,600 |
| | RSA (Network Authentication) | 921.00 | | $2,000 |
| | Secret Server | 921.00 | | $2,200 |
| | SmartNet (Ironport, Firepower) | 921.00 | | $34,500 |
| | SmartNet (Phone) | 921.00 | | $20,500 |
| | Solar Winds (Network Monitoring) | 921.00 | | $24,000 |
| | Solar Winds (Storage, VM) | 921.00 | | $5,000 |
| | Third Tier Backup Software (Veeam) | 921.00 | | $22,000 |
| | Trackit (Help Desk Ticket Tracker) | 921.00 | | $3,400 |
| | Trend (Antivirus) | 921.00 | | $15,000 |
| | Varonis | 921.00 | | $5,100 |
| | VMWare (Server Virtualization) | 921.00 | | $45,000 |
| | VMWare (VDI) | 921.00 | | $16,500 |
| | Wallboard | 903.00 | | $1,800 |
| **026** | **Computer Hardware & Equip Exp** | | | **$73,500** |
| | Commission Technology | 921.00 | | $7,500 |
| | General PC needs (HD, Mouse, DVD Burner, Cables, etc) | 921.00 | | $5,000 |
| | Printers for Desktops | 921.00 | | $4,000 |
| | Replacement Desktop (8) | 921.00 | | $20,000 |
| | Replacement Laptops (3) | 921.00 | | $20,000 |
| | Replacement Monitors (20) | 921.00 | | $4,000 |
| | Replacement projectors - (Conference Room) | 921.00 | | $3,000 |
| | Tablets - iPads (7) | 588.00 | | $5,000 |
| | Zero Clients (10) | 921.00 | | $5,000 |
| **027** | **Personal Computer Software** | | | **$74,500** |
| | Misc Upgrades and Software | 921.00 | | $7,500 |
| | MSDN (Support Specialist (2), System Administrator) | 921.00 | | $2,000 |
| | Office 365 | 921.00 | | $65,000 |
| **028** | **Personal Computer O&M Costs** | | | **$141,700** |
| | Cisco SmartNets | 921.00 | | $95,000 |
| | MFP Maintenance - Engineering | 588.00 | | $9,000 |

***Department*** 15 IT Infrastructure

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| | MFP Maintenance - Executive | 921.00 | | $1,500 |
| | MFP Maintenance - Finance/CS | 921.00 | | $10,000 |
| | MFP Maintenance - Operations | 588.00 | | $7,000 |
| | MFP Maintenance - Power Mgmt | 921.00 | | $5,000 |
| | MFP Maintenance - Prosser | 921.00 | | $1,000 |
| | 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** | | | **$10,000** |
| | Cisco Phones | 921.00 | | $10,000 |
| **042** | **Business Expense and Travel** | | | **$11,700** |
| | IT Infrastructure Conference (Virtualization, Storage, Support, Network/Security) | 921.00 | | $11,700 |
| **043** | **Training Expense & Travel** | | | **$12,675** |
| | IT Infrastructure Training (Server Administration, Storage, Support, Network/Security) | 921.00 | | $12,675 |
| **045** | **Subscriptions & Publications** | | | **$250** |
| | Subscription & Publications | 921.00 | | $250 |
| **050** | **Telephone & Answering Services** | | | **$144,500** |
| | Aircards - Operations (Cradlepoint) | 588.00 | | $6,500 |

***Department*** 15 IT Infrastructure

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| | 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 | | $54,000 |
| | Verizon Wireless | 921.00 | | $25,500 |
| **061** | **Professional Services** | | | **$214,000** |
| | Consulting for External Network Security Audit | 921.00 | | $35,000 |
| | Datacenter redesign | 391.00 | 269 | $50,000 |
| | Exchange Support | 921.00 | | $5,000 |
| | Infrastructure Support | 921.00 | | $10,000 |
| | Phone System Support | 921.00 | | $10,000 |
| | Physical Security Audit Recommendations Phase 1 | 391.00 | 222 | $100,000 |
| | Structured Cabling | 391.00 | 220 | $4,000 |
| **137** | **Capitalized Computer Software** | | | **$208,000** |
| | SQL Software - Database Licenses | 391.00 | 271 | $130,000 |
| | Tape Library Active Vault | 391.00 | 272 | $8,000 |
| | Veeam Enterprise to Ent Plus | 391.00 | 270 | $30,000 |
| | Video Accelerator | 391.00 | 217 | $15,000 |
| | Windows Datacenter Licenses | 391.00 | 38 | $25,000 |
| **138** | **Computer Equipment** | | | **$805,000** |
| | Audio Visual Equipment (Commission Room Update) | 391.00 | 24 | $40,000 |
| | Cisco Blade Server | 391.00 | 44 | $75,000 |
| | Communications Monitors | 391.00 | 25 | $50,000 |
| | C-Series Cisco Blade Server | 391.00 | 219 | $30,000 |
| | Large Format Scanner | 391.00 | 224 | $25,000 |
| | Load Balancer Eval and Purchase | 391.00 | 32 | $75,000 |
| | Network Switch purchase | 391.00 | 33 | $40,000 |
| | Nexus Switch (Prosser) Upgrade | 391.00 | 34 | $60,000 |
| | Physical Security Audit Recommendations Phase 1 | 391.00 | 222 | $250,000 |
| | Storage Area Network (SAN) Upgrade | 391.00 | 267 | $120,000 |
| | Structured Cabling | 391.00 | 220 | $5,000 |
| | Tape drive backup | 391.00 | 236 | $5,000 |
| | Video Accelerator Cards | 391.00 | 213 | $30,000 |
| **TOTAL EXPENSE IT Infrastructure** | | | | **$2,735,301** |

## *Department* 18 IT Applications

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **011** | **All Other District Labor** | | | **$1,205,071** |
| | iVUE Enhancements | 391.00 | 31 | $30,000 |
| | Labor - Admin General | 920.00 | | $409,292 |
| | Labor - Broadband | 935.50 | | $8,273 |
| | Labor - Customer Accounting | 903.00 | | $188,892 |
| | Labor - Distribution | 588.00 | | $318,102 |
| | Labor - Leave | 184.30 | | $168,710 |
| | Labor - Transmission | 566.00 | | $4,802 |
| | NoaNET NCS and District Labor | 397.20 | 22 | $15,000 |
| | SCADA Historian Enhancements | 391.00 | 247 | $30,000 |
| | TRIM Upgrade | 391.00 | 266 | $30,000 |
| | WindMil Upgrade | 391.00 | 268 | $2,000 |
| **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** | | | **$842,783** |
| | Adobe Creative Cloud | 921.00 | | $2,000 |
| | Alden | 588.00 | | $4,400 |
| | AutoCAD Network License | 588.00 | | $3,800 |
| | Cascade (Asset Management) | 588.00 | | $20,300 |
| | Digital Signatures | 921.00 | | $3,360 |
| | Doble Software Maintenance | 588.00 | | $3,250 |
| | Employee Mass Notification System | 921.00 | | $5,000 |
| | ESRI (GIS) | 588.00 | | $27,200 |
| | Foglight | 920.00 | | $23,500 |
| | IKE GPS Software Services | 588.00 | | $6,000 |
| | Kapish EasyLink | 921.00 | | $900 |
| | Kentico License (Website) | 921.00 | | $1,349 |
| | MilSoft (Distribution System Analysis) | 588.00 | | $13,000 |
| | NeoGov | 921.00 | | $34,000 |
| | NISC Monthly Recurring Costs | 921.00 | | $185,500 |
| | NISC Monthly Recurring Costs | 903.00 | | $42,000 |
| | NISC Monthly Recurring Costs | 902.00 | | $28,000 |
| | NISC Monthly Recurring Costs | 588.00 | | $99,500 |

***Department*** 18 IT Applications

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| | Oracle (Database, Partitioning, Tuning/Diagnostics) | 921.00 | | $78,000 |
| | Osmose Ocalc Licenses (8) | 588.00 | | $3,200 |
| | PI Historian Annual Maintenance | 588.00 | | $11,000 |
| | PowerBI | 921.00 | | $15,000 |
| | PowerWorld Transmission Software | 588.00 | | $3,800 |
| | Reporting Workflow Software | 921.00 | | $2,000 |
| | 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 | | $10,000 |
| | SSIS Additional Add-on's (CozyRoc) | 921.00 | | $2,000 |
| | Survalent (SCADA) | 592.30 | | $27,000 |
| | Tableau Business Intelligence Software | 921.00 | | $37,000 |
| | Toad Data Point | 921.00 | | $150 |
| | Toad for Oracle (Xpert Edition - 2) | 921.00 | | $1,100 |
| | Toad for Oracle Base Edition (3 - Analysts) | 921.00 | | $800 |
| | Toad for Oracle DBA Suite | 921.00 | | $1,450 |
| | Toad for SQL Server Professional Edition (2) | 921.00 | | $300 |
| | Toad for SQL Server Xpert Edition (3) | 921.00 | | $1,350 |
| | TRIM | 921.00 | | $27,000 |
| | Vegetation Management Software | 588.00 | | $5,000 |
| | Vehicle Management System Maintenance | 588.00 | | $4,700 |
| | Website Hosting Fees | 921.00 | | $6,874 |
| **026** | **Computer Hardware & Equip Exp** | | | **$17,500** |
| | Kiosks (2) - Lease Kennewick & Prosser | 903.00 | | $17,500 |
| **027** | **Personal Computer Software** | | | **$9,700** |
| | Cascade Field Unit License Upgrade | 588.00 | | $600 |
| | Fuel System - Win 7 Upgrade License | 588.00 | | $1,600 |
| | Misc Upgrades and Software | 921.00 | | $2,500 |
| | MSDN licenses (4) | 921.00 | | $5,000 |
| **033** | **Office Supplies & Expenses** | | | **$1,500** |
| | Misc Office Supplies | 921.00 | | $1,500 |
| **042** | **Business Expense and Travel** | | | **$19,175** |
| | Business Intelligence Conference | 921.00 | | $6,000 |

***Department*** 18 IT Applications

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| | Cascade User Group (Analyst) | 588.00 | | $2,000 |
| | Data Integration / Administration Conference | 921.00 | | $4,675 |
| | IT Mgmt/Strategic Planning (Apps Manager) | 921.00 | | $2,500 |
| | NISC User Group (Analyst) | 921.00 | | $4,000 |
| **043** | **Training Expense & Travel** | | | **$10,725** |
| | Business Intelligence and Database Training | 921.00 | | $8,725 |
| | SCADA/Historian Training | 588.00 | | $2,000 |
| **045** | **Subscriptions & Publications** | | | **$250** |
| | Subscription & Publications | 921.00 | | $250 |
| **061** | **Professional Services** | | | **$406,150** |
| | AMI Enhanced Support | 902.00 | | $42,000 |
| | BI Consulting | 921.00 | | $15,000 |
| | Cascade SQL Server Conversion Consulting | 588.00 | | $5,800 |
| | Fleet Consulting (Parts Implementation & SQL Conversion | 921.00 | | $25,000 |
| | Intranet Redesign Study | 921.00 | | $10,000 |
| | iVUE Enhancements | 391.00 | 31 | $35,000 |
| | NeoGov Consulting | 921.00 | | $10,000 |
| | NISC Programming (Expense) | 921.00 | | $5,000 |
| | TRIM Upgrade | 391.00 | 266 | $25,000 |
| | Website Annual Upgrades & Misc Programming | 921.00 | | $20,350 |
| | Website Redesign | 921.00 | | $180,000 |
| | Website Support & Maintenance | 921.00 | | $18,000 |
| | WindMil Upgrade | 391.00 | 268 | $15,000 |
| **072** | **Industry Association Assessment** | | | **$8,000** |
| | Utility Analytics Membership | 921.00 | | $8,000 |
| **137** | **Capitalized Computer Software** | | | **$65,000** |
| | Purchase and Implement ETL Tool | 391.00 | 35 | $25,000 |
| | SCADA Historian Enhancements | 391.00 | 247 | $40,000 |

**TOTAL EXPENSE IT Applications** **$2,654,254**

**PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY**
**2021 Budget**
**Summary of Expense by Directorate**

## Broadband

| Department(s) | | Totals |
|---|---|---|
| 46 | Broadband | 2,684,740 |
| **Grand Total Expenses - Broadband** | | $2,684,740 |

## Directorate Budget by Department and Activity
## 2021 Budget Compared to 2020 Budget

| Directorate | Broadband |
|---|---|

| Department | Activity | 2021 Budget | 2020 Original Budget | Increase / (Decrease) | % Increase / (Decrease) |
|---|---|---|---|---|---|
| **46 - Broadband** | 12 - Materials & Supplies | $366,603 | $536,004 | ($169,401) | (31.6%) |
| | 17 - Operation & Maintenance Exp | 46,500 | 46,500 | - | 0.0% |
| | 18 - Misc Construction Expense | 20,000 | - | 20,000 | N/A |
| | 20 - Off-the-Dock Labor | 905,397 | 1,286,496 | (381,099) | (29.6%) |
| | 28 - Personal Computer O&M Costs | 59,000 | 59,000 | - | 0.0% |
| | 38 - Maint of Bldg & Improvements | 7,500 | 7,500 | - | 0.0% |
| | 40 - Rents | 134,711 | 124,299 | 10,412 | 8.4% |
| | 44 - Other General Expenses | 995,029 | 888,400 | 106,629 | 12.0% |
| | 136 - Communication Equipment | 150,000 | 150,000 | - | 0.0% |
| **46 - Broadband Total** | | **2,684,740** | **3,098,199** | **(413,459)** | **(13.3%)** |
| **Grand Total** | | **$2,684,740** | **$3,098,199** | **($413,459)** | **(13.3%)** |

## *Department* 46 Broadband

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **012** | **Materials & Supplies** | | | **$366,603** |
| | Advanced Wireless/Small Cell | 397.30 | 214 | $195,603 |
| | Fiber Conduit | 397.20 | 19 | $6,000 |
| | Fiber Customer Connects - LEC 1 | 397.20 | 135 | $30,000 |
| | Fiber Customer Connects LEC 2 | 397.20 | 21 | $135,000 |
| **017** | **Operation & Maintenance Expense** | | | **$46,500** |
| | 18-46-02 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** | | | **$905,397** |
| | Advanced Wireless/Small Cell | 397.30 | 214 | $456,397 |
| | Fiber Conduit | 397.20 | 19 | $14,000 |
| | Fiber Customer Connects - LEC 1 | 397.20 | 135 | $70,000 |
| | Fiber Customer Connects LEC 2 | 397.20 | 21 | $315,000 |
| | Joint Use Audit Corrective Actions | 935.30 | | $50,000 |
| **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** | | | **$7,500** |
| | Maintenance Expense (Nodes and Building) | 935.20 | | $7,500 |
| **040** | **Rents** | | | **$134,711** |
| | 10-46-07 Energy NW - (2) Dark Fiber-Ashe Facility to POS, Line #1 | 935.20 | | $3,050 |
| | 10-46-07 Energy NW Facility - Misc Svcs.- Rack Units, Line #2 | 935.20 | | $1,800 |
| | 10-46-12 Verizon Colocation Space and DC Power - 10-46-12 | 935.20 | | $17,520 |
| | 13-46-04 - FPUD Dark Fiber Lease | 935.20 | | $15,480 |
| | 14-46-06 COR - Dark Fiber Lease | 935.20 | | $4,800 |
| | 15-46-04 COR - Fiber Lease - GWW & Knight St. | 935.20 | | $3,240 |
| | 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 |

## *Department* 46 Broadband

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| | 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 |
| | 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 | | $5,000 |
| | 20-46-06 COR - Dark Fiber Lease - Richland Public Library | 935.20 | | $1 |
| | 20-46-10 COR - DFL - Bellerive, Steptoe (15-46-08) | 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 (15-46-03) | 935.20 | | $3,240 |
| | 20-46-13 COR - Fiber Lease - Fowler St (18-46-01) | 935.20 | | $1,620 |
| | 20-46-14 COR - Fiber Lease - LW Campus (17-46-01) | 935.20 | | $3,240 |
| | 20-46-15 COR - DFL - Stevens, Mansfield | 935.20 | | $1,620 |
| | 20-46-1X COR - Fiber Lease - 5 Towers (12-46-11) | 935.20 | | $16,200 |
| | 20-46-1X COR - Fiber Lease - Williams Blvd (17-46-04) | 935.20 | | $3,240 |
| | BPA Dark Fiber Lease (BPA 01TX-10704/BPUD #01-41-05) | 935.20 | | $4,000 |
| | Pole Contact Fees (COR, FPUD, & LSN) | 935.20 | | $8,600 |
| **044** | **Other General Expenses** | | | **$995,029** |
| | 10-46-13 NoaNet - Internet Access via Franklin POP ($1,260 x 12 plus bursting @ $3.6 per | 935.20 | | $20,000 |
| | 18-46-02 NCS; NoaNet Labor Allocation to O&M | 935.20 | | $778,263 |
| | Franklin PUD Recurring Transport Charges | 935.20 | | $2,200 |
| | NoaNET NCS and District Labor | 397.20 | 22 | $194,566 |
| **136** | **Communication Equipment** | | | **$150,000** |
| | WO#559986 - Backbone System Electronics | 397.40 | 133 | $75,000 |
| | WO#560002 - Premise Electronics | 397.25 | 136 | $75,000 |
| **TOTAL EXPENSE Broadband** | | | | **$2,684,740** |

# Engineering

**Tab 6**

**PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY**
**2021 Budget**
**Summary of Expense by Directorate**

## Engineering

| Department(s) | | Totals |
|---|---|---|
| 21 | Engineering | 13,569,625 |
| 22 | Customer Engineering | 832,445 |
| **Grand Total Expenses - Engineering** | | $14,402,070 |

## Directorate Budget by Department and Activity
## 2021 Budget Compared to 2020 Budget

| Directorate | Engineering |
|---|---|

| Department | Activity | 2021 Budget | 2020 Original Budget | Increase / (Decrease) | % Increase / (Decrease) |
|---|---|---|---|---|---|
| **21 - Engineering** | 11 - All Other District Labor | $683,756 | $837,709 | ($153,953) | (18.4%) |
| | 12 - Materials & Supplies | 5,219,477 | 3,336,680 | 1,882,797 | 56.4% |
| | 18 - Misc Construction Expense | 101,260 | 79,224 | 22,036 | 27.8% |
| | 20 - Off-the-Dock Labor | 10,000 | - | 10,000 | N/A |
| | 21 - Elec Construction Contracts | 4,153,249 | 2,830,073 | 1,323,176 | 46.8% |
| | 33 - Office Supplies & Expenses | 4,000 | 4,000 | - | 0.0% |
| | 42 - Business Expense & Travel | 1,000 | 14,500 | (13,500) | (93.1%) |
| | 43 - Training Expense & Travel | 10,400 | 16,000 | (5,600) | (35.0%) |
| | 45 - Subscriptions & Publications | 2,500 | 2,500 | - | 0.0% |
| | 61 - Professional Services | 627,942 | 553,564 | 74,378 | 13.4% |
| | 72 - Industry Assoc Assessments | 15,154 | 15,154 | - | 0.0% |
| | 120 - Substation Xfrs & Regulators | - | 583,051 | (583,051) | (100.0%) |
| | 121 - Substation Equip & Materials | 807,535 | 1,288,633 | (481,098) | (37.3%) |
| | 122 - Line Devices | 303,236 | 392,593 | (89,357) | (22.8%) |
| | 123 - Transformers & Related Items | 1,200,000 | 1,200,000 | - | 0.0% |
| | 125 - Land & Land Rights - Electric | 328,864 | 321,510 | 7,354 | 2.3% |
| | 127 - SCADA Communications Equipment | 75,252 | 108,500 | (33,248) | (30.6%) |
| | 128 - SCADA Substation Equipment | 25,000 | 25,000 | - | 0.0% |
| | 132 - Office Equipment | 1,000 | 1,000 | - | 0.0% |
| | 545 - Other Electric Revenue | - | (700,000) | 700,000 | (100.0%) |
| **21 - Engineering Total** | | **13,569,625** | **10,909,691** | **2,659,934** | **24.4%** |
| **22 - Customer Engineering** | 10 - District Overtime Labor | 15,000 | 10,000 | 5,000 | 50.0% |
| | 11 - All Other District Labor | 724,790 | 636,815 | 87,975 | 13.8% |
| | 14 - Small Tools & Materials | 850 | 850 | - | 0.0% |
| | 17 - Operation & Maintenance Exp | 3,600 | 3,600 | - | 0.0% |
| | 18 - Misc Construction Expense | 30,905 | 28,405 | 2,500 | 8.8% |
| | 29 - Personal Computer Supplies&Exp | 1,000 | 1,000 | - | 0.0% |
| | 33 - Office Supplies & Expenses | 1,000 | 1,000 | - | 0.0% |
| | 40 - Rents | 15,000 | 24,000 | (9,000) | (37.5%) |
| | 42 - Business Expense & Travel | 5,900 | 9,000 | (3,100) | (34.4%) |
| | 43 - Training Expense & Travel | 17,800 | 30,500 | (12,700) | (41.6%) |
| | 61 - Professional Services | 10,000 | 10,000 | - | 0.0% |
| | 132 - Office Equipment | 1,000 | 1,000 | - | 0.0% |
| | 134 - Tools, Shop & Stores Equipment | 5,600 | 5,600 | - | 0.0% |
| **22 - Customer Engineering Total** | | **832,445** | **761,770** | **70,675** | **9.3%** |
| **Grand Total** | | **$14,402,070** | **$11,671,461** | **$2,730,609** | **23.4%** |

***Department*** 21 Engineering

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **011** | **All Other District Labor** | | | **$683,756** |
| | Dist System Improvements | 365.00 | 141 | $2,808 |
| | Dist System Improvements | 366.00 | 141 | $2,808 |
| | Distribution voltage regulator SCADA | 380.00 | 143 | $3,158 |
| | Fiber to Substations & Line Devices | 380.00 | 144 | $7,471 |
| | Labor - Admin General | 920.00 | | $2,029 |
| | Labor - Broadband | 935.50 | | $23,031 |
| | Labor - Customer Accounting | 903.00 | | $5,175 |
| | Labor - Distribution | 588.00 | | $397,243 |
| | Labor - Leave | 184.30 | | $95,726 |
| | Labor - Transmission | 566.00 | | $47,999 |
| | Repair & Replacement - Cable | 367.00 | 147 | $2,400 |
| | Ridgeline Substation Property Acquisition | 362.01 | 226 | $2,000 |
| | Services, Set Xfmrs, Run Secondary | 369.10 | 94 | $4,843 |
| | Substation RTU & radio communications upgrades | 380.00 | 97 | $9,129 |
| | Vista Substation Feeder Getaways | 367.00 | 296 | $1,750 |
| | WO# 503528 - Voltage Optimization - Kennewick | 365.00 | 151 | $7,728 |
| | WO# 511742 - Transmission Line-Phillips to Spaw | 355.00 | 212 | $5,292 |
| | WO# 524249 - Feeder Position Addition-Phillips P8R | 362.01 | 167 | $1,721 |
| | WO# 591902 - 735 Meter install at H2F3 Substation | 362.01 | 110 | $323 |
| | WO# XXXXXX - 735 Meter install at Sandpiper Substation | 362.01 | 113 | $323 |
| | WO# XXXXXX - Angus Bay #2 Feeder Breaker & Relay Replacement | 362.01 | 287 | $1,765 |
| | WO# XXXXXX - Prosser Animal Fence | 362.01 | 116 | $706 |
| | WO# XXXXXX - Transmission Study - River System | 355.00 | 299 | $14,000 |
| | WO# XXXXXX - Xfmr & Feeder Relay Upgrade - Ely #1 | 362.01 | 295 | $21,006 |
| | WO# XXXXXX - Xfmr & Feeder Relay Upgrade-Gum Street | 362.01 | 202 | $21,006 |
| | WO# XXXXXX - Zephyr Heights Battery Bank Replacement | 362.01 | 286 | $1,500 |
| | WO# XXXXXX -Southridge Sub Feeder Getaways | 366.00 | 207 | $816 |
| **012** | **Materials & Supplies** | | | **$5,219,477** |
| | Dist Base Growth | 365.00 | 140 | $468,577 |
| | Dist Base Growth | 366.00 | 140 | $693,995 |
| | Dist System Improvements | 366.00 | 141 | $23,843 |
| | Dist System Improvements | 365.00 | 141 | $23,843 |
| | Distribution - Inventory Issued for O&M | 588.00 | | $100,000 |
| | Distribution Pole Replacement | 364.00 | 160 | $5,137 |
| | Distribution voltage regulator SCADA | 380.00 | 143 | $585 |

***Department*** 21 Engineering

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| | Fiber to Substations & Line Devices | 380.00 | 144 | $10,000 |
| | JU - NESC Compliance Program | 365.00 | 145 | $95,000 |
| | JU - NESC Compliance Program | 364.00 | 145 | $30,000 |
| | Poles & Fixtures, Misc Repairs | 355.00 | 75 | $100,000 |
| | POS#10 - WO# XXXXXX - GUM-4, dbl cir on 36th, recond 3/0 on Oak St | 365.00 | 254 | $45,000 |
| | POS#102 - WO#XXXXXX - HED-4 Getaway Reconductor | 367.00 | 288 | $25,479 |
| | POS#110 - WO#XXXXXX - RTA-2 Recond #2 Country Meadows Lane | 367.00 | 289 | $1,502 |
| | POS#111 - WO#XXXXXX - RTA-3 Recond Utilize 4" for 3 phase | 367.00 | 290 | $32,978 |
| | POS#115 - WO#XXXXXX - RTA-2 to RTA-1 Offload | 365.00 | 291 | $75,000 |
| | POS#115 - WO#XXXXXX - RTA-2 to RTA-1 Offload | 367.00 | 291 | $55,000 |
| | POS#118 - WO#XXXXXX - PSR-6 Switch additions | 365.00 | 293 | $2,400 |
| | POS#58 - WO# XXXXXX - BEC-3, new feeder to east to tie with SSR-1 | 365.00 | 205 | $246,325 |
| | POS#58 - WO# XXXXXX - BEC-3, new feeder to east to tie with SSR-1 | 364.00 | 205 | $97,018 |
| | POS#81 - WO# XXXXXX - PHI-8, new feeder north to Cochrane | 367.00 | 297 | $49,608 |
| | POS#81 - WO# XXXXXX - PHI-8, new feeder north to Cochrane | 365.00 | 297 | $48,480 |
| | Repair & Replacement - Cable | 367.00 | 147 | $215,000 |
| | Repair & Replacement - Other | 365.00 | 92 | $159,000 |
| | Repair & Replacement - Other | 367.00 | 92 | $106,000 |
| | Service Poles | 350.00 | 93 | $20,000 |
| | Services, Set Xfmrs, Run Secondary | 369.20 | 94 | $93,484 |
| | Services, Set Xfmrs, Run Secondary | 369.10 | 94 | $93,484 |
| | Trouble Orders | 367.00 | 149 | $76,000 |
| | Trouble Orders | 365.00 | 149 | $114,000 |
| | WO# 511742 - Transmission Line-Phillips to Spaw | 355.00 | 212 | $1,376,215 |
| | WO# 524249 - Feeder Position Addition-Phillips P8R | 362.01 | 167 | $982 |
| | WO# 561020 - Ridgeline Under Pass | 367.00 | 178 | $297,122 |
| | WO# XXXXXX - Xfmr & Feeder Relay Upgrade-Gum Street | 362.01 | 202 | $55,141 |
| | WO# XXXXXX -Southridge Sub Feeder Getaways | 367.00 | 207 | $268,295 |
| | WO# XXXXXX -Southridge Sub Feeder Getaways | 366.00 | 207 | $114,984 |
| **018** | **Miscellaneous Construction Expense** | | | **$101,260** |
| | Distribution Pole Replacement | 364.00 | 160 | $2,660 |
| | WO# 561020 - Ridgeline Under Pass | 367.00 | 178 | $68,600 |
| | WO# XXXXXX - Hedges 115kV Metering Point | 355.00 | 169 | $30,000 |
| **020** | **Off-the-Dock Labor** | | | **$10,000** |
| | Fiber to Substations & Line Devices | 380.00 | 144 | $10,000 |

***Department*** 21 Engineering

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **021** | **Electric Construction Contracts** | | | **$4,153,249** |
| | Dist System Improvements | 366.00 | 141 | $53,483 |
| | Dock Crew Joint Use Deficiency Corrections | 590.10 | | $1,210,000 |
| | Repair & Replacement - Cable | 367.00 | 147 | $1,115,446 |
| | WO# 511742 - Transmission Line-Phillips to Spaw | 355.00 | 212 | $1,431,282 |
| | WO# 561020 - Ridgeline Under Pass | 367.00 | 178 | $320,017 |
| | WO# XXXXXX - Hedges 115kV Metering Point | 355.00 | 169 | $23,021 |
| **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 (Administrative Assistant) | 588.00 | | $1,000 |
| | Technical Training (Manager) | 588.00 | | $1,900 |
| | Technical Training (Distribution Designer) | 588.00 | | $700 |
| | Technical Training (Electrical Engineer) | 588.00 | | $1,900 |
| | Technical Training (Electrical Engineer) | 588.00 | | $1,900 |
| | Technical Training (Electrical 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** | | | **$627,942** |
| | Distribution - Joint Use Pole Contact Consulting | 590.10 | | $47,000 |
| | Distribution - Unanticipated Consulting Engineering Support | 588.00 | | $25,000 |
| | NERC/WECC Consulting - GDS #10-51-06 | 560.01 | | $30,000 |
| | WO# 511742 - Transmission Line-Phillips to Spaw | 355.00 | 212 | $375,942 |
| | WO# XXXXXX - Hedges 115kV Metering Point | 355.00 | 169 | $5,000 |
| | WO# XXXXXX - Transmission Line-Klickitat to Horse Heaven Tie | 355.00 | 294 | $15,000 |
| | WO# XXXXXX - Transmission Study - River System | 355.00 | 299 | $130,000 |
| **072** | **Industry Association Assessment** | | | **$15,154** |
| | IEEE Membership (Manager, Senior Engineer, Electrical Engineer (4)) | 588.00 | | $1,200 |

**Department** 21 Engineering

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| | Miscellaneous | 588.00 | | $100 |
| | Notary Renewals | 588.00 | | $250 |
| | PE Licenses & Renewals (3) $201 every 2 yrs ea | 588.00 | | $604 |
| | Smart Electric Power Alliance (SEPA) | 588.00 | | $5,000 |
| | WSU Power Engineering Program | 588.00 | | $8,000 |
| **121** | **Substation Equipment & Materials** | | | **$807,535** |
| | POS#10 - WO# XXXXXX - GUM-4, dbl cir on 36th, recond 3/0 on Oak St | 365.00 | 254 | $15,000 |
| | POS#58 - WO# XXXXXX - BEC-3, new feeder to east to tie with SSR-1 | 365.00 | 205 | $37,970 |
| | Substation Inventory Issued for O&M | 592.00 | | $100,000 |
| | Substation Misc. Aux Equip, Relays/Controls | 362.01 | 148 | $25,000 |
| | WO# 511742 - Transmission Line-Phillips to Spaw | 355.00 | 212 | $67,132 |
| | WO# 524249 - Feeder Position Addition-Phillips P8R | 362.01 | 167 | $2,461 |
| | WO# 561020 - Ridgeline Under Pass | 367.00 | 178 | $80,004 |
| | WO# 591902 - 735 Meter install at H2F3 Substation | 362.01 | 110 | $5,794 |
| | WO# XXXXXX - 735 Meter install at Sandpiper Substation | 362.01 | 113 | $5,794 |
| | WO# XXXXXX - Angus Bay #2 Feeder Breaker & Relay Replacement | 362.01 | 287 | $105,000 |
| | WO# XXXXXX - Hedges 115kV Metering Point | 355.00 | 169 | $100,000 |
| | WO# XXXXXX - Prosser Animal Fence | 362.01 | 116 | $38,000 |
| | WO# XXXXXX - Xfmr & Feeder Relay Upgrade - Ely #1 | 362.01 | 295 | $55,141 |
| | WO# XXXXXX - Zephyr Heights Battery Bank Replacement | 362.01 | 286 | $6,811 |
| | WO# XXXXXX -Southridge Sub Feeder Getaways | 367.00 | 207 | $163,428 |
| **122** | **Line Devices** | | | **$303,236** |
| | Dist System Improvements | 365.00 | 141 | $23,658 |
| | Dist System Improvements | 366.00 | 141 | $23,658 |
| | Distribution - Inventory Issued for O&M | 595.00 | | $100,000 |
| | POS#102 - WO#XXXXXX - HED-4 Getaway Reconductor | 365.00 | 288 | $8,000 |
| | POS#117 - WO#XXXXXX - SSR-1 offload to SSR3 (Switches) | 365.00 | 292 | $6,500 |
| | POS#118 - WO#XXXXXX - PSR-6 Switch additions | 365.00 | 293 | $3,400 |
| | Switch Upgrade/Additions | 355.00 | 137 | $74,000 |
| | WO# 503528 - Voltage Optimization - Kennewick | 365.00 | 151 | $43,887 |
| | WO# 524249 - Feeder Position Addition-Phillips P8R | 362.01 | 167 | $20,132 |
| **123** | **Transformers & Related Items** | | | **$1,200,000** |
| | Services, Set Xfmrs, Run Secondary | 368.10 | 94 | $1,200,000 |
| **125** | **Land & Land Rights - Electric** | | | **$328,864** |

***Department*** 21 Engineering

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| | Ridgeline Substation Property Acquisition | 362.01 | 226 | $328,864 |
| **127** | **SCADA Communications Equipment** | | | **$75,252** |
| | Distribution voltage regulator SCADA | 380.00 | 143 | $40,252 |
| | Fiber to Substations & Line Devices | 380.00 | 144 | $5,000 |
| | Substation RTU & radio communications upgrades | 380.00 | 97 | $5,000 |
| | WO# XXXXXX - Hedges 115kV Metering Point | 355.00 | 169 | $25,000 |
| **128** | **SCADA Substation Equipment** | | | **$25,000** |
| | Substation RTU & radio communications upgrades | 380.00 | 97 | $25,000 |
| **132** | **Office Equipment** | | | **$1,000** |
| | Miscellaneous Office Furniture | 588.00 | | $1,000 |

**TOTAL EXPENSE Engineering** **$13,569,625**

**Department** 22 Customer Engineering

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **010** | **District Overtime Labor** | | | **$15,000** |
| | Labor - Overtime - Distribution | 588.00 | | $15,000 |
| **011** | **All Other District Labor** | | | **$724,790** |
| | Dist Base Growth | 365.00 | 140 | $31,410 |
| | Dist Base Growth | 366.00 | 140 | $58,671 |
| | Dist System Improvements | 365.00 | 141 | $7,765 |
| | Dist System Improvements | 366.00 | 141 | $3,668 |
| | Distribution Pole Replacement | 364.00 | 160 | $1,536 |
| | Labor - Admin General | 920.00 | | $948 |
| | Labor - Customer Accounting | 903.00 | | $4,133 |
| | Labor - Distribution | 588.00 | | $384,338 |
| | Labor - Leave | 184.30 | | $101,471 |
| | Labor - Transmission | 566.00 | | $1,544 |
| | POS#102 - WO#XXXXXX - HED-4 Getaway Reconductor | 367.00 | 288 | $2,500 |
| | POS#110 - WO#XXXXXX - RTA-2 Recond #2 Country Meadows Lane | 367.00 | 289 | $1,000 |
| | POS#111 - WO#XXXXXX - RTA-3 Recond Utilize 4" for 3 phase | 367.00 | 290 | $2,500 |
| | POS#115 - WO#XXXXXX - RTA-2 to RTA-1 Offload | 367.00 | 291 | $2,000 |
| | POS#115 - WO#XXXXXX - RTA-2 to RTA-1 Offload | 365.00 | 291 | $6,000 |
| | POS#117 - WO#XXXXXX - SSR-1 offload to SSR3 (Switches) | 365.00 | 292 | $1,000 |
| | POS#118 - WO#XXXXXX - PSR-6 Switch additions | 365.00 | 293 | $250 |
| | POS#58 - WO# XXXXXX - BEC-3, new feeder to east to tie with SSR-1 | 365.00 | 205 | $8,304 |
| | POS#58 - WO# XXXXXX - BEC-3, new feeder to east to tie with SSR-1 | 364.00 | 205 | $3,559 |
| | POS#81 - WO# XXXXXX - PHI-8, new feeder north to Cochrane | 365.00 | 297 | $2,000 |
| | POS#81 - WO# XXXXXX - PHI-8, new feeder north to Cochrane | 367.00 | 297 | $2,000 |
| | Repair & Replacement - Cable | 367.00 | 147 | $13,350 |
| | Services, Set Xfmrs, Run Secondary | 369.10 | 94 | $69,500 |
| | Vista Substation Feeder Getaways | 367.00 | 296 | $3,000 |
| | WO# 561020 - Ridgeline Under Pass | 367.00 | 178 | $5,000 |
| | WO# XXXXXX -Southridge Sub Feeder Getaways | 366.00 | 207 | $1,632 |
| | WO# XXXXXX -Southridge Sub Feeder Getaways | 367.00 | 207 | $5,712 |
| **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 |

## *Department* 22 Customer Engineering

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **017** | **Operation & Maintenance Expense** | | | **$3,600** |
| | Equipment Maintenance/Repair | 935.40 | | $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 |
| **018** | **Miscellaneous Construction Expense** | | | **$30,905** |
| | County Recording Fees - Easements | 360.00 | 140 | $7,500 |
| | Dist Base Growth | 361.00 | 140 | $10,905 |
| | New Permits (Crossing, Etc.) | 361.00 | 140 | $10,000 |
| | Title Reports for Construction Projects | 361.00 | 140 | $2,500 |
| **029** | **Personal Computer Supplies & Expenses** | | | **$1,000** |
| | Printer / Plotter Paper | 588.00 | | $1,000 |
| **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 Design Technician) | 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 Design Technician) | 588.00 | | $3,900 |
| | NWPPA Staking Certification Courses (2) (Distribution Design 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 (Department Assistant) | 588.00 | | $1,900 |
| **061** | **Professional Services** | | | **$10,000** |

***Department*** 22 Customer Engineering

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| | Surveying for O&M Support | 588.00 | | $10,000 |
| **132** | **Office Equipment** | | | **$1,000** |
| | 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** | | | **$832,445** |

# Power Management

**Tab 6**

**PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY**
**2021 Budget**
**Summary of Expense by Directorate**

# Power Management

| Department(s) | | Totals |
|---|---|---|
| 45 | Energy Programs | 238,874 |
| 51 | Power Management | 104,068,920 |
| **Grand Total Expenses - Power Management** | | $104,307,794 |

## Directorate Budget by Department and Activity
## 2021 Budget Compared to 2020 Budget

| Directorate | Power Management |
|---|---|

| Department | Activity | 2021 Budget | 2020 Original Budget | Increase / (Decrease) | % Increase / (Decrease) |
|---|---|---|---|---|---|
| **45 - Energy Programs** | 9 - Purchased Power | ($2,265,000) | ($2,516,125) | $251,125 | (10.0%) |
| | 10 - District Overtime Labor | - | 5,000 | (5,000) | (100.0%) |
| | 11 - All Other District Labor | 629,649 | 593,363 | 36,286 | 6.1% |
| | 33 - Office Supplies & Expenses | 5,000 | 5,000 | - | 0.0% |
| | 42 - Business Expense & Travel | 9,800 | 15,000 | (5,200) | (34.7%) |
| | 43 - Training Expense & Travel | 5,200 | 8,000 | (2,800) | (35.0%) |
| | 45 - Subscriptions & Publications | 150 | 150 | - | 0.0% |
| | 60 - Audit Examination - State | 10,500 | 30,000 | (19,500) | (65.0%) |
| | 61 - Professional Services | 15,000 | 20,000 | (5,000) | (25.0%) |
| | 70 - Civic & Service Organizations | - | 140 | (140) | (100.0%) |
| | 72 - Industry Assoc Assessments | 14,575 | 11,375 | 3,200 | 28.1% |
| | 112 - Residential Conservation Exp | 621,000 | 512,765 | 108,235 | 21.1% |
| | 113 - Commercial Conservation Exp | 334,000 | 537,293 | (203,293) | (37.8%) |
| | 114 - Industrial Conservation Expense | 486,000 | 726,668 | (240,668) | (33.1%) |
| | 115 - Agriculture Conservation Expense | 104,000 | 67,002 | 36,998 | 55.2% |
| | 117 - Residential Appliance & Lighting Program | 19,000 | - | 19,000 | N/A |
| | 118 - Low Income Conservation | 250,000 | 230,000 | 20,000 | 8.7% |
| **45 - Energy Programs Total** | | **238,874** | **245,631** | **(6,757)** | **(2.8%)** |
| **51 - Power Management** | 9 - Purchased Power | 103,431,751 | 103,034,256 | 397,495 | 0.4% |
| | 11 - All Other District Labor | 415,658 | 301,229 | 114,429 | 38.0% |
| | 33 - Office Supplies & Expenses | 1,500 | 1,500 | - | 0.0% |
| | 42 - Business Expense & Travel | 14,200 | 21,500 | (7,300) | (34.0%) |
| | 43 - Training Expense & Travel | 4,900 | 5,000 | (100) | (2.0%) |
| | 61 - Professional Services | 192,600 | 203,231 | (10,631) | (5.2%) |
| | 72 - Industry Assoc Assessments | 8,311 | 5,475 | 2,836 | 51.8% |
| **51 - Power Management Total** | | **104,068,920** | **103,572,191** | **496,729** | **0.5%** |
| **Grand Total** | | **$104,307,794** | **$103,817,822** | **$489,972** | **0.5%** |

## *Department* 45 Energy Programs

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **009** | **Purchased Power** | | | **($2,265,000)** |
| | EEI Reimbursement - Rebates | 555.71 | | ($2,225,000) |
| | PTCS Reimbursement | 555.71 | | ($40,000) |
| **011** | **All Other District Labor** | | | **$629,649** |
| | Labor - Conservation Program | 908.30 | | $422,368 |
| | Labor - EV | 908.60 | | $43,320 |
| | Labor - Leave | 184.30 | | $88,151 |
| | Labor - Purchased Power | 557.00 | | $43,320 |
| | Labor - Solar Connections | 908.97 | | $32,490 |
| **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, Program 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** | | | **$5,200** |
| | BPA Annual Conservation Mtgs (Energy Efficiency Advisor (2), Energy Programs Analyst (2) | 908.30 | | $2,600 |
| | Misc. Training - (Energy Efficiency Advisor (3), Energy Programs Analyst (2), Department Sp | 908.30 | | $2,600 |
| **045** | **Subscriptions & Publications** | | | **$150** |
| | Subscription & Publications (Home Energy Mag.) | 908.30 | | $150 |
| **060** | **Audit Examination - State** | | | **$10,500** |
| | I-937 SAO Audit Examination Fees (REC) | 557.00 | | $10,500 |
| **061** | **Professional Services** | | | **$15,000** |
| | Legal expense- K&L Gates, EES CPA audit support | 557.00 | | $15,000 |
| **072** | **Industry Association Assessment** | | | **$14,575** |
| | APPA - DEED Program | 921.00 | | $3,200 |
| | Home Builders Association Dues | 908.30 | | $375 |
| | PNW Transportation Electrification Collaborative Dues and Fees | 908.60 | | $1,000 |

***Department*** 45 Energy Programs

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| | Smart Electric Power Alliance (SEPA) | 588.00 | | $5,000 |
| | White Creek Cash Call | 557.00 | | $4,000 |
| | WREGIS Annual Dues & Fees | 555.52 | | $1,000 |
| **112** | **Residential Conservation Expense** | | | **$621,000** |
| | Residential Conservation Expense | 908.30 | | $621,000 |
| **113** | **Commercial Conservation Expense** | | | **$334,000** |
| | Commercial Conservation Expense | 908.32 | | $334,000 |
| **114** | **C&R Discount Reimbursable Expenses** | | | **$486,000** |
| | Industrial Conservation Expense | 908.31 | | $486,000 |
| **115** | **Irrigation Conservation Expense** | | | **$104,000** |
| | Agriculture /Irrigation Conservation Expenses | 908.33 | | $104,000 |
| **117** | **Appliance Efficiency Program Expense** | | | **$19,000** |
| | Residential Appliance Expense | 908.30 | | $19,000 |
| **118** | **Low Income Conservation Expense** | | | **$250,000** |
| | Residential CAC Low Income Program | 908.34 | | $150,000 |
| | Residential District Low Income Program | 908.30 | | $100,000 |

**TOTAL EXPENSE Energy Programs** **$238,874**

## *Department* 51 Power Management

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **009** | **Purchased Power** | | | **$103,431,751** |
| | Ancillary Services (includes TEA Scheduling & Risk Management) | 557.00 | | $1,700,590 |
| | BPA Financial Reserve Policy Surcharge | 555.00 | | $205,875 |
| | BPA Prepay Credit | 555.72 | | ($161,256) |
| | BPA Transmission | 565.05 | | $9,484,506 |
| | BPA Transmission Ancillary Costs | 565.05 | | $2,350,153 |
| | Frederickson CT Fixed Expense | 555.51 | | $8,026,976 |
| | Frederickson Variable Expense | 555.51 | | $9,244,959 |
| | GTA Delivery Charge | 557.00 | | $2,817 |
| | Irrigation Mitigation | 555.01 | | ($3,468,978) |
| | Load Shaping | 555.03 | | ($485,014) |
| | Non-Slice (Block) | 555.01 | | ($3,564,012) |
| | Other Purchases - Options Premium | 555.50 | | $350,000 |
| | Other Purchases - Power | 555.50 | | $6,009,661 |
| | Packwood | 555.50 | | $472,352 |
| | Renewable Energy Credit Purchases | 555.52 | | $1,175,910 |
| | Renewables (Nine Canyon, White Creek) | 555.50 | | $3,669,670 |
| | Tier 1 Composite Block | 555.01 | | $35,581,577 |
| | Tier 1 Composite Slice | 555.00 | | $32,835,965 |
| **011** | **All Other District Labor** | | | **$415,658** |
| | Labor - Leave | 184.30 | | $58,192 |
| | Labor - Purchased Power | 557.00 | | $357,466 |
| **033** | **Office Supplies & Expenses** | | | **$1,500** |
| | Misc Office Supplies | 557.00 | | $1,500 |
| **042** | **Business Expense and Travel** | | | **$14,200** |
| | BPA, PPC, TEA, PNUCC (Director, Senior Engineer, Power Analyst) | 557.00 | | $11,000 |
| | Utility Analytics Institute (Director, Senior Engineer, Power Analyst) | 557.00 | | $3,200 |
| **043** | **Training Expense & Travel** | | | **$4,900** |
| | NWPPA, APPA, AMA (Director, Senior Engineer, Power Analyst, Department Specialist) | 557.00 | | $4,900 |
| **061** | **Professional Services** | | | **$192,600** |
| | Demand Response Potential Assessment | 557.00 | | $25,000 |
| | Power Contracting, RMC Audit | 557.00 | | $15,000 |

***Department*** 51 Power Management

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| | Slice Implementation Group Assessment via PPC | 557.00 | | $2,000 |
| | TEA Consulting | 557.00 | | $150,600 |
| **072** | **Industry Association Assessment** | | | **$8,311** |
| | GMEI Maintenance Fee | 557.00 | | $125 |
| | IEEE(Scherer) | 557.00 | | $116 |
| | Notary (Weller) | 557.00 | | $235 |
| | OATI Web Registry Fee | 557.00 | | $350 |
| | PE License (Scherer) | 557.00 | | $35 |
| | Peak Load Management Alliance (PLMA) | 557.00 | | $2,450 |
| | PPC Slice Assessment Cash Call | 557.00 | | $5,000 |
| **TOTAL EXPENSE** | **Power Management** | | | **$104,068,920** |

# Operations

**Tab 6**

**PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY**
**2021 Budget**
**Summary of Expense by Directorate**

# Operations

| Department(s) | | Totals |
|---|---|---|
| 31 | Operations | 1,030,437 |
| 32 | Supt. of Transmission & Distribution | 5,811,566 |
| 33 | Supt. of Operations | 534,974 |
| 34 | Meter Shop | 1,002,063 |
| 35 | Transformer Shop | 904,920 |
| 37 | Automotive Shop | 808,317 |
| 38 | Support Services | 2,398,824 |
| 39 | Warehouse | 140,300 |
| **Grand Total Expenses - Operations** | | $12,631,400 |

## Directorate Budget by Department and Activity
## 2021 Budget Compared to 2020 Budget

| Directorate | Operations |
|---|---|

| Department | Activity | 2021 Budget | 2020 Original Budget | Increase / (Decrease) | % Increase / (Decrease) |
|---|---|---|---|---|---|
| **31 - Operations** | 11 - All Other District Labor | $804,253 | $888,865 | ($84,612) | (9.5%) |
| | 27 - Personal Computer Software | - | 1,200 | (1,200) | (100.0%) |
| | 33 - Office Supplies & Expenses | 4,000 | 4,000 | - | 0.0% |
| | 42 - Business Expense & Travel | 1,900 | 4,500 | (2,600) | (57.8%) |
| | 43 - Training Expense & Travel | 2,000 | 4,000 | (2,000) | (50.0%) |
| | 45 - Subscriptions & Publications | 500 | 500 | - | 0.0% |
| | 61 - Professional Services | 153,000 | 73,000 | 80,000 | 109.6% |
| | 72 - Industry Assoc Assessments | 940 | 1,165 | (225) | (19.3%) |
| | 104 - Other Employee Costs | 58,844 | 58,844 | - | 0.0% |
| | 132 - Office Equipment | 5,000 | 5,000 | - | 0.0% |
| **31 - Operations Total** | | **1,030,437** | **1,041,074** | **(10,637)** | **(1.0%)** |
| **32 - Supt of Transm & Distribution** | 10 - District Overtime Labor | 601,917 | 578,600 | 23,317 | 4.0% |
| | 11 - All Other District Labor | 3,728,948 | 3,484,484 | 244,464 | 7.0% |
| | 14 - Small Tools & Materials | 88,000 | 80,500 | 7,500 | 9.3% |
| | 17 - Operation & Maintenance Exp | 30,000 | 30,000 | - | 0.0% |
| | 18 - Misc Construction Expense | 67,500 | 67,500 | - | 0.0% |
| | 19 - Tree Trimming - Contract | 825,000 | 805,000 | 20,000 | 2.5% |
| | 20 - Off-the-Dock Labor | 10,000 | 10,000 | - | 0.0% |
| | 21 - Elec Construction Contracts | 110,000 | 150,000 | (40,000) | (26.7%) |
| | 39 - Maint of Equipment | 15,000 | 15,000 | - | 0.0% |
| | 42 - Business Expense & Travel | 7,950 | 9,600 | (1,650) | (17.2%) |
| | 43 - Training Expense & Travel | 20,701 | 27,000 | (6,299) | (23.3%) |
| | 50 - Telephone & Answering Services | 10,000 | 10,000 | - | 0.0% |
| | 61 - Professional Services | 10,000 | 50,000 | (40,000) | (80.0%) |
| | 104 - Other Employee Costs | 45,050 | 44,550 | 500 | 1.1% |
| | 134 - Tools, Shop & Stores Equipment | 241,500 | 14,300 | 227,200 | 1588.8% |
| **32 - Supt of Transm & Distribution Total** | | **5,811,566** | **5,376,534** | **435,032** | **8.1%** |
| **33 - Supt of Operations** | 10 - District Overtime Labor | 21,689 | 20,850 | 839 | 4.0% |
| | 11 - All Other District Labor | 172,485 | 166,987 | 5,498 | 3.3% |
| | 17 - Operation & Maintenance Exp | 48,500 | 48,500 | - | 0.0% |
| | 40 - Rents | 173,300 | 224,985 | (51,685) | (23.0%) |
| | 43 - Training Expense & Travel | 7,000 | 19,000 | (12,000) | (63.2%) |
| | 50 - Telephone & Answering Services | 112,000 | 112,000 | - | 0.0% |
| **33 - Supt of Operations Total** | | **534,974** | **592,322** | **(57,348)** | **(9.7%)** |
| **34 - Meter Shop** | 10 - District Overtime Labor | 28,712 | 27,604 | 1,108 | 4.0% |
| | 11 - All Other District Labor | 639,051 | 602,439 | 36,612 | 6.1% |
| | 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 | 2,500 | (1,000) | (40.0%) |
| | 43 - Training Expense & Travel | 10,800 | 15,910 | (5,110) | (32.1%) |
| | 45 - Subscriptions & Publications | 500 | 500 | - | 0.0% |
| | 124 - Meters & Related Items | 200,000 | 200,000 | - | 0.0% |
| | 127 - SCADA Communications Equipment | 5,000 | 5,000 | - | 0.0% |
| | 128 - SCADA Substation Equipment | 5,000 | 5,000 | - | 0.0% |
| | 135 - Laboratory & Test Equipment | 85,000 | 55,000 | 30,000 | 54.5% |
| | 136 - Communication Equipment | 5,000 | 40,000 | (35,000) | (87.5%) |
| **34 - Meter Shop Total** | | **1,002,063** | **975,453** | **26,610** | **2.7%** |
| **35 - Transformer Shop** | 10 - District Overtime Labor | 42,324 | 40,685 | 1,639 | 4.0% |
| | 11 - All Other District Labor | 663,919 | 641,735 | 22,184 | 3.5% |
| | 14 - Small Tools & Materials | 8,000 | 8,000 | - | 0.0% |
| | 17 - Operation & Maintenance Exp | 133,922 | 126,922 | 7,000 | 5.5% |
| | 18 - Misc Construction Expense | 10,000 | 12,763 | (2,763) | (21.6%) |
| | 42 - Business Expense & Travel | 4,300 | 6,600 | (2,300) | (34.8%) |
| | 43 - Training Expense & Travel | 8,200 | 12,800 | (4,600) | (35.9%) |
| | 45 - Subscriptions & Publications | 500 | 500 | - | 0.0% |
| | 135 - Laboratory & Test Equipment | 33,755 | - | 33,755 | N/A |
| **35 - Transformer Shop Total** | | **904,920** | **850,005** | **54,915** | **6.5%** |
| **37 - Automotive Shop** | 10 - District Overtime Labor | 8,755 | 8,500 | 255 | 3.0% |
| | 11 - All Other District Labor | 358,362 | 349,324 | 9,038 | 2.6% |
| | 14 - Small Tools & Materials | 12,100 | 12,100 | - | 0.0% |
| | 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 | 1,000 | 1,000 | - | 0.0% |
| | 39 - Maint of Equipment | 6,000 | 6,000 | - | 0.0% |

| Department | Activity | 2021 Budget | 2020 Original Budget | Increase / (Decrease) | % Increase / (Decrease) |
|---|---|---|---|---|---|
| | 42 - Business Expense & Travel | 1,200 | 1,800 | (600) | (33.3%) |
| | 43 - Training Expense & Travel | 3,900 | 6,200 | (2,300) | (37.1%) |
| **37 - Automotive Shop Total** | | **808,317** | **801,924** | **6,393** | **0.8%** |
| **38 - Support Services** | 10 - District Overtime Labor | 20,806 | 20,200 | 606 | 3.0% |
| | 11 - All Other District Labor | 396,018 | 414,943 | (18,925) | (4.6%) |
| | 14 - Small Tools & Materials | 3,000 | 3,000 | - | 0.0% |
| | 17 - Operation & Maintenance Exp | 17,500 | 17,500 | - | 0.0% |
| | 23 - Environmental | 22,000 | 22,000 | - | 0.0% |
| | 27 - Personal Computer Software | 3,000 | 2,800 | 200 | 7.1% |
| | 37 - Grounds Care | 93,000 | 93,000 | - | 0.0% |
| | 38 - Maint of Bldg & Improvements | 300,500 | 307,500 | (7,000) | (2.3%) |
| | 39 - Maint of Equipment | 5,000 | 5,000 | - | 0.0% |
| | 42 - Business Expense & Travel | 3,700 | 3,600 | 100 | 2.8% |
| | 43 - Training Expense & Travel | 7,500 | 11,400 | (3,900) | (34.2%) |
| | 45 - Subscriptions & Publications | 500 | 500 | - | 0.0% |
| | 51 - Water,Garbage,Irrigation&Other | 60,000 | 60,000 | - | 0.0% |
| | 61 - Professional Services | 16,500 | 15,000 | 1,500 | 10.0% |
| | 104 - Other Employee Costs | 1,800 | 1,800 | - | 0.0% |
| | 131 - Structures & Improvements | 498,000 | 139,000 | 359,000 | 258.3% |
| | 133 - Transportation Equipment | 950,000 | 380,000 | 570,000 | 150.0% |
| **38 - Support Services Total** | | **2,398,824** | **1,497,243** | **901,581** | **60.2%** |
| **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 | 78,000 | 78,000 | - | 0.0% |
| | 42 - Business Expense & Travel | 1,000 | 1,500 | (500) | (33.3%) |
| | 43 - Training Expense & Travel | 3,300 | 5,150 | (1,850) | (35.9%) |
| | 104 - Other Employee Costs | 29,000 | 29,000 | - | 0.0% |
| **39 - Warehouse Total** | | **140,300** | **142,650** | **(2,350)** | **(1.6%)** |
| **Grand Total** | | **$12,631,400** | **$11,277,205** | **$1,354,195** | **12.0%** |

***Department*** 31 Operations

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **011** | **All Other District Labor** | | | **$804,253** |
| | Dist System Improvements | 365.00 | 141 | $2,768 |
| | Dist System Improvements | 366.00 | 141 | $2,768 |
| | Labor - Admin General | 920.00 | | $58,857 |
| | Labor - Automotive Shop | 184.12 | | $17,077 |
| | Labor - Customer Accounting | 903.00 | | $22,574 |
| | Labor - Distribution | 588.00 | | $341,567 |
| | Labor - Inventory | 163.00 | | $13,195 |
| | Labor - Leave | 184.30 | | $112,595 |
| | POS#102 - WO#XXXXXX - HED-4 Getaway Reconductor | 367.00 | 288 | $10,000 |
| | POS#110 - WO#XXXXXX - RTA-2 Recond #2 Country Meadows Lane | 367.00 | 289 | $2,800 |
| | POS#111 - WO#XXXXXX - RTA-3 Recond Utilize 4" for 3 phase | 367.00 | 290 | $25,000 |
| | POS#115 - WO#XXXXXX - RTA-2 to RTA-1 Offload | 365.00 | 291 | $50,000 |
| | POS#115 - WO#XXXXXX - RTA-2 to RTA-1 Offload | 367.00 | 291 | $25,000 |
| | POS#117 - WO#XXXXXX - SSR-1 offload to SSR3 (Switches) | 365.00 | 292 | $7,300 |
| | POS#118 - WO#XXXXXX - PSR-6 Switch additions | 365.00 | 293 | $2,500 |
| | POS#81 - WO# XXXXXX - PHI-8, new feeder north to Cochrane | 365.00 | 297 | $40,000 |
| | POS#81 - WO# XXXXXX - PHI-8, new feeder north to Cochrane | 367.00 | 297 | $25,675 |
| | Services, Set Xfmrs, Run Secondary | 369.10 | 94 | $38,744 |
| | WO# 503528 - Voltage Optimization - Kennewick | 365.00 | 151 | $5,832 |
| **033** | **Office Supplies & Expenses** | | | **$4,000** |
| | Misc Office Supplies | 588.00 | | $4,000 |
| **042** | **Business Expense and Travel** | | | **$1,900** |
| | Travel (Senior Director, Executive 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** | | | **$153,000** |
| | Communications Contracting | 588.00 | | $25,000 |
| | Meter Testing | 586.10 | | $28,000 |
| | Safety Committee Consultant | 588.00 | | $10,000 |

***Department*** 31 Operations

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| | Safety Coordinator | 588.00 | | $90,000 |
| **072** | **Industry Association Assessment** | | | **$940** |
| | 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 | | $220 |
| | PE License (Senior Director) | 588.00 | | $150 |
| | UDIG (Superintendent) | 588.00 | | $50 |
| **104** | **Other Employee Costs** | | | **$58,844** |
| | 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 Incentive | 921.00 | | $30,000 |
| | Safety Lens Reimbursement Program | 588.00 | | $3,000 |
| | Safety Supplies | 588.00 | | $1,000 |
| | Special Safety Sessions | 588.00 | | $2,000 |
| | Vivid Learning - Elec Worker Training/Admin Safety Training | 588.00 | | $15,120 |
| **132** | **Office Equipment** | | | **$5,000** |
| | Projected Capital Equip - Ops | 390.00 | 66 | $5,000 |

**TOTAL EXPENSE Operations** **$1,030,437**

**Department** 32 Supt. of Transmission & Distribution

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **010** | **District Overtime Labor** | | | **$601,917** |
| | Labor - Overtime - Distribution | 588.00 | | $601,917 |
| **011** | **All Other District Labor** | | | **$3,728,948** |
| | Dist Base Growth | 365.00 | 140 | $125,389 |
| | Dist Base Growth | 366.00 | 140 | $233,618 |
| | Dist System Improvements | 366.00 | 141 | $28,384 |
| | Dist System Improvements | 365.00 | 141 | $28,384 |
| | Distribution Pole Replacement | 364.00 | 160 | $13,828 |
| | Distribution voltage regulator SCADA | 380.00 | 143 | $6,957 |
| | Labor - Admin General | 920.00 | | $4,403 |
| | Labor - Broadband | 935.50 | | $7,551 |
| | Labor - Customer Accounting | 903.00 | | $101,966 |
| | Labor - Distribution | 588.00 | | $1,713,105 |
| | Labor - Leave | 184.30 | | $519,953 |
| | Labor - Transmission | 566.00 | | $13,470 |
| | Meal Reimbursement | 588.00 | | $15,000 |
| | POS#10 - WO# XXXXXX - GUM-4, dbl cir on 36th, recond 3/0 on Oak St | 365.00 | 254 | $60,000 |
| | POS#58 - WO# XXXXXX - BEC-3, new feeder to east to tie with SSR-1 | 364.00 | 205 | $71,274 |
| | POS#58 - WO# XXXXXX - BEC-3, new feeder to east to tie with SSR-1 | 365.00 | 205 | $106,910 |
| | Repair & Replacement - Cable | 367.00 | 147 | $34,050 |
| | Services, Set Xfmrs, Run Secondary | 369.10 | 94 | $222,796 |
| | Services, Set Xfmrs, Run Secondary | 369.20 | 94 | $145,312 |
| | WO# 503528 - Voltage Optimization - Kennewick | 365.00 | 151 | $126,168 |
| | WO# XXXXXX -Southridge Sub Feeder Getaways | 367.00 | 207 | $90,259 |
| | WO# XXXXXX -Southridge Sub Feeder Getaways | 366.00 | 207 | $60,173 |
| **014** | **Small Tools & Materials** | | | **$88,000** |
| | Replace Battery Tools | 588.00 | | $18,000 |
| | 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** |
| | Misc. Construction Capital Expense - Line Department | 364.00 | 60 | $67,500 |

**Department** 32 Supt. of Transmission & Distribution

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **019** | **Tree Trimming - Contract** | | | **$825,000** |
| | Herbicide | 593.40 | | $1,000 |
| | Tree Replacement | 593.40 | | $4,000 |
| | Tree Trimming-Contract | 593.40 | | $820,000 |
| **020** | **Off-the-Dock Labor** | | | **$10,000** |
| | Pole Stubbing | 361.00 | 64 | $10,000 |
| **021** | **Electric Construction Contracts** | | | **$110,000** |
| | Pole Testing | 593.10 | | $110,000 |
| **039** | **Maintenance of Equipment** | | | **$15,000** |
| | Maint of Tools | 588.00 | | $15,000 |
| **042** | **Business Expense and Travel** | | | **$7,950** |
| | E&O (2) | 588.00 | | $1,700 |
| | ICUEE | 588.00 | | $1,400 |
| | Supt Business (2) | 588.00 | | $3,400 |
| | Tree Coordinator Business Exp | 588.00 | | $1,450 |
| **043** | **Training Expense & Travel** | | | **$20,701** |
| | Drone Pilot Training and Renewal | 588.00 | | $3,800 |
| | Lineman Rodeo | 588.00 | | $1 |
| | NESC | 588.00 | | $8,300 |
| | Training (2) (Line Apprentices) | 588.00 | | $8,600 |
| **050** | **Telephone & Answering Services** | | | **$10,000** |
| | Locates | 584.00 | | $10,000 |
| **061** | **Professional Services** | | | **$10,000** |
| | Meter Repair /Coordinated Electrical Repair | 597.00 | | $10,000 |
| **104** | **Other Employee Costs** | | | **$45,050** |
| | FR Clothing (Current Employees) | 588.00 | | $32,800 |
| | FR Clothing (New Hires) | 588.00 | | $5,250 |
| | FR Clothing (Rain Gear) | 588.00 | | $1,800 |
| | Gloves | 588.00 | | $5,200 |

***Department*** 32 Supt. of Transmission & Distribution

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **134** | **Tools, Shop & Stores Equipment** | | | **$241,500** |
| | 15-Ton Press | 394.00 | 284 | $5,200 |
| | D6 Dozer | 394.00 | 279 | $210,000 |
| | Locator (Instrument) | 394.00 | 283 | $9,300 |
| | Rock Hammer (for Backhoe) | 394.00 | 282 | $17,000 |
| **TOTAL EXPENSE** | **Supt. of Transmission & Distribution** | | | **$5,811,566** |

***Department*** 33 Supt. of Operations

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **010** | **District Overtime Labor** | | | **$21,689** |
| | Labor - Overtime - Distribution | 588.00 | | $21,689 |
| **011** | **All Other District Labor** | | | **$172,485** |
| | Labor - Admin General | 920.00 | | $264 |
| | Labor - Customer Accounting | 903.00 | | $3,956 |
| | Labor - Distribution | 588.00 | | $144,117 |
| | Labor - Leave | 184.30 | | $24,148 |
| **017** | **Operation & Maintenance Expense** | | | **$48,500** |
| | Communication Expenses | 588.00 | | $2,500 |
| | Doble Lease - Power Factor Test Set | 592.00 | | $28,000 |
| | Doble Relay Test Set Maintenance/Calibration | 592.00 | | $12,000 |
| | Microwave Site /Umatilla Power Bill | 935.01 | | $6,000 |
| **040** | **Rents** | | | **$173,300** |
| | 800 MHz Usage Fee - BCES | 588.00 | | $37,000 |
| | Badger Mtn Site AMI Fee | 935.00 | | $3,600 |
| | DNR Billing - Jump Off Joe | 935.02 | | $41,700 |
| | Microwave Circuit Billing - BCES | 588.00 | | $35,000 |
| | Prosser Tower Site | 935.03 | | $2,500 |
| | Rattlesnake Site Fee | 588.00 | | $50,000 |
| | Umatilla Ground Lease | 935.01 | | $3,500 |
| **043** | **Training Expense & Travel** | | | **$7,000** |
| | Survalent Training /Training (Back Up Dispatcher) | 588.00 | | $3,500 |
| | Training (System Dispatcher) | 588.00 | | $3,500 |
| **050** | **Telephone & Answering Services** | | | **$112,000** |
| | Call Center | 588.00 | | $110,000 |
| | Misc Expenses/Emergency Standby Phones | 935.00 | | $2,000 |
| **TOTAL EXPENSE Supt. of Operations** | | | | **$534,974** |

## *Department* 34 Meter Shop

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **010** | **District Overtime Labor** | | | **$28,712** |
| | Labor - Overtime - Distribution | 588.00 | | $28,712 |
| **011** | **All Other District Labor** | | | **$639,051** |
| | Distribution voltage regulator SCADA | 380.00 | 143 | $6,506 |
| | Fiber to Substations & Line Devices | 380.00 | 144 | $20,000 |
| | Labor - Admin General | 920.00 | | $416 |
| | Labor - Customer Accounting | 903.00 | | $18,418 |
| | Labor - Distribution | 588.00 | | $397,416 |
| | Labor - Leave | 184.30 | | $89,467 |
| | Services, Set Xfmrs, Run Secondary | 370.00 | 94 | $54,492 |
| | WO# 503528 - Voltage Optimization - Kennewick | 365.00 | 151 | $4,970 |
| | WO# 524249 - Feeder Position Addition-Phillips P8R | 362.01 | 167 | $1,599 |
| | WO# 591902 - 735 Meter install at H2F3 Substation | 362.01 | 110 | $1,000 |
| | WO# XXXXXX - 735 Meter install at Sandpiper Substation | 362.01 | 113 | $1,000 |
| | WO# XXXXXX - Angus Bay #2 Feeder Breaker & Relay Replacement | 362.01 | 287 | $5,999 |
| | WO# XXXXXX - Hedges 115kV Metering Point | 355.00 | 169 | $5,000 |
| | WO# XXXXXX - Xfmr & Feeder Relay Upgrade - Ely #1 | 362.01 | 295 | $16,384 |
| | WO# XXXXXX - Xfmr & Feeder Relay Upgrade-Gum Street | 362.01 | 202 | $16,384 |
| **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** | | | **$10,800** |
| | NW Meter School (2) | 588.00 | | $1,500 |
| | Power Quality | 588.00 | | $1,400 |

***Department*** 34 Meter Shop

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| | Relay School (2) | 588.00 | | $1,400 |
| | SEL-2032 Communication Processor Training | 588.00 | | $2,000 |
| | Training (Meterman Apprentice) | 588.00 | | $4,500 |
| **045** | **Subscriptions & Publications** | | | **$500** |
| | Subscription & Publications | 588.00 | | $500 |
| **124** | **Meters & Related Items** | | | **$200,000** |
| | 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** | | | **$85,000** |
| | CT Verification Tester | 395.00 | 273 | $25,000 |
| | Meter Test Standard | 395.00 | 274 | $60,000 |
| **136** | **Communication Equipment** | | | **$5,000** |
| | Communications Equipment/800 MHz Radios | 397.00 | 49 | $5,000 |

**TOTAL EXPENSE Meter Shop** **$1,002,063**

## *Department* 35 Transformer Shop

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **010** | **District Overtime Labor** | | | **$42,324** |
| | Labor - Overtime - Distribution | 588.00 | | $42,324 |
| **011** | **All Other District Labor** | | | **$663,919** |
| | Labor - Broadband | 935.50 | | $1,247 |
| | Labor - Distribution | 588.00 | | $518,836 |
| | Labor - Leave | 184.30 | | $92,949 |
| | POS#102 - WO#XXXXXX - HED-4 Getaway Reconductor | 367.00 | 288 | $5,000 |
| | WO# 503528 - Voltage Optimization - Kennewick | 365.00 | 151 | $4,970 |
| | WO# 524249 - Feeder Position Addition-Phillips P8R | 362.01 | 167 | $3,684 |
| | WO# 591902 - 735 Meter install at H2F3 Substation | 362.01 | 110 | $1,000 |
| | WO# XXXXXX - 735 Meter install at Sandpiper Substation | 362.01 | 113 | $1,000 |
| | WO# XXXXXX - Angus Bay #2 Feeder Breaker & Relay Replacement | 362.01 | 287 | $12,281 |
| | WO# XXXXXX - Hedges 115kV Metering Point | 355.00 | 169 | $5,000 |
| | WO# XXXXXX - Prosser Animal Fence | 362.01 | 116 | $6,140 |
| | WO# XXXXXX - Xfmr & Feeder Relay Upgrade - Ely #1 | 362.01 | 295 | $4,656 |
| | WO# XXXXXX - Xfmr & Feeder Relay Upgrade-Gum Street | 362.01 | 202 | $4,656 |
| | WO# XXXXXX - Zephyr Heights Battery Bank Replacement | 362.01 | 286 | $2,500 |
| **014** | **Small Tools & Materials** | | | **$8,000** |
| | 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 | | $18,000 |
| | SD Myer Oil Screening | 595.00 | | $12,000 |
| | 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 (1) | 588.00 | | $1,000 |
| | Codes Update (6) (Station Electrician) | 588.00 | | $2,300 |
| | E&O | 588.00 | | $1,000 |

***Department*** 35 Transformer Shop

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **043** | **Training Expense & Travel** | | | **$8,200** |
| | 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** | | | **$33,755** |
| | Micro Ohm Tester | 395.00 | 275 | $7,755 |
| | TTR and Winding Resistance Tester | 395.00 | 276 | $26,000 |
| **TOTAL EXPENSE** | **Transformer Shop** | | | **$904,920** |

## *Department* 37 Automotive Shop

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **010** | **District Overtime Labor** | | | **$8,755** |
| | Labor - Overtime - Automotive Shop | 184.11 | | $8,755 |
| **011** | **All Other District Labor** | | | **$358,362** |
| | Labor - Automotive Shop | 184.12 | | $305,410 |
| | Labor - Distribution | 588.00 | | $2,576 |
| | Labor - Inventory | 163.00 | | $205 |
| | Labor - Leave | 184.30 | | $50,171 |
| **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 |

***Department*** 37 Automotive Shop

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| | Vehicle Motor Maint (1) | 588.00 | | $1,000 |
| **TOTAL EXPENSE** | **Automotive Shop** | | | **$808,317** |

**Department** 38 Support Services

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **010** | **District Overtime Labor** | | | **$20,806** |
| | Labor - Overtime - Inventory | 163.00 | | $20,806 |
| **011** | **All Other District Labor** | | | **$396,018** |
| | Labor - Admin General | 920.00 | | $65,731 |
| | Labor - Broadband | 935.50 | | $324 |
| | Labor - Customer Accounting | 903.00 | | $141 |
| | Labor - Distribution | 588.00 | | $73,331 |
| | Labor - Inventory | 163.00 | | $198,181 |
| | Labor - Leave | 184.30 | | $55,442 |
| | Labor - Transmission | 566.00 | | $2,868 |
| **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** | | | **$22,000** |
| | Hazardous Waste Disposal | 588.00 | | $6,000 |
| | Transportation Expense - Oil Disposal | 588.00 | | $10,000 |
| | Universal Waste Disposal | 588.00 | | $6,000 |
| **027** | **Personal Computer Software** | | | **$3,000** |
| | MSDS Online | 588.00 | | $3,000 |
| **037** | **Grounds Care** | | | **$93,000** |
| | Admin Office | 921.00 | | $25,000 |
| | General Expenses - Admin | 921.00 | | $4,000 |
| | General Expenses - Operations | 588.00 | | $3,000 |
| | Operations | 588.00 | | $25,000 |
| | Property Clean-Up | 588.00 | | $4,000 |
| | Prosser | 935.04 | | $13,000 |
| | Substations | 588.00 | | $6,500 |
| | Tree Maintenance | 598.10 | | $12,500 |

**Department** 38 Support Services

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **038** | **Maint of Bldg & Improvements - General** | | | **$300,500** |
| | Carpet Cleaning (Admin) | 935.00 | | $5,000 |
| | 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 | | $56,000 |
| | Janitorial Services (Operations) | 588.00 | | $49,000 |
| | Janitorial Services (Prosser) | 935.04 | | $17,000 |
| | 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** | | | **$3,700** |
| | Audit Disposal Facility | 588.00 | | $1,000 |
| | Green House Gas Meeting | 588.00 | | $300 |
| | ICUEE | 588.00 | | $1,300 |
| | 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 |

***Department*** 38 Support Services

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| | Washington Dept of Ecology (RCRA) | 588.00 | | $700 |
| **045** | **Subscriptions & Publications** | | | **$500** |
| | Subscription & Publications | 588.00 | | $500 |
| **051** | **Water, Garbage, Irrigation & Other** | | | **$60,000** |
| | Benton County Property Tax | 935.00 | | $2,000 |
| | CID | 921.00 | | $2,000 |
| | KID | 921.00 | | $9,000 |
| | 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** | | | **$498,000** |
| | Asphalt Replacement Admin South Parking Lot | 390.00 | 277 | $180,000 |
| | Carpet Replacement - Customer Service Lobby | 390.00 | 280 | $30,000 |
| | Physical Security Audit Recommendations Phase 1 | 390.00 | 222 | $250,000 |
| | Pole Yard Gate - Operations | 390.01 | 65 | $20,000 |
| | Replace tile floor in Operations | 390.01 | 249 | $18,000 |
| **133** | **Transportation Equipment** | | | **$950,000** |
| | Forklift for Transformer Shop | 392.00 | 285 | $60,000 |
| | High Capacity Digger Derrick - Transmission Line Truck | 392.00 | 278 | $800,000 |
| | Small Bucket Truck for Emergency Standby | 392.00 | 281 | $90,000 |

**TOTAL EXPENSE Support Services** **$2,398,824**

***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** | | | **$78,000** |
| | Other Dist Exp | 588.00 | | $30,400 |
| | Stores Exp Undistributed | 163.00 | | $47,600 |
| **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** | | | | **$140,300** |

# Non-Departmental

**Tab 6**

**PUBLIC UTILITY DISTRICT NO. 1 OF BENTON COUNTY**
**2021 Budget**
**Summary of Expense by Directorate**

## Non-Departmental

| Department(s) | | Totals |
|---|---|---|
| 98 | Non-Departmental Rev/Exp | 35,846,360 |
| **Grand Total Expenses - Non-Departmental** | | $35,846,360 |

## Directorate Budget by Department and Activity
## 2021 Budget Compared to 2020 Budget

| Directorate | No Directorate |
|---|---|

| Department | Activity | 2021 Budget | 2020 Original Budget | Increase / (Decrease) | % Increase / (Decrease) |
|---|---|---|---|---|---|
| **98 - Non-Departmental Rev/Exp** | 1 - Contingency | $0 | ($695,000) | $695,000 | (100.0%) |
| | 11 - All Other District Labor | (100,000) | (100,000) | - | 0.0% |
| | 12 - Materials & Supplies | 64,500 | - | 64,500 | N/A |
| | 20 - Off-the-Dock Labor | 150,500 | - | 150,500 | N/A |
| | 80 - Public Utility & Excise Tax | 5,327,000 | 5,477,000 | (150,000) | (2.7%) |
| | 81 - State Privilege Tax | 2,720,000 | 2,801,000 | (81,000) | (2.9%) |
| | 82 - City Occupation Taxes | 6,184,000 | 6,411,000 | (227,000) | (3.5%) |
| | 88 - Payroll Taxes | 1,182,365 | 1,148,190 | 34,175 | 3.0% |
| | 101 - Employee Benefits | 5,361,679 | 5,672,155 | (310,476) | (5.5%) |
| | 150 - Principal | 3,115,000 | 3,940,000 | (825,000) | (20.9%) |
| | 151 - Interest | 2,073,130 | 1,815,464 | 257,666 | 14.2% |
| | 301 - Depreciation | 10,468,186 | 10,407,059 | 61,127 | 0.6% |
| | 545 - Other Electric Revenue | (700,000) | - | (700,000) | N/A |
| **98 - Non-Departmental Rev/Exp Total** | | **35,846,360** | **36,876,868** | **(1,030,508)** | **(2.8%)** |
| **Grand Total** | | **$35,846,360** | **$36,876,868** | **($1,030,508)** | **(2.8%)** |

***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) |
| **012** | **Materials & Supplies** | | | **$64,500** |
| | Airflow Spoiler Project | 397.30 | 132 | $19,500 |
| | Fiber Backbone & Laterals | 397.30 | 134 | $45,000 |
| **020** | **Off-the-Dock Labor** | | | **$150,500** |
| | Airflow Spoiler Project | 397.30 | 132 | $45,500 |
| | Fiber Backbone & Laterals | 397.30 | 134 | $105,000 |
| **080** | **State Public Utility Tax & Other Excise Taxes** | | | **$5,327,000** |
| | Other Excise Tax | 408.08 | | $89,000 |
| | Public Utility Tax | 408.06 | | $5,238,000 |
| **081** | **State Privilege Tax** | | | **$2,720,000** |
| | Privilege Tax | 408.05 | | $2,720,000 |
| **082** | **City Occupation Taxes** | | | **$6,184,000** |
| | City Occupation Tax | 408.07 | | $6,184,000 |
| **088** | **Payroll Taxes** | | | **$1,182,365** |
| | Medicare | 184.34 | | $227,231 |
| | Social Security | 184.34 | | $955,134 |
| **101** | **Employee Benefits** | | | **$5,361,679** |
| | Change in PL | 184.30 | | $150,000 |
| | Deferred Compensation | 184.40 | | $430,562 |
| | Dental | 184.36 | | $205,372 |
| | Life Insurance | 184.32 | | $72,573 |
| | Medical | 184.33 | | $2,196,543 |
| | PERS | 184.35 | | $1,762,752 |
| | State Industrial (L&I) | 184.31 | | $131,065 |
| | STD Admin Fee | 184.39 | | $3,000 |
| | Unemployment | 184.38 | | $13,000 |
| | VEBA Wellness ($200 per employee per month) | 184.40 | | $360,000 |
| | Vision | 184.44 | | $36,812 |

***Department*** 98 Non-Departmental Rev/Exp

| Activity | Description | GL/FERC | BU Project | Amount |
|---|---|---|---|---|
| **150** | **Principal** | | | **$3,115,000** |
| | Debt Service - Principal | 125.00 | | $3,115,000 |
| **151** | **Interest** | | | **$2,073,130** |
| | Amortization of Bond Loss/Gain on Defeasance | 428.00 | | $121,215 |
| | Amortization of Bond Premium | 429.00 | | ($539,636) |
| | BABs Subsidy for 2010 Bonds | 427.01 | | ($376,070) |
| | Bond Interest Expense | 427.00 | | $2,867,621 |
| **301** | **Depreciation Expense** | | | **$10,468,186** |
| | Depr - Broadband | 403.61 | | $1,031,186 |
| | Depr - Distribution | 403.60 | | $6,962,000 |
| | Depr - General Plant | 403.70 | | $1,845,000 |
| | Depr - Generation | 403.40 | | $84,000 |
| | Depr - Transmission | 403.50 | | $250,000 |
| | Depr - Transportation Equipment | 184.12 | | $296,000 |
| **545** | **Other Electric Revenue** | | | **($700,000)** |
| | Joint Use Deficiency Corrections - Pole Attachment Reimbursements | 590.10 | | ($700,000) |
| **TOTAL EXPENSE** | **Non-Departmental Rev/Exp** | | | **$35,846,360** |

# Activity Codes

Tab 6

**SYSTEM COSTS:**

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

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

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

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

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

Some examples of power sources are included here:

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

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

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

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

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

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

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

**14 Small Tools & Materials**

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

Some examples of expenses included here are:

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

**15 Transportation Expense - Gas & Oil**

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

**16 Transportation Expense - Repair & Maintenance**

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

**17 Operations & Maintenance Expense**

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

Some examples of expenses included here are:

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

*Miscellaneous materials and services for operations or maintenance of electric systems
*Repairs to private property

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

**18 Miscellaneous Construction Expense**

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

Some examples of expenses included here are:

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

**19 Tree Trimming - Contract**

Includes only those expenses for contracted tree trimming

**20 Off-the-Dock Labor**

Includes only contracted Off-the-Dock labor

**21 Electric Construction Contracts**

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

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

**22 Contract Temporary Labor**

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

**23 Environmental**

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

Some examples of expenses included here are:

*Fees paid to disposal firms

*Transportation costs
*Test kits
*Testing of materials
*Cleanup media
*Drums

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

**GENERAL EXPENSES:**

**25 Maintenance of Software**

**26 Computer Hardware & Equipment Expense**

**27 Personal Computer Software**

All personal computer software packages

**28 Personal Computer O & M Costs**

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

Some examples of expenses included here are:

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

**29 Personal Computer Supplies & Expenses**

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

**30 Customer Service Expenses**

Includes expenses attributable to Customer Service

Some examples of costs included here are:

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

**33 Office Supplies & Expenses**

Some examples of expenses included here are:

*Small items of office equipment - less than **$5,000** unit cost
*Paper and envelopes

*General use forms
*Pencils, pens, erasers, rulers and misc. scales

**34 Insurance**

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

**37 Grounds Care**

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

**38 Maintenance of Building & Improvements - General**

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

Some examples of expenses included here are:

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

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

Some examples of expenses that may be included here are:

*Cost of Maintenance Agreements/Office equipment maintenance repair
*Maintenance 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/Embarg - Prosser
*Verizon NW - Kennewick
*Kelley's Answering Service
*City of Prosser - Emergency Answering Service
*Washington State Central Stores - Scan lines
*Asplund - Utilities Underground Location Center

**51 Water, Garbage, Irrigation & Other**

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

Some examples of expenses included here are:

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

**OUTSIDE SERVICES:**

**60 Audit Examination - State**

**61 Professional Services**

Includes expenses for all professional services not budgeted elsewhere.

Some examples of expenses included here are:

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

**DUES & ASSESSMENTS:**

**70 Civic & Service Organizations**

**72 Industry Association Assessments**

Includes all assessments paid for membership in various industry associations.

**73 Other Assessments**

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

**TAXES:**

**80 State Public Utility Tax & Other Excise Taxes**

**81 State Privilege Tax**

**82 City Occupation Taxes**

**88 Payroll Taxes**

**EMPLOYEE BENEFITS:**

**101 Employee Benefits**

**102 GASB Pension Expense**

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

**106 Vacation Accrual**

**CONSERVATION:**

**107 Residential Loans**

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

**109 Conservation Advertising**
Includes all conservation advertising costs

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

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

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

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

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

**116 Non-Federally Funded Conservation**

Includes non-BPA reimbursable program expenses only for Washington State licensed marijuana facility conservation projects

**117 Residential Appliances**

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

# 2021 BUDGET
# FINANCIAL PLAN - KEY ASSUMPTIONS

The Financial Plan for 2021 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 2021 Budget reflects no rate increase.
- Retail energy sales are based on the medium case of the Retail Energy Load Ten-Year Forecast, 2020-2029, approved by the Commission on May 12, 2020 (see Tab 8).
- Sales for Resale are consistent with the 2021 Power Supply Plan.

## POWER & TRANSMISSION COSTS *(see Tab 10, 2021 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 25$^{th}$ 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 25$^{th}$ 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 $3.5 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 2021.
  - 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**

- In 2020, the District issued $20 million in new bonds to provide funds for capital improvements to the Electric System
- 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
# 2021 Budget

| | 2019 Actual | 2020 Forecast | 2021 Budget |
|---|---|---|---|
| **Revenue Action Budget Assumption** *For planning purposes only, any future rate action would require Commission approval* | | | **0.00%** |
| **OPERATING REVENUES** | | | |
| Energy Sales - Retail | $ 134,197,387 | $ 132,663,634 | $ 132,983,984 |
| Energy Secondary Market Sales | 22,649,146 | 22,628,675 | 22,527,727 |
| Transmission of Power for Others | 1,483,740 | 1,086,926 | 900,000 |
| Broadband Revenue | 2,476,304 | 2,538,253 | 2,921,407 |
| Other Electric Revenue | 1,690,616 | 1,523,700 | 1,415,720 |
| **TOTAL OPERATING REVENUES** | 162,497,194 | 160,441,188 | 160,748,838 |
| **OPERATING EXPENSES** | | | |
| Purchased Power | 101,774,951 | 90,513,208 | 89,894,685 |
| Purchased Transmission & Ancillary Services | 13,828,577 | 14,704,528 | 14,689,033 |
| Conservation | 377,442 | 467,378 | 325,298 |
| Total Power Supply | 115,980,971 | 105,685,114 | 104,909,017 |
| Transmission Operation & Maintenance | 129,425 | 165,973 | 164,242 |
| Distribution Operation & Maintenance | 9,923,011 | 11,515,097 | 12,343,707 |
| Broadband Expense | 1,061,880 | 1,126,296 | 1,166,295 |
| Customer Accounting, Collections & Information | 4,328,333 | 4,783,472 | 4,705,890 |
| Administrative & General | 6,798,593 | 7,925,972 | 8,412,372 |
| Subtotal before Taxes & Depreciation | 22,241,242 | 25,516,810 | 26,792,505 |
| Taxes | 14,216,802 | 14,088,000 | 14,231,000 |
| Depreciation & Amortization | 10,183,035 | 10,196,236 | 10,172,186 |
| Total Other Operating Expenses | 46,641,079 | 49,801,046 | 51,195,691 |
| **TOTAL OPERATING EXPENSES** | 162,622,050 | 155,486,160 | 156,104,708 |
| **OPERATING INCOME (LOSS)** | (124,856) | 4,955,028 | 4,644,130 |
| **NONOPERATING REVENUES & EXPENSES** | | | |
| Interest Income | 1,031,048 | 310,000 | 350,000 |
| Unrealized Gain/(Loss) on Investments | 14,260 | | |
| Other Income (includes BABs subsidy) | 409,124 | 376,070 | 376,070 |
| Interest Expense | (2,484,359) | (2,591,154) | (2,907,621) |
| Debt Premium/Discount & Expense Amortization | 407,817 | (135,973) | 418,421 |
| **TOTAL NONOPERATING REVENUES & EXPENSES** | (622,110) | (2,041,057) | (1,763,130) |
| **NET INCOME (LOSS) BEFORE CONTRIBUTIONS** | (746,966) | 2,913,971 | 2,881,000 |
| **CAPITAL CONTRIBUTIONS** | 2,455,560 | 1,988,283 | 2,451,526 |
| **CHANGE IN NET ASSETS** | **$ 1,708,594** | **$ 4,902,254** | **$ 5,332,526** |
| **CAPITAL REQUIREMENTS PLAN (Gross)** | **$ 21,387,603** | **$ 17,987,462** | **$ 21,268,501** |
| **UNRESTRICTED RESERVES (End of Year)** | **$ 41,485,680** | **$ 57,303,348** | **$ 49,010,525** |

# Liquidity Measures
# Public Utility District No. 1 of Benton County
# 2021 Budget

| Unrestricted Reserves | 2019 Actual | 2020 Forecast | 2021 Budget |
|---|---|---|---|
| BEGINNING BALANCE | $ 56,296,378 | $ 41,485,680 | $ 57,303,348 |
| Revenues (excluding sales for resale) | 139,818,740 | 137,411,657 | 138,047,181 |
| Capital Contributions | 2,455,560 | 1,988,283 | 2,451,526 |
| Operating Expenses* | (130,448,928) | (111,566,671) | (122,504,795) |
| Amortization of White Creek | 578,400 | 578,400 | 578,400 |
| Debt Service and LOC | (6,557,154) | (6,194,946) | (6,035,376) |
| Gross Capital | (21,387,603) | (17,987,462) | (21,268,501) |
| BPA Prepay | 438,742 | 438,742 | 438,742 |
| Capitalized Interest | 291,545 | - | - |
| Bond Proceeds to Reimburse Capital | | 20,007,652 | 10,000,000 |
| Estimated Capital reimbursed from bond proceeds | | (10,007,652) | (10,000,000) |
| Carry Over/Timing of Cash Flow Expenditures | | 1,149,665 | |
| **ENDING BALANCE** | **$ 41,485,680** | **$ 57,303,348** | **$ 49,010,525** |

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

| Days Cash on Hand | 2019 Actual | 2020 Forecast | 2021 Budget |
|---|---|---|---|
| Unrestricted Reserves | $ 41,485,680 | $ 47,303,348 | $ 49,010,525 |
| Construction Account | - | 10,000,000 | - |
| Total Reserves | 41,485,680 | 57,303,348 | 49,010,525 |
| Gross Power Expense | 115,980,971 | 105,685,114 | 104,909,017 |
| Non-Power Operating Expenses | 46,641,079 | 49,801,046 | 51,195,691 |
| Depreciation | (10,183,035) | (10,196,236) | (10,172,186) |
| Amortization of White Creek/BPA Prepay | (1,017,142) | (1,017,142) | (1,017,142) |
| Operating Expenses (cash basis) | $ 151,421,873 | $ 144,272,782 | $ 144,915,380 |
| **DAYS CASH ON HAND (Unrestricted Reserves)** | **101** | **120** | **123** |
| **DAYS CASH ON HAND (Construction Account)** | **0** | **25** | **0** |
| **TOTAL DAYS CASH ON HAND** | **101** | **145** | **123** |

| Days Liquidity on Hand | 2019 Actual | 2020 Forecast | 2021 Budget |
|---|---|---|---|
| Unrestricted Reserves + $10M LOC | $ 51,485,680 | $ 57,303,348 | $ 59,010,525 |
| Operating Expenses (cash basis) | 151,421,873 | 144,272,782 | 144,915,380 |
| **DAYS LIQUIDITY ON HAND** | **124** | **145** | **149** |

# Debt Measures
# Public Utility District No. 1 of Benton County
# 2021 Budget

| Debt Service Coverage | 2019 Actual | 2020 Forecast | 2021 Budget |
|---|---|---|---|
| Change in Net Assets | $ 1,708,594 | $ 4,902,254 | $ 5,332,526 |
| Depreciation | 10,183,035 | 10,196,236 | 10,172,186 |
| Amortization of White Creek | 578,400 | 578,400 | 578,400 |
| Amortization of BPA Prepay | 438,742 | 438,742 | 438,742 |
| GASB 68 Pension Expense | (1,322,339) | - | - |
| Interest Expense | 2,076,542 | 2,727,127 | 2,489,200 |
| Funds Available for Debt Service (FADS) | $ 13,662,974 | $ 18,842,759 | $ 19,011,054 |
| Debt Service | $ 6,521,487 | $ 6,154,946 | $ 5,995,376 |
| **DSC with capital contributions (Target = 2.0)** | **2.10** | **3.06** | **3.17** |
| **DSC without capital contributions (Target = 1.75)** | **1.72** | **2.74** | **2.76** |

| Fixed Charge Coverage | 2019 Actual | 2020 Forecast | 2021 Budget |
|---|---|---|---|
| Change in Net Assets | $ 1,708,594 | $ 4,902,254 | $ 5,332,526 |
| Depreciation | 10,183,035 | 10,196,236 | 10,172,186 |
| Amortization of White Creek | 578,400 | 578,400 | 578,400 |
| Amortization of BPA Prepay | 438,742 | 438,742 | 438,742 |
| GASB 68 Pension Expense | (1,322,339) | - | - |
| Interest Expense | 2,076,542 | 2,727,127 | 2,489,200 |
| Frederickson Fixed Costs | 7,880,049 | 7,946,402 | 8,026,976 |
| 36% of BPA Power & Transmission | 24,504,986 | 25,798,881 | 26,200,374 |
| Adjusted FADS | $ 46,048,009 | $ 52,588,042 | $ 53,238,404 |
| Debt Service | $ 6,521,487 | $ 6,154,946 | $ 5,995,376 |
| Frederickson Fixed Costs | 7,880,049 | 7,946,402 | 8,026,976 |
| 36% of BPA Power & Transmission | 24,504,986 | 25,798,881 | 26,200,374 |
| Debt Service & Fixed Charges | $ 38,906,522 | $ 39,900,229 | $ 40,222,726 |
| **FCC Ratio (Target = 1.3)** | **1.18** | **1.32** | **1.32** |

| Debt Ratio | 2019 Actual | 2020 Forecast | 2021 Budget |
|---|---|---|---|
| Revenue Bonds Outstanding | $ 49,585,000 | $ 62,898,333 | $ 59,783,333 |
| Capitalization (bonds + net assets) | $ 185,193,164 | $ 203,408,751 | $ 205,626,277 |
| **Debt Ratio** | **27%** | **31%** | **29%** |

## Public Utility District No. 1 Of Benton County, Washington
## 2020 - 2024 Retail Revenue and Kilowatt Hours (kWh) Forecast
**(Medium Case, October 2020 Forecast)**

| Forecast - 2020 Medium Case | Revenues | kWh |
|---|---|---|
| Residential | $62,170,731 | 706,313,715 |
| Small Gen. Service | 8,527,126 | 110,174,666 |
| Medium Gen. Service | 12,117,827 | 166,931,146 |
| Large Gen. Service | 14,011,118 | 214,766,952 |
| Large Industrial | 3,472,867 | 64,233,598 |
| Small Ag Irrigation | 1,096,321 | 15,959,224 |
| Large Ag. Irrigation | 25,019,773 | 444,800,717 |
| Street Lighting | 219,900 | 2,543,166 |
| Security Lighting | 266,855 | 941,168 |
| Unmetered Accounts | 214,118 | 3,018,284 |
| **TOTAL** | **$127,116,635** | **1,729,682,635** |

| Forecast - 2021 Medium Case | Revenues | kWh |
|---|---|---|
| Residential | $65,055,347 | 741,545,182 |
| Small Gen. Service | 8,622,469 | 111,460,791 |
| Medium Gen. Service | 11,937,251 | 163,389,884 |
| Large Gen. Service | 13,406,752 | 204,141,576 |
| Large Industrial | 3,563,218 | 65,834,308 |
| Small Ag Irrigation | 991,801 | 14,571,077 |
| Large Ag. Irrigation | 22,744,246 | 410,524,949 |
| Street Lighting | 219,326 | 2,545,809 |
| Security Lighting | 297,762 | 969,265 |
| Unmetered Accounts | 210,958 | 2,971,233 |
| **TOTAL** | **$127,049,130** | **1,717,954,075** |

| Forecast - 2022 Medium Case | Revenues | kWh |
|---|---|---|
| Residential | $65,425,805 | 744,280,342 |
| Small Gen. Service | 9,100,873 | 118,402,582 |
| Medium Gen. Service | 12,657,588 | 173,599,761 |
| Large Gen. Service | 14,167,949 | 215,815,664 |
| Large Industrial | 3,563,218 | 65,834,308 |
| Small Ag Irrigation | 986,854 | 14,499,076 |
| Large Ag. Irrigation | 22,744,246 | 410,524,949 |
| Street Lighting | 219,326 | 2,545,809 |
| Security Lighting | 297,762 | 969,265 |
| Unmetered Accounts | 210,958 | 2,971,233 |
| **TOTAL** | **$129,374,579** | **1,749,442,990** |

| Forecast - 2023 Medium Case | Revenues | kWh |
|---|---|---|
| Residential | $65,949,817 | 749,163,387 |
| Small Gen. Service | 9,597,633 | 125,630,781 |
| Medium Gen. Service | 13,405,991 | 184,210,228 |
| Large Gen. Service | 14,959,537 | 227,949,543 |
| Large Industrial | 3,563,218 | 65,834,308 |
| Small Ag Irrigation | 982,225 | 14,432,007 |
| Large Ag. Irrigation | 22,642,067 | 410,524,949 |
| Street Lighting | 219,326 | 2,545,809 |
| Security Lighting | 297,762 | 969,265 |
| Unmetered Accounts | 210,958 | 2,971,233 |
| **TOTAL** | **$131,828,534** | **1,784,231,511** |

| Forecast - 2024 Medium Case | Revenues | kWh |
|---|---|---|
| Residential | $66,502,721 | 754,481,468 |
| Small Gen. Service | 9,762,260 | 127,855,389 |
| Medium Gen. Service | 13,630,626 | 187,383,506 |
| Large Gen. Service | 15,133,634 | 230,646,772 |
| Large Industrial | 3,573,358 | 66,022,394 |
| Small Ag Irrigation | 977,752 | 14,367,146 |
| Large Ag. Irrigation | 22,515,845 | 410,535,795 |
| Street Lighting | 219,326 | 2,553,375 |
| Security Lighting | 297,762 | 972,183 |
| Unmetered Accounts | 211,582 | 2,980,024 |
| **TOTAL** | **$132,824,866** | **1,797,798,053** |

# Total kWh for 2020-2024

Actual (January - September 2020)

| Total kWh 2020 | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Residential | 80,434,695 | 74,289,190 | 59,722,751 | 54,472,823 | 40,553,069 | 45,225,460 | 52,943,517 | 65,031,269 | 55,803,408 | 42,075,738 | 52,829,527 | 82,932,268 | 706,313,715 |
| Small Gen. Service | 11,083,802 | 10,630,134 | 9,016,176 | 8,078,038 | 7,312,984 | 8,318,799 | 9,247,222 | 11,065,143 | 10,182,917 | 8,085,877 | 7,752,420 | 9,401,154 | 110,174,666 |
| Medium Gen. Service | 15,780,240 | 15,265,195 | 13,490,686 | 12,528,060 | 12,094,103 | 12,995,528 | 14,156,568 | 15,928,661 | 14,896,135 | 13,512,971 | 12,867,762 | 13,415,238 | 166,931,146 |
| Large Gen. Service | 19,088,440 | 19,196,040 | 17,613,400 | 17,127,860 | 15,836,480 | 16,705,280 | 17,399,280 | 20,403,280 | 20,221,640 | 18,406,649 | 16,899,424 | 15,869,180 | 214,766,952 |
| Large Industrial | 5,851,280 | 5,189,240 | 5,408,680 | 5,109,720 | 5,197,080 | 5,092,840 | 5,809,480 | 5,820,680 | 4,082,880 | 5,769,916 | 5,569,473 | 5,332,328 | 64,233,598 |
| Small Ag Irrigation | 60,118 | 63,966 | 377,142 | 1,530,700 | 1,963,526 | 2,497,637 | 3,196,238 | 3,178,318 | 2,137,220 | 953,527 | 831 | 1 | 15,959,224 |
| Large Ag. Irrigation | 272,045 | 768,662 | 15,567,631 | 40,514,804 | 56,465,954 | 83,576,924 | 100,993,458 | 84,398,542 | 37,440,661 | 21,838,614 | 2,707,925 | 255,496 | 444,800,717 |
| Street Lighting | 212,339 | 212,322 | 212,312 | 212,303 | 212,320 | 212,320 | 212,235 | 212,180 | 212,217 | 210,854 | 210,836 | 210,928 | 2,543,166 |
| Security Lighting | 77,796 | 77,778 | 77,607 | 77,560 | 77,450 | 77,444 | 77,477 | 77,184 | 76,386 | 81,523 | 81,489 | 81,474 | 941,168 |
| Unmetered Accounts | 259,485 | 252,398 | 237,371 | 257,607 | 248,205 | 244,164 | 259,734 | 253,890 | 257,561 | 249,006 | 249,431 | 249,431 | 3,018,284 |
| **TOTAL Retail kWh SALES:** | **133,120,240** | **125,944,925** | **121,723,756** | **139,909,475** | **139,961,171** | **174,946,396** | **204,295,209** | **206,369,147** | **145,311,025** | **111,184,674** | **99,169,118** | **127,747,499** | **1,729,682,635** |

| Total kWh 2021 | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Residential | 96,238,292 | 84,247,816 | 60,792,425 | 49,817,600 | 42,614,941 | 50,121,557 | 60,155,706 | 65,347,159 | 53,852,441 | 42,198,700 | 52,983,916 | 83,174,629 | 741,545,182 |
| Small Gen. Service | 10,321,914 | 9,700,647 | 7,860,974 | 7,939,607 | 8,172,337 | 9,297,729 | 10,253,680 | 11,073,213 | 10,074,060 | 8,525,026 | 8,219,121 | 10,022,483 | 111,460,791 |
| Medium Gen. Service | 13,912,820 | 13,474,953 | 11,563,380 | 12,088,843 | 12,313,695 | 13,574,364 | 14,451,899 | 15,193,609 | 14,603,032 | 14,254,348 | 13,649,571 | 14,309,368 | 163,389,884 |
| Large Gen. Service | 15,638,695 | 15,440,782 | 14,234,301 | 15,194,756 | 15,749,627 | 17,104,817 | 18,308,392 | 19,113,627 | 19,332,864 | 19,328,553 | 17,844,976 | 16,850,184 | 204,141,576 |
| Large Industrial | 5,677,746 | 5,306,344 | 5,564,669 | 5,582,384 | 5,194,945 | 5,615,280 | 5,436,326 | 5,935,258 | 4,897,133 | 5,753,479 | 5,553,607 | 5,317,137 | 65,834,308 |
| Small Ag Irrigation | 6 | 56 | 498,359 | 1,319,905 | 2,027,585 | 2,436,823 | 2,819,040 | 2,645,973 | 1,873,413 | 949,089 | 827 | 1 | 14,571,077 |
| Large Ag. Irrigation | 272,824 | 318,266 | 11,236,260 | 38,934,971 | 60,665,836 | 83,820,530 | 89,767,147 | 66,145,940 | 34,561,794 | 21,838,037 | 2,707,854 | 255,489 | 410,524,949 |
| Street Lighting | 216,058 | 216,012 | 216,040 | 215,933 | 210,309 | 210,252 | 210,040 | 210,223 | 210,198 | 210,229 | 210,212 | 210,303 | 2,545,809 |
| Security Lighting | 81,860 | 81,830 | 81,695 | 81,576 | 78,611 | 78,589 | 78,635 | 81,385 | 81,332 | 81,278 | 81,245 | 81,229 | 969,265 |
| Unmetered Accounts | 246,511 | 246,456 | 246,456 | 246,395 | 246,633 | 246,633 | 247,057 | 249,728 | 249,700 | 248,272 | 248,696 | 248,696 | 2,971,233 |
| **TOTAL Retail kWh SALES:** | **142,606,727** | **129,033,163** | **112,294,560** | **131,421,970** | **147,274,520** | **182,506,574** | **201,727,923** | **185,996,114** | **139,735,968** | **113,387,012** | **101,500,024** | **130,469,520** | **1,717,954,075** |

| Total kWh 2022 | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Residential | 96,593,263 | 84,558,561 | 61,016,656 | 50,001,350 | 42,772,124 | 50,306,428 | 60,377,588 | 65,588,190 | 54,051,074 | 42,354,348 | 53,179,345 | 83,481,415 | 744,280,342 |
| Small Gen. Service | 10,985,573 | 10,320,691 | 8,360,491 | 8,441,187 | 8,685,635 | 9,878,353 | 10,890,342 | 11,756,851 | 10,692,497 | 9,045,427 | 8,718,044 | 10,627,492 | 118,402,582 |
| Medium Gen. Service | 14,810,783 | 14,339,558 | 12,301,007 | 12,855,521 | 13,090,134 | 14,425,392 | 15,352,782 | 16,135,363 | 15,503,083 | 15,127,988 | 14,481,485 | 15,176,665 | 173,599,761 |
| Large Gen. Service | 16,565,593 | 16,350,137 | 15,067,306 | 16,078,379 | 16,659,792 | 18,087,151 | 19,353,342 | 20,197,820 | 20,422,778 | 20,411,585 | 18,838,818 | 17,782,963 | 215,815,664 |
| Large Industrial | 5,677,746 | 5,306,344 | 5,564,669 | 5,582,384 | 5,194,945 | 5,615,280 | 5,436,326 | 5,935,258 | 4,897,133 | 5,753,479 | 5,553,607 | 5,317,137 | 65,834,308 |
| Small Ag Irrigation | 6 | 56 | 495,896 | 1,313,383 | 2,017,566 | 2,424,782 | 2,805,110 | 2,632,898 | 1,864,156 | 944,399 | 823 | 1 | 14,499,076 |
| Large Ag. Irrigation | 272,824 | 318,266 | 11,236,260 | 38,934,971 | 60,665,836 | 83,820,530 | 89,767,147 | 66,145,940 | 34,561,794 | 21,838,037 | 2,707,854 | 255,489 | 410,524,949 |
| Street Lighting | 216,058 | 216,012 | 216,040 | 215,933 | 210,309 | 210,252 | 210,040 | 210,223 | 210,198 | 210,229 | 210,212 | 210,303 | 2,545,809 |
| Security Lighting | 81,860 | 81,830 | 81,695 | 81,576 | 78,611 | 78,589 | 78,635 | 81,385 | 81,332 | 81,278 | 81,245 | 81,229 | 969,265 |
| Unmetered Accounts | 246,511 | 246,456 | 246,456 | 246,395 | 246,633 | 246,633 | 247,057 | 249,728 | 249,700 | 248,272 | 248,696 | 248,696 | 2,971,233 |
| **TOTAL Retail kWh SALES:** | **145,450,218** | **131,737,911** | **114,586,477** | **133,751,080** | **149,621,586** | **185,093,390** | **204,518,369** | **188,933,656** | **142,533,745** | **116,015,043** | **104,020,127** | **133,181,390** | **1,749,442,990** |

| Total kWh 2023 | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Residential | 97,226,988 | 85,113,329 | 61,416,971 | 50,329,397 | 43,052,742 | 50,636,477 | 60,773,711 | 66,018,498 | 54,405,690 | 42,632,225 | 53,528,242 | 84,029,117 | 749,163,387 |
| Small Gen. Service | 11,704,300 | 10,992,458 | 8,901,897 | 8,985,048 | 9,242,426 | 10,508,433 | 11,581,510 | 12,499,319 | 11,364,424 | 9,563,252 | 9,168,869 | 11,118,844 | 125,630,781 |
| Medium Gen. Service | 15,783,189 | 15,276,215 | 13,100,425 | 13,686,757 | 13,932,290 | 15,348,819 | 16,330,697 | 17,158,054 | 16,480,877 | 15,997,482 | 15,233,644 | 15,881,780 | 184,210,228 |
| Large Gen. Service | 17,572,342 | 17,338,332 | 15,972,991 | 17,039,587 | 17,650,374 | 19,156,821 | 20,491,774 | 21,379,608 | 21,611,406 | 21,485,879 | 19,726,511 | 18,523,919 | 227,949,543 |
| Large Industrial | 5,677,746 | 5,306,344 | 5,564,669 | 5,582,384 | 5,194,945 | 5,615,280 | 5,436,326 | 5,935,258 | 4,897,133 | 5,753,479 | 5,553,607 | 5,317,137 | 65,834,308 |
| Small Ag Irrigation | 6 | 56 | 493,602 | 1,307,307 | 2,008,233 | 2,413,565 | 2,792,134 | 2,620,719 | 1,855,533 | 940,031 | 819 | 1 | 14,432,007 |
| Large Ag. Irrigation | 272,824 | 318,266 | 11,236,260 | 38,934,971 | 60,665,836 | 83,820,530 | 89,767,147 | 66,145,940 | 34,561,794 | 21,838,037 | 2,707,854 | 255,489 | 410,524,949 |
| Street Lighting | 216,058 | 216,012 | 216,040 | 215,933 | 210,309 | 210,252 | 210,040 | 210,223 | 210,198 | 210,229 | 210,212 | 210,303 | 2,545,809 |
| Security Lighting | 81,860 | 81,830 | 81,695 | 81,576 | 78,611 | 78,589 | 78,635 | 81,385 | 81,332 | 81,278 | 81,245 | 81,229 | 969,265 |
| Unmetered Accounts | 246,511 | 246,456 | 246,456 | 246,395 | 246,633 | 246,633 | 247,057 | 249,728 | 249,700 | 248,272 | 248,696 | 248,696 | 2,971,233 |
| **TOTAL Retail kWh SALES:** | **148,781,825** | **134,889,297** | **117,231,006** | **136,409,355** | **152,282,400** | **188,035,399** | **207,709,032** | **192,298,732** | **145,718,087** | **118,750,163** | **106,459,698** | **135,666,516** | **1,784,231,511** |

| Total kWh 2024 | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Residential | 97,917,173 | 85,717,523 | 61,852,952 | 50,686,670 | 43,358,360 | 50,995,930 | 61,205,125 | 66,487,143 | 54,791,899 | 42,934,858 | 53,908,222 | 84,625,614 | 754,481,468 |
| Small Gen. Service | 12,221,046 | 11,418,305 | 9,199,092 | 9,237,404 | 9,453,532 | 10,693,894 | 11,726,385 | 12,592,079 | 11,391,518 | 9,586,051 | 9,190,728 | 11,145,353 | 127,855,389 |
| Medium Gen. Service | 16,479,185 | 15,867,213 | 13,537,107 | 14,070,455 | 14,249,796 | 15,618,918 | 16,534,145 | 17,284,514 | 16,519,334 | 16,034,811 | 15,269,190 | 15,918,839 | 187,383,506 |
| Large Gen. Service | 18,260,102 | 17,923,581 | 16,427,040 | 17,434,088 | 17,966,878 | 19,401,352 | 20,648,530 | 21,434,899 | 21,558,960 | 21,433,737 | 19,678,640 | 18,478,966 | 230,646,772 |
| Large Industrial | 5,693,967 | 5,321,504 | 5,580,567 | 5,598,333 | 5,209,787 | 5,631,322 | 5,451,857 | 5,952,214 | 4,911,124 | 5,769,916 | 5,569,473 | 5,332,328 | 66,022,394 |
| Small Ag Irrigation | 6 | 55 | 491,384 | 1,301,432 | 1,999,208 | 2,402,718 | 2,779,586 | 2,608,941 | 1,847,193 | 935,806 | 815 | 1 | 14,367,146 |
| Large Ag. Irrigation | 272,831 | 318,274 | 11,236,557 | 38,936,000 | 60,667,439 | 83,822,744 | 89,769,519 | 66,147,688 | 34,562,707 | 21,838,614 | 2,707,925 | 255,496 | 410,535,795 |
| Street Lighting | 216,700 | 216,653 | 216,682 | 216,575 | 210,934 | 210,877 | 210,664 | 210,848 | 210,823 | 210,854 | 210,836 | 210,928 | 2,553,375 |
| Security Lighting | 82,107 | 82,077 | 81,941 | 81,822 | 78,847 | 78,826 | 78,872 | 81,630 | 81,576 | 81,523 | 81,489 | 81,474 | 972,183 |
| Unmetered Accounts | 247,241 | 247,185 | 247,185 | 247,124 | 247,363 | 247,363 | 247,788 | 250,467 | 250,439 | 249,006 | 249,431 | 249,431 | 2,980,024 |
| **TOTAL Retail kWh SALES:** | **151,390,358** | **137,112,371** | **118,870,506** | **137,809,902** | **153,442,144** | **189,103,944** | **208,652,471** | **193,050,422** | **146,125,574** | **119,075,177** | **106,866,752** | **136,298,430** | **1,797,798,053** |

# Total Revenue for 2020-2024

Actual (January - September 2020)

| Total Revenue 2020 | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Residential | $6,766,237 | $6,308,889 | $5,185,538 | $4,860,173 | $3,813,733 | $4,187,479 | $4,732,462 | $5,644,715 | $4,967,948 | $3,971,389 | $4,738,338 | $6,993,830 | $62,170,731 |
| Small Gen. Service | 837,023 | 807,275 | 693,779 | 638,792 | 584,808 | 654,973 | 713,016 | 837,262 | 778,845 | 639,700 | 614,358 | 727,294 | 8,527,126 |
| Medium Gen. Service | 1,148,096 | 1,087,822 | 973,288 | 912,935 | 867,033 | 941,858 | 1,027,282 | 1,166,633 | 1,097,284 | 988,737 | 934,662 | 972,198 | 12,117,827 |
| Large Gen. Service | 1,234,057 | 1,233,127 | 1,157,204 | 1,106,688 | 1,038,462 | 1,104,501 | 1,155,175 | 1,337,465 | 1,325,000 | 1,189,894 | 1,103,799 | 1,025,746 | 14,011,118 |
| Large Industrial | 306,179 | 281,399 | 292,204 | 279,813 | 285,950 | 281,322 | 303,992 | 305,154 | 236,473 | 309,064 | 300,100 | 291,216 | 3,472,867 |
| Small Ag Irrigation | 7,499 | 9,364 | 35,615 | 112,781 | 136,450 | 164,548 | 202,762 | 201,782 | 144,883 | 74,490 | 3,045 | 3,101 | 1,096,321 |
| Large Ag. Irrigation | 120,459 | 190,323 | 1,095,336 | 2,378,685 | 3,195,283 | 4,434,490 | 5,194,407 | 4,445,359 | 2,220,975 | 1,287,808 | 333,531 | 123,117 | 25,019,773 |
| Street Lighting | 18,350 | 18,348 | 18,346 | 18,346 | 18,350 | 18,350 | 18,313 | 18,331 | 18,335 | 18,277 | 18,277 | 18,277 | 219,900 |
| Security Lighting | 21,477 | 21,536 | 21,102 | 21,501 | 21,455 | 21,454 | 21,488 | 21,127 | 21,274 | 24,814 | 24,814 | 24,814 | 266,855 |
| Unmetered Accounts | 18,415 | 17,895 | 16,830 | 18,276 | 17,609 | 17,310 | 18,432 | 18,001 | 18,266 | 17,674 | 17,705 | 17,705 | 214,118 |
| **TOTAL REVENUE:** | **$10,477,792** | **$9,975,978** | **$9,489,242** | **$10,347,990** | **$9,979,133** | **$11,826,285** | **$13,387,329** | **$13,995,829** | **$10,829,283** | **$8,521,846** | **$8,088,629** | **$10,197,299** | **$127,116,635** |

| Total Revenue 2021 | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Residential | $7,977,515 | $7,004,237 | $5,359,472 | $4,520,123 | $4,018,933 | $4,545,829 | $5,317,908 | $5,702,712 | $4,824,784 | $3,994,559 | $4,763,399 | $7,025,874 | $65,055,347 |
| Small Gen. Service | 788,461 | 737,161 | 625,276 | 627,318 | 646,242 | 717,670 | 784,569 | 839,078 | 769,575 | 670,335 | 646,772 | 770,013 | 8,622,469 |
| Medium Gen. Service | 989,747 | 960,691 | 847,934 | 877,732 | 893,660 | 985,391 | 1,043,636 | 1,088,815 | 1,184,351 | 1,041,169 | 989,453 | 1,034,673 | 11,937,251 |
| Large Gen. Service | 995,468 | 991,000 | 932,573 | 992,383 | 1,036,041 | 1,119,317 | 1,194,804 | 1,242,984 | 1,399,263 | 1,249,121 | 1,165,134 | 1,088,664 | 13,406,752 |
| Large Industrial | 299,491 | 287,191 | 299,903 | 302,983 | 287,258 | 304,597 | 295,915 | 314,320 | 273,735 | 308,187 | 299,249 | 290,390 | 3,563,218 |
| Small Ag Irrigation | 3,083 | 2,787 | 42,478 | 97,289 | 135,037 | 157,459 | 178,473 | 168,705 | 126,241 | 74,139 | 3,027 | 3,082 | 991,801 |
| Large Ag. Irrigation | 117,016 | 133,739 | 809,978 | 2,172,884 | 3,291,121 | 4,378,015 | 4,604,166 | 3,500,281 | 1,992,627 | 1,287,776 | 333,525 | 123,117 | 22,744,246 |
| Street Lighting | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 219,326 |
| Security Lighting | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 297,762 |
| Unmetered Accounts | 17,502 | 17,498 | 17,498 | 17,494 | 17,511 | 17,511 | 17,541 | 17,731 | 17,729 | 17,627 | 17,657 | 17,657 | 210,958 |
| **TOTAL REVENUE:** | **$11,231,373** | **$10,177,394** | **$8,978,204** | **$9,651,297** | **$10,368,893** | **$12,268,880** | **$13,480,102** | **$12,917,717** | **$10,631,396** | **$8,686,005** | **$8,261,306** | **$10,396,561** | **$127,049,130** |

| Total Revenue 2022 | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Residential | $8,017,946 | $7,040,035 | $5,390,263 | $4,547,480 | $4,044,813 | $4,573,319 | $5,348,611 | $5,734,848 | $4,853,342 | $4,020,425 | $4,791,764 | $7,062,959 | $65,425,805 |
| Small Gen. Service | 833,996 | 779,655 | 659,928 | 662,060 | 681,812 | 757,657 | 828,323 | 885,950 | 812,076 | 706,386 | 681,351 | 811,680 | 9,100,873 |
| Medium Gen. Service | 1,051,387 | 1,020,326 | 899,819 | 931,275 | 947,829 | 1,045,074 | 1,106,540 | 1,154,162 | 1,255,290 | 1,102,868 | 1,047,728 | 1,095,292 | 12,657,588 |
| Large Gen. Service | 1,053,994 | 1,048,941 | 986,685 | 1,049,652 | 1,095,452 | 1,183,163 | 1,262,547 | 1,313,041 | 1,477,710 | 1,318,673 | 1,229,594 | 1,148,497 | 14,167,949 |
| Large Industrial | 299,491 | 287,191 | 299,903 | 302,983 | 287,258 | 304,597 | 295,915 | 314,320 | 273,735 | 308,187 | 299,249 | 290,390 | 3,563,218 |
| Small Ag Irrigation | 3,064 | 2,770 | 42,264 | 96,805 | 134,365 | 156,677 | 177,587 | 167,868 | 125,614 | 73,769 | 3,008 | 3,063 | 986,854 |
| Large Ag. Irrigation | 117,016 | 133,739 | 809,978 | 2,172,884 | 3,291,121 | 4,378,015 | 4,604,166 | 3,500,281 | 1,992,627 | 1,287,776 | 333,525 | 123,117 | 22,744,246 |
| Street Lighting | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 219,326 |
| Security Lighting | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 297,762 |
| Unmetered Accounts | 17,502 | 17,498 | 17,498 | 17,494 | 17,511 | 17,511 | 17,541 | 17,731 | 17,729 | 17,627 | 17,657 | 17,657 | 210,958 |
| **TOTAL REVENUE:** | **$11,437,486** | **$10,373,246** | **$9,149,430** | **$9,823,723** | **$10,543,252** | **$12,459,103** | **$13,684,321** | **$13,131,291** | **$10,851,212** | **$8,878,803** | **$8,446,966** | **$10,595,746** | **$129,374,579** |

| Total Revenue 2023 | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Residential | $8,078,540 | $7,093,472 | $5,433,629 | $4,585,076 | $4,079,375 | $4,611,112 | $5,391,751 | $5,780,532 | $4,893,000 | $4,054,883 | $4,831,042 | $7,117,405 | $65,949,817 |
| Small Gen. Service | 883,128 | 825,530 | 697,304 | 699,553 | 720,212 | 800,871 | 875,637 | 936,668 | 858,070 | 742,213 | 712,689 | 845,757 | 9,597,633 |
| Medium Gen. Service | 1,118,077 | 1,084,877 | 955,991 | 989,269 | 1,006,522 | 1,109,775 | 1,174,761 | 1,225,064 | 1,332,295 | 1,164,259 | 1,100,447 | 1,144,655 | 13,405,991 |
| Large Gen. Service | 1,117,550 | 1,111,894 | 1,045,505 | 1,111,936 | 1,160,099 | 1,252,671 | 1,336,336 | 1,389,389 | 1,563,249 | 1,387,665 | 1,287,185 | 1,196,057 | 14,959,537 |
| Large Industrial | 299,491 | 287,191 | 299,903 | 302,983 | 287,258 | 304,597 | 295,915 | 314,320 | 273,735 | 308,187 | 299,249 | 290,390 | 3,563,218 |
| Small Ag Irrigation | 3,044 | 2,752 | 42,063 | 96,352 | 133,738 | 155,947 | 176,760 | 167,086 | 125,027 | 73,422 | 2,989 | 3,044 | 982,225 |
| Large Ag. Irrigation | 118,098 | 134,970 | 814,085 | 2,144,293 | 3,266,733 | 4,444,906 | 4,661,238 | 3,474,811 | 1,958,596 | 1,249,686 | 292,649 | 82,001 | 22,642,067 |
| Street Lighting | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 219,326 |
| Security Lighting | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 297,762 |
| Unmetered Accounts | 17,502 | 17,498 | 17,498 | 17,494 | 17,511 | 17,511 | 17,541 | 17,731 | 17,729 | 17,627 | 17,657 | 17,657 | 210,958 |
| **TOTAL REVENUE:** | **$11,678,521** | **$10,601,275** | **$9,349,069** | **$9,990,046** | **$10,714,539** | **$12,740,481** | **$13,973,031** | **$13,348,690** | **$11,064,793** | **$9,041,034** | **$8,586,998** | **$10,740,058** | **$131,828,534** |

| Total Revenue 2024 | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Residential | $8,143,031 | $7,150,313 | $5,479,356 | $4,624,566 | $4,115,510 | $4,650,811 | $5,437,222 | $5,828,771 | $4,934,725 | $4,090,891 | $4,872,347 | $7,175,177 | $66,502,721 |
| Small Gen. Service | 918,836 | 855,071 | 718,455 | 717,687 | 735,660 | 814,574 | 886,699 | 944,276 | 861,280 | 745,186 | 715,554 | 848,982 | 9,762,260 |
| Medium Gen. Service | 1,165,935 | 1,125,757 | 986,883 | 1,016,281 | 1,028,943 | 1,129,024 | 1,189,332 | 1,234,252 | 1,335,772 | 1,167,356 | 1,103,383 | 1,147,708 | 13,630,626 |
| Large Gen. Service | 1,160,996 | 1,149,215 | 1,075,050 | 1,137,567 | 1,180,840 | 1,268,657 | 1,346,610 | 1,393,090 | 1,559,614 | 1,384,459 | 1,284,220 | 1,193,316 | 15,133,634 |
| Large Industrial | 300,343 | 288,008 | 300,757 | 303,845 | 288,075 | 305,464 | 296,757 | 315,215 | 274,514 | 309,064 | 300,100 | 291,216 | 3,573,358 |
| Small Ag Irrigation | 3,025 | 2,735 | 41,869 | 95,914 | 133,132 | 155,241 | 175,961 | 166,330 | 124,461 | 73,087 | 2,971 | 3,025 | 977,752 |
| Large Ag. Irrigation | 75,833 | 92,705 | 771,838 | 2,144,348 | 3,266,817 | 4,445,022 | 4,661,360 | 3,474,901 | 1,958,646 | 1,249,717 | 292,655 | 82,002 | 22,515,845 |
| Street Lighting | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 18,277 | 219,326 |
| Security Lighting | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 24,814 | 297,762 |
| Unmetered Accounts | 17,554 | 17,550 | 17,550 | 17,546 | 17,563 | 17,563 | 17,593 | 17,783 | 17,781 | 17,679 | 17,710 | 17,710 | 211,582 |
| **TOTAL REVENUE:** | **$11,828,644** | **$10,724,444** | **$9,434,848** | **$10,100,844** | **$10,809,631** | **$12,829,447** | **$14,054,624** | **$13,417,708** | **$11,109,884** | **$9,080,532** | **$8,632,032** | **$10,802,227** | **$132,824,866** |

# Retail Energy Sales Forecast

**Tab 8**

Public Utility District No. 1 of Benton County

# Ten-Year Load & Customer Forecast 2020-2029

### Impact of the COVID-19 pandemic

The Ten-Year Load & Customer Forecast (Forecast) results do not consider the impacts of the COVID-19 pandemic. The Forecast's modeling outputs, provided to the District by The Energy Authority, were finalized as of 2/24/20 and the Forecast results were presented to Executive Team on 3/3/20, prior to the Washington State Governor's orders that are expected to impact District loads;

- Statewide school closure announced on 3/13/20, to become effective 3/17/20
- Stay Home – Stay Healthy Order announced on 3/23/20, to become effective 3/25/20

In the short-term (1-2 years), assuming an economic downturn, it's likely the "as-is" forecast will overestimate load and new customer growth; therefore, the District may need to continually adjust its short-term forecasts as more data becomes available to assess the impact of the pandemic.

In the long-term (5-10 years), assuming an economic downturn and then recovery, it's expected the "as-is" forecast remains a reasonable estimate at this time.

The District adopts a new Forecast every year, so although this static Forecast does not currently address the impacts of the COVID-19 pandemic, the District will necessarily incorporate the impact into next year's Forecast.

## Contents

# Tables



# Figures

## 1. Executive Summary

The Ten-Year Load and Customer Forecast 2020-2029 (Forecast) provides an estimate of the District's annual and monthly load and customer counts for each customer class and for 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 2020-2029 Forecast:

1) Uses regression modeling to relate historical retail load to economic and weather variables.
   a) Economic variables include the 2019 Woods & Poole projections of county population, employment, number of households and total retail sales.
   b) Weather variables include the twelve-year average of heating degree days, cooling degree days and precipitation.
2) Includes 3.0 aMW of incremental cumulative conservation out of the 11.6 aMW identified by the 2019 Conservation Potential Assessment's ten-year cost-effective potential. The remaining 8.6 aMW is assumed to be accounted for by the regression trending of historical actuals.
3) Does not explicitly forecast growth in customer generation, electricity intensive loads (EIL) or electric vehicles (EV's) because each currently represents a relatively small component of the total system load. Additionally, due to the uncertainty of potential 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 203.0 aMW in 2020 and the 5-year and 10-year annual average rates of growth to be 0.21% and 0.17%, respectively. The Forecast for calendar year 2020 is about 0.4 aMW higher than was estimated by the 2019 forecast, but overall the 2020 Forecast is about the same as the 2019 forecast, especially over the first five years. The Forecast expects a total system retail load of 206.2 aMW in 2029, as shown in **Figure 1-1.**

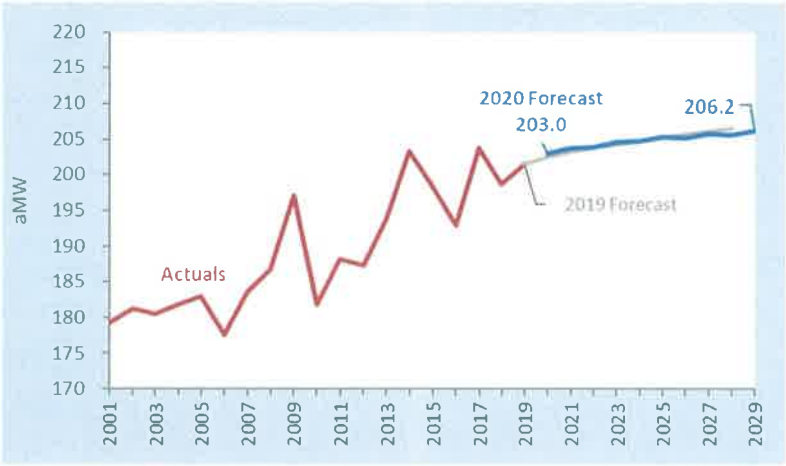


***Figure 1-1 – Total system retail load comparison of 2020 Forecast to 2019 Forecast***

The Forecast expects continued strong growth in the District's number of customers, with the total system number of customers forecast to increase by 798 customers in 2020, similar to the increase of 790 customers that occurred in 2019. The expected annual increase reduces over the forecast period to 721 customers in 2029. The total system annual customer count increase is shown in **Figure 1-2**.

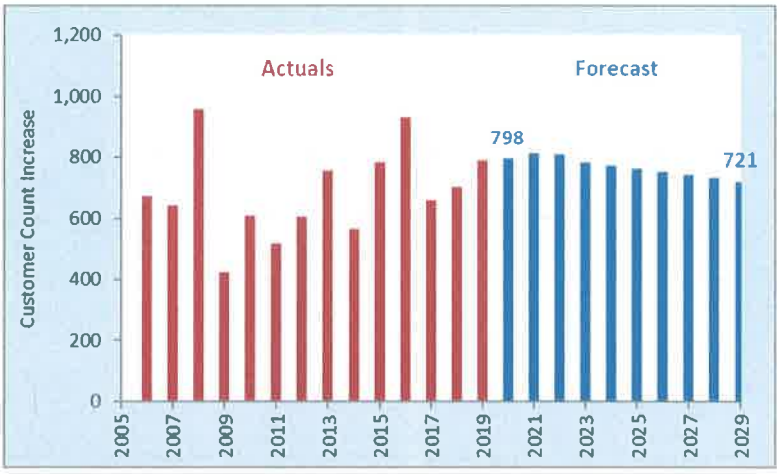


***Figure 1-2 – Total system annual customer count increase***

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 32.2 MWh/customer in 2020 to 29.0 MWh/customer in 2029, as shown below in **Figure 1-3**.

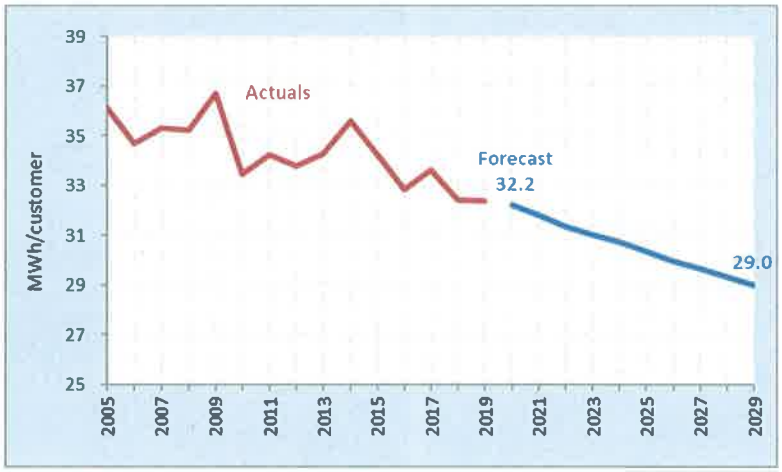


***Figure 1-3 – Total system annual energy usage per customer***

# 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) and average annual number of customers. The Forecast inputs include historical load and average annual customer counts by customer class, plus historical and forecast weather and economic data. Regression modeling is used to establish a relationship between annual load, weather and economic variables as well as between the annual average customer count and the economic variables. The regression modeling results in a forecast for each customer class that is then combined with the conservation forecast and any manual adjustments as determined by Staff. 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

Economic variables are a key input for the Forecast's regression modeling. The Energy Authority (TEA) subscribes to Woods & Poole Economic Forecasts, which are updated annually. The statements below from Woods & Poole provide a summary of their economic data, as described by *Technical Description of the Woods & Poole Economics, Inc. 2019 Regional Projections and Database:*

- "The Woods & Poole Economics, Inc. database contains more than 900 economic and demographic variables for every county in the United States for every year from 1970 to 2050. This comprehensive database includes detailed population data by age, sex, and race; employment and earnings by major industry; personal income by source of income; retail sales by kind of business; and data on the number of households, their size, and their income. All of these variables are projected for each year through 2050."
- "The strength of Woods & Poole's economic and demographic projections stems from the comprehensive historical county database and the integrated nature of the projection methods. The projection for each county in the United States is done simultaneously so that changes in one county will affect growth or decline in other counties.

**Table 2-2** identifies the four Woods & Poole economic variables for Benton County that are utilized for the Forecast's regression modeling.

***Table 2-2 – Woods & Poole economic variables utilized for regression modeling***

| Economic Variable |
|---|
| Total population (in thousands) |
| Total employment (in thousands of jobs) |
| Total number of households (in thousands) |
| Total retail sales, including eating and drinking places sales (in millions of 2009 dollars) |

In order to adjust the Benton County variables to more closely represent the District's service territory, estimates for the City of Richland and West Richland are gathered by various sources such as the Washington State Office of Financial Management's (OFM) website and Google Public Data Explorer, and backed out of the Benton County data totals. **Figure 2-1** shows the values of the economic variables from the years 2000 to 2029 for the District's service territory estimate.


***Figure 2-1 – Estimates of economic variables from 2000-2029 for the District's service territory***

## 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 2-3** identifies the three weather variables that are utilized.

***Table 2-3 – Types of weather variables utilized for regression modeling***

| Weather Variable |
|---|
| Heating degree days (HDD)[1] |
| Cooling degree days (CDD)[1] |
| Precipitation inches |

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 used 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 2-2** and **Figure 2-3** show the annual historical values for degree days and precipitation, respectively, including the twelve-year average. **Table 2-4** summarizes the twelve-year minimum, average and maximum values for the weather variables.

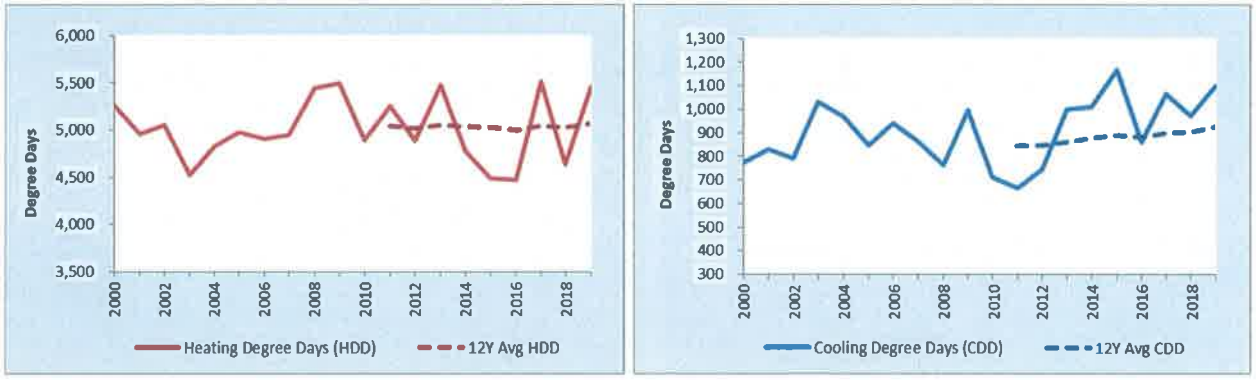


***Figure 2-2 – Annual heating and cooling degree days from 2000-2019 at Tri-Cities Airport***

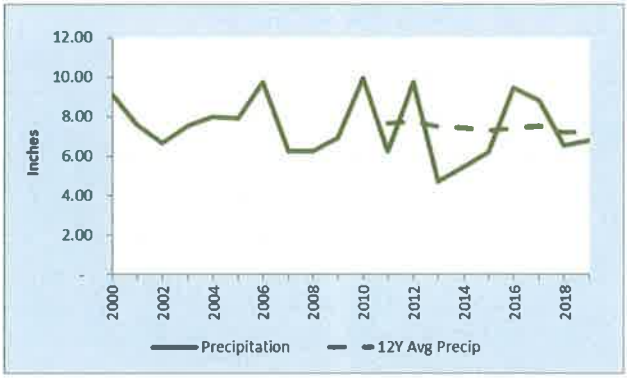


***Figure 2-3 – Annual precipitation from 2000-2019 at Tri-Cities Airport***

*Table 2-4 – 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] | 4,474 | 5,065 | 5,512 |
| Cooling degree days (CDD)[1] | 665 | 922 | 1,168 |
| Precipitation inches | 4.72 | 7.26 | 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 economic and weather variables to produce a forecast. The District provides historical data and average weather assumptions to the Energy Authority (TEA), who the District has contracted with to perform the regression modeling. TEA runs the models they have developed using MATLAB® software and returns the model output to the District.

The relationship between the annual historical load and customer data and the annual economic and weather variables is determined by partial least squares (PLS) regression. This is a typical approach when constructing predictive models with factors that are highly correlated, as is the case when dealing with econometric factors. PLS regression is a technique that generalizes and combines features from principal component analysis and multiple regressions. It is particularly useful when it is necessary to predict a set of dependent variables from a large set of independent variables. PLS regression tends to outperform multiple linear regressions when there are many variables because it avoids over-fitting the data. An over fit model is one that is too complicated for the data set and can result in misleading forecasts of future behavior.

TEA utilizes separate regression models for load and customer forecasts for each customer class. **Table 2-5** for the load forecast and
**Table** 2-6 for the customer forecast summarize the input variables used by TEA's regression models. In some cases, District staff has overridden the model output (see Section 2.7 – Manual Adjustment); however, this section is intended to document the "as-is" status of the TEA models, which have evolved over time.

*Table 2-5 – Load forecast regression model variables by customer class*

| | | Economic | | | | Weather | | |
|---|---|---|---|---|---|---|---|---|
| Customer Class | Input Years | Population | Employment | Households | Retail Sales | HDD | CDD | Precip |
| Residential | 2000-2019 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Small General | 2000-2019 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Medium General | 2000-2019 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Large General | 2001-2019 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Large Industrial | 2002-2019 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Small Irrigation | 2000-2019 | ✓ | ✓ | ✓ | ✓ | ✗ | ✓ | ✓ |
| Large Irrigation | 2000-2019 | ✓ | ✓ | ✓ | ✓ | ✗ | ✓ | ✓ |
| Street Lights | 2013-2019 | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ |
| Security Lights | 2000-2019 | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Unmetered Flats | 2006-2019 | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |

*Table 2-6 – Customer forecast regression model variables by customer class*

| | | Economic | | | | Weather | | |
|---|---|---|---|---|---|---|---|---|
| Customer Class | Input Years | Population | Employment | Households | Retail Sales | HDD | CDD | Precip |
| Residential | 2005-2019 | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ |
| Small General | 2005-2019 | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ |
| Medium General | 2005-2019 | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ |
| Large General | 2005-2019 | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ |
| Large Industrial | 2005-2019 | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ |
| Small Irrigation | 2005-2019 | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Large Irrigation | 2017-2019 | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ |
| Street Lights | 2013-2019 | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ |
| Security Lights | 2017-2019 | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Unmetered Flats | 2017-2019 | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |

## 2.7 Monthly Shaping

The regression modeling uses annual historical loads and annual economic and weather variables. To create a monthly forecast, the annual forecast values are shaped using a five-year average of the percentage of the month's billed retail load compared to the annual billed retail load. Monthly regression modeling would be preferred, but currently the District's historical data is limited to the month billed rather than aligned with the actual month when the usage occurred. 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 in the future, which would deliver significant improvements to the regression modeling.

## 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 was used as the input for the 2020 Forecast. **Figure 2-4** shows the historical achieved conservation from 2010 to 2019 by customer sector.

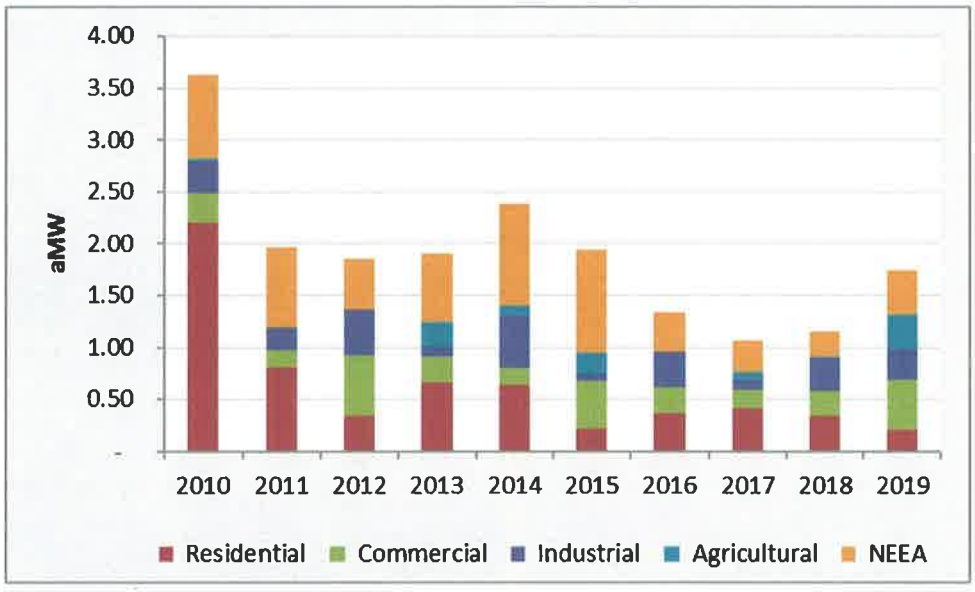


***Figure 2-4 – Historical annual conservation by customer sector from 2010-2019***

The CPA's forecasted conservation by customer sector is allocated, by staff analysis, 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. 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 2020 Forecast includes two

advancements in how the CPA is incorporated into the forecast; 1) the Forecast now 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, rather than 50% each year, and 2) the Forecast now reflects each customer class' changing percentage share of the total potential over time, rather than a fixed percentage. The 10-year cumulative incremental conservation potential is about 3.0 aMW. **Figure 2-5** shows the forecast of annual cumulative incremental conservation by customer class for the years 2020-2029.

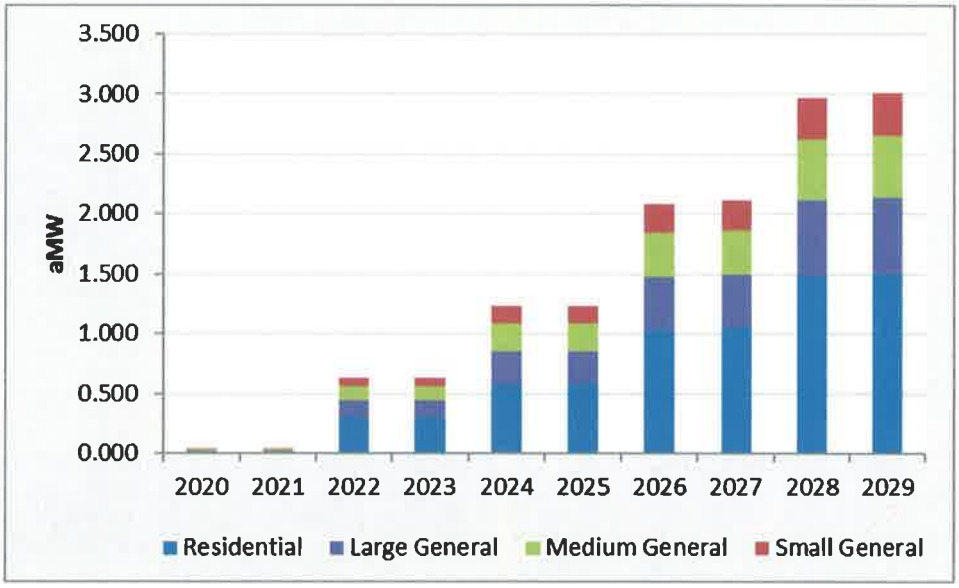


***Figure 2-5 - Forecast of annual cumulative incremental conservation by customer class from 2020-2029***

## 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.

Regarding item number two above, the regression modeling not only forecasts the values going forward, but it also determines the expected historical values given the historical actuals for the economic and weather variables. 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 year's modeled and actual value. This "first year forecast error" can result in an over or under stated annual change from the last year of actuals to the first year of the forecast because the annual change includes the forecast error. Removing and/or smoothing the first year forecast error is a common type of adjustment. **Table 2-7** summarizes the manual adjustments that were utilized for the Forecast.

*Table 2-7 – Manual adjustments applied to the forecast after regression modeling*

| Customer Class | Adjustment Type | Adjustment Description |
|---|---|---|
| **Residential** | Customer | 1) Removed customer first year forecast error<br>2) Increased customer growth to achieve about 60 cust./month |
| **Small General** | Customer | 3) Removed customer first year forecast error<br>4) Increased customer growth to achieve about 6 cust./month |
| **Medium General** | Customer | 5) Removed customer first year forecast error |
| **Large General** | Load | 6) Adjusted load up 1.0 aMW, then flat without conservation |
| **Large Industrial** | Customer & Load | 7) Adjusted load and customer forecasts to flat |
| **Small Irrigation** | Customer | 8) Removed customer first year forecast error |
| **Large Irrigation** | Customer & Load | 9) Adjusted load and customer forecasts to flat |
| **Street Lights** | Load | 10) Adjusted load forecast to match 2019, then flat |
| **Security Lights** | Customer & Load | 11) Adjusted load forecast to match 2019, then flat<br>12) Adjusted customer forecast to flat |
| **Unmetered Flats** | Customer & Load | 13) Adjusted load forecast to match 2019, then flat<br>14) Adjusted customer forecast to 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 loads 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 for 2020 to 2029 that the District's transmission and distribution system losses are 3.4%, which is the ten-year average 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 power lines from regional generation resources to our points-of-delivery. BPA transmission customers are required to return real power losses to BPA. Schedule 9 of BPA's Open Access Transmission Tariff (OATT) sets the real power loss factor at 1.9% of kWh delivered.

### 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 five years of ten-year forecasts of total system retail load, actual load and the current 2020 ten-year forecast. As seen in the graph, the more recent forecasts have a lower growth rate compared to past years based on the flattening slopes of the recent forecasts. The Forecast's growth rate has trended downward similar to regional forecasts by the Pacific Northwest Utilities Conference Committee (PNUCC).

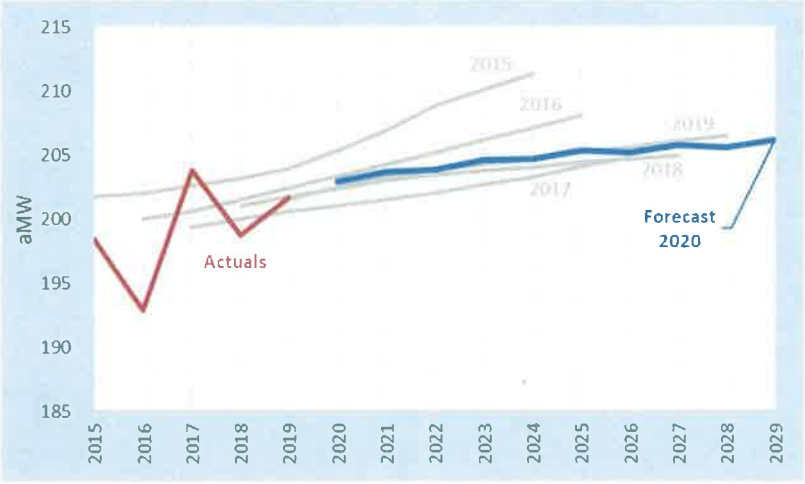


***Figure 3-1 – Total system retail load ten-year forecasts from 2015 to 2020***

### 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 -3.7%. For an annual forecast near 200 aMW, a 5% variance is equivalent to 10 aMW.

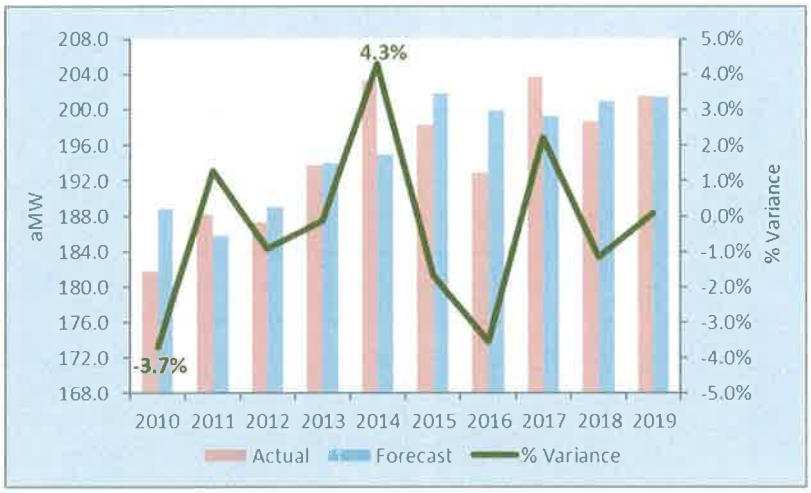


***Figure 3-2 – Forecast vs. actuals variance of total system retail load from 2010 to 2019***

In addition to the variance of the total system retail load, the District considers variances by customer class. **Table 3-1** shows the variance by customer class for the 2019 forecast versus 2019 actuals.

***Table 3-1 – Forecast vs actuals variance of retail load (aMW) by customer class for 2019***

| Customer Class | 2019 Forecast | 2019 Actual | 2019 % Variance |
|---|---|---|---|
| **Residential** | 82.92 | 85.74 | 3.40% |
| **Small General** | 14.32 | 14.71 | 2.72% |
| **Medium General** | 21.08 | 21.10 | 0.09% |
| **Large General** | 26.48 | 26.42 | -0.23% |
| **Large Industrial** | 7.65 | 7.34 | -4.05% |
| **Small Irrigation** | 1.75 | 1.51 | -13.71% |
| **Large Irrigation** | 46.53 | 44.06 | -5.31% |
| **Street Lights** | 0.29 | 0.29 | 0.00% |
| **Security Lights** | 0.12 | 0.11 | -8.33% |
| **Unmetered Flats** | 0.35 | 0.34 | -2.86% |
| **Total System[1]** | **201.47** | **201.62** | **0.07%** |

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 was adjusted up/down based on a statistical analysis of the historical percentage deviation from the average from 2001 to 2019 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 2020 Forecast, the high and low cases are ± 4.4% (± 8.9 MW) in 2020 and ± 4.5% (± 9.2 MW) in 2029. **Figure 3-3** shows graphically the historical annual variability along with the Forecast base, high, and low case forecasts.

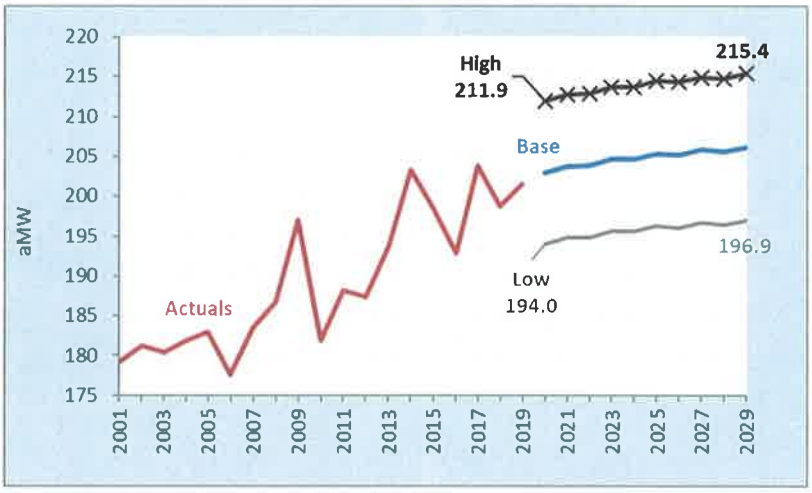


***Figure 3-3 –Total system retail load historical and base forecast with high and low case***

## 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, 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.

## 3.5 Customer Generation

In 2019 the District added 91 new services for customer generation net metering, significantly less than the 169 new services added in 2018. The total number of services has increased from 333 as of December 2018 to 424 as of December 2019. The slower growth of new customer solar installations during 2019 was expected due to the end of the Washington State incentive funding. The District expects to average one new service per week in 2020.

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 2019 by about 0.5 aMW or 4,707 MWh. The single hour maximum generation was 2.9 MWh from 12:00-1:00 pm on June 19, 2019. 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 2020, the District has identified twelve customers operating a total of fourteen EIL services, one more service than in 2018. The combined load of all EIL customers in 2019 was about 1.0 aMW, which is up about 0.2 aMW compared to 2018. The District's largest EIL service accounted for about 0.6 aMW in 2019. The Forecast does not explicitly model new EIL growth.

## 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.

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 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 BEV's, as this type of EV qualifies for a District rebate, is the predominant direction of the EV industry and has greater charging load impact than PHEV technology. **Table** below summarizes WA DOL's number of electric vehicles registered by city–those cities served by the District–as of February 29, 2020.

***Table 3-2 – Number of electric vehicle registrations by type and city as of Feb. 2020***

| City | Plug-in hybrid electric vehicle (PHEV) | Battery electric vehicle (BEV) | Grand Total |
|---|---|---|---|
| Prosser | 5 | 3 | 8 |
| Benton City | 14 | 13 | 27 |
| Kennewick | 140 | 125 | 265 |
| **Grand Total** | **159** | **141** | **300** |

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 141 BEV's would add about 0.05 aMW of annual load. If all 141 BEV's charged at the same time using a level 2 charger (240 volt, 30 amp) it would add about 1.0 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 203.0 aMW in 2020 and growing to 206.2 aMW in 2029. The five and ten-year average annual rates of growth are 0.21% and 0.17% respectively. The ten-year forecast incudes 3.01 aMW of cumulative incremental conservation. The forecast for the annual average customer count is an increase of about 778 customers in 2020. See **Figure 4-1** and **Table 4-1** for the ten-year forecast detail.

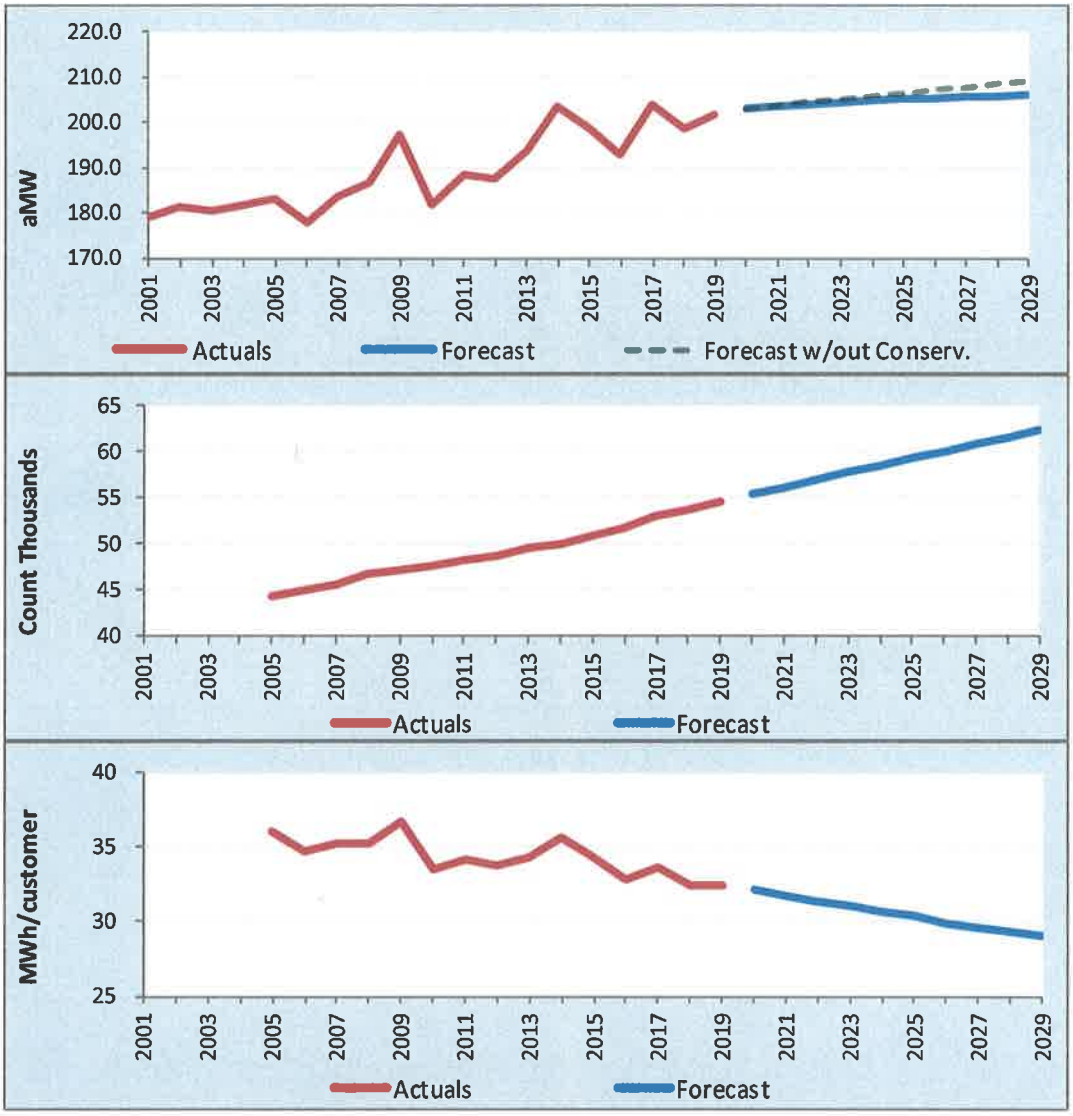


***Figure 4-1 – Total System forecast of retail load, customers and usage per customer***

*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) | Average Customer Count | Average Customer Count Change | Average Customer Count % Change | Usage Per Customer (MWh) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2001 | 1,569,982 | #N/A | 179.22 | -11.52% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2002 | 1,587,678 | #N/A | 181.24 | 1.13% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2003 | 1,580,751 | #N/A | 180.45 | -0.44% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2004 | 1,597,054 | #N/A | 181.81 | 0.76% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2005 | 1,602,508 | #N/A | 182.93 | 0.62% | #N/A | #N/A | 44,389 | #N/A | #N/A | 36.101 |
| 2006 | 1,555,710 | #N/A | 177.59 | -2.92% | #N/A | #N/A | 44,856 | 467 | 1.05% | 34.682 |
| 2007 | 1,607,265 | #N/A | 183.48 | 3.31% | #N/A | #N/A | 45,569 | 713 | 1.59% | 35.271 |
| 2008 | 1,639,856 | #N/A | 186.69 | 1.75% | #N/A | #N/A | 46,600 | 1,031 | 2.26% | 35.190 |
| 2009 | 1,726,341 | #N/A | 197.07 | 5.56% | #N/A | #N/A | 47,074 | 474 | 1.02% | 36.673 |
| 2010 | 1,592,802 | #N/A | 181.83 | -7.74% | #N/A | #N/A | 47,617 | 543 | 1.15% | 33.450 |
| 2011 | 1,648,362 | #N/A | 188.17 | 3.49% | #N/A | #N/A | 48,197 | 580 | 1.22% | 34.201 |
| 2012 | 1,645,277 | #N/A | 187.30 | -0.46% | #N/A | #N/A | 48,710 | 513 | 1.06% | 33.777 |
| 2013 | 1,696,774 | #N/A | 193.70 | 3.41% | #N/A | #N/A | 49,520 | 810 | 1.66% | 34.264 |
| 2014 | 1,781,322 | #N/A | 203.35 | 4.98% | #N/A | #N/A | 50,053 | 533 | 1.08% | 35.589 |
| 2015 | 1,738,022 | #N/A | 198.40 | -2.43% | #N/A | #N/A | 50,762 | 709 | 1.42% | 34.239 |
| 2016 | 1,694,078 | #N/A | 192.86 | -2.79% | #N/A | #N/A | 51,643 | 881 | 1.74% | 32.804 |
| 2017 | 1,785,098 | #N/A | 203.78 | 5.66% | #N/A | #N/A | 53,111 | 1,468 | 2.84% | 33.611 |
| 2018 | 1,740,849 | #N/A | 198.73 | -2.48% | #N/A | #N/A | 53,744 | 633 | 1.19% | 32.392 |
| 2019 | 1,766,171 | #N/A | 201.62 | 1.45% | #N/A | #N/A | 54,581 | 837 | 1.56% | 32.359 |
| 2020 | #N/A | 1,782,772 | 202.96 | 0.66% | 1,783,062 | 202.99 | 55,359 | 778 | 1.43% | 32.204 |
| 2021 | #N/A | 1,784,519 | 203.71 | 0.37% | 1,784,808 | 203.75 | 56,161 | 802 | 1.45% | 31.775 |
| 2022 | #N/A | 1,785,918 | 203.87 | 0.08% | 1,791,464 | 204.51 | 56,979 | 818 | 1.46% | 31.343 |
| 2023 | #N/A | 1,792,147 | 204.58 | 0.35% | 1,797,693 | 205.22 | 57,771 | 792 | 1.39% | 31.021 |
| 2024 | #N/A | 1,797,798 | 204.67 | 0.04% | 1,808,630 | 205.90 | 58,547 | 776 | 1.34% | 30.707 |
| 2025 | #N/A | 1,798,930 | 205.36 | 0.34% | 1,809,733 | 206.59 | 59,315 | 768 | 1.31% | 30.328 |
| 2026 | #N/A | 1,797,288 | 205.17 | -0.09% | 1,815,577 | 207.26 | 60,072 | 757 | 1.28% | 29.919 |
| 2027 | #N/A | 1,802,706 | 205.79 | 0.30% | 1,821,303 | 207.91 | 60,820 | 748 | 1.24% | 29.640 |
| 2028 | #N/A | 1,805,690 | 205.57 | -0.11% | 1,831,845 | 208.54 | 61,557 | 737 | 1.21% | 29.334 |
| 2029 | #N/A | 1,805,937 | 206.16 | 0.29% | 1,832,328 | 209.17 | 62,283 | 726 | 1.18% | 28.996 |
| AARG %[1] (2020-2024) | | | 0.21% | | | | | | | -1.18% |
| AARG %[1] (2020-2029) | | | 0.17% | | | | | | | -1.16% |

1) AARG % = Annual Average Rate of Growth Percentage

# 5. Forecast by Customer Class

## 5.1 Residential

The forecast for residential retail load is 84.2 aMW in 2020 and growing to 87.4 aMW in 2029. The five and ten-year average annual rates of growth are 0.51% and 0.42% respectively. The ten-year forecast incudes 1.5 aMW of cumulative incremental conservation. The forecast for the average annual customer count is an increase of about 733 customers in 2020. See **Figure 5-1** and **Table 5-1** for the ten-year forecast detail.

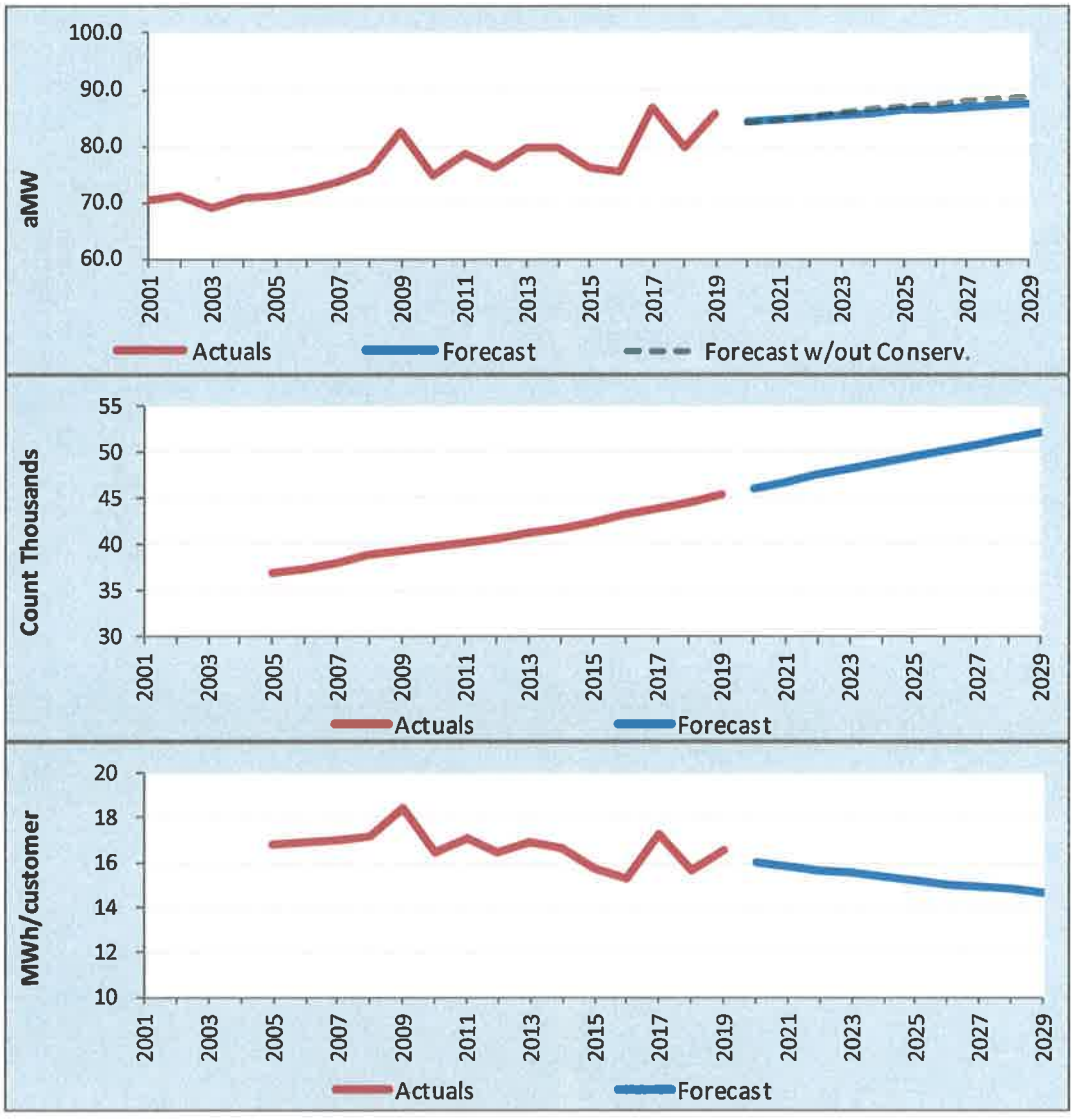


***Figure 5-1 - Residential forecast of retail load, customers and usage per customer***

*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) | Average Customer Count | Average Customer Count Change | Average Customer Count % Change | Usage Per Customer (MWh) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2001 | 617,763 | #N/A | 70.52 | -2.75% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2002 | 622,196 | #N/A | 71.03 | 0.72% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2003 | 604,618 | #N/A | 69.02 | -2.83% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2004 | 621,386 | #N/A | 70.74 | 2.49% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2005 | 622,639 | #N/A | 71.08 | 0.48% | #N/A | #N/A | 36,963 | #N/A | #N/A | 16.845 |
| 2006 | 632,213 | #N/A | 72.17 | 1.54% | #N/A | #N/A | 37,418 | 455 | 1.23% | 16.896 |
| 2007 | 644,392 | #N/A | 73.56 | 1.93% | #N/A | #N/A | 37,969 | 551 | 1.47% | 16.972 |
| 2008 | 666,418 | #N/A | 75.87 | 3.14% | #N/A | #N/A | 38,855 | 886 | 2.33% | 17.151 |
| 2009 | 721,719 | #N/A | 82.39 | 8.60% | #N/A | #N/A | 39,220 | 365 | 0.94% | 18.402 |
| 2010 | 654,775 | #N/A | 74.75 | -9.28% | #N/A | #N/A | 39,687 | 467 | 1.19% | 16.498 |
| 2011 | 687,953 | #N/A | 78.53 | 5.07% | #N/A | #N/A | 40,201 | 514 | 1.30% | 17.113 |
| 2012 | 668,018 | #N/A | 76.05 | -3.16% | #N/A | #N/A | 40,645 | 444 | 1.10% | 16.435 |
| 2013 | 697,887 | #N/A | 79.67 | 4.76% | #N/A | #N/A | 41,321 | 676 | 1.66% | 16.889 |
| 2014 | 696,804 | #N/A | 79.54 | -0.16% | #N/A | #N/A | 41,758 | 437 | 1.06% | 16.687 |
| 2015 | 665,505 | #N/A | 75.97 | -4.49% | #N/A | #N/A | 42,375 | 617 | 1.48% | 15.705 |
| 2016 | 661,742 | #N/A | 75.33 | -0.84% | #N/A | #N/A | 43,157 | 782 | 1.85% | 15.333 |
| 2017 | 759,634 | #N/A | 86.72 | 15.11% | #N/A | #N/A | 43,870 | 713 | 1.65% | 17.316 |
| 2018 | 697,107 | #N/A | 79.58 | -8.23% | #N/A | #N/A | 44,550 | 680 | 1.55% | 15.648 |
| 2019 | 751,107 | #N/A | 85.74 | 7.75% | #N/A | #N/A | 45,319 | 769 | 1.73% | 16.574 |
| 2020 | #N/A | 739,384 | 84.17 | -1.83% | 739,508 | 84.19 | 46,052 | 733 | 1.62% | 16.055 |
| 2021 | #N/A | 741,545 | 84.65 | 0.57% | 741,669 | 84.67 | 46,770 | 718 | 1.56% | 15.855 |
| 2022 | #N/A | 744,280 | 84.96 | 0.37% | 746,882 | 85.26 | 47,502 | 732 | 1.57% | 15.668 |
| 2023 | #N/A | 749,163 | 85.52 | 0.66% | 751,765 | 85.82 | 48,212 | 710 | 1.49% | 15.539 |
| 2024 | #N/A | 754,481 | 85.89 | 0.43% | 759,575 | 86.47 | 48,907 | 695 | 1.44% | 15.427 |
| 2025 | #N/A | 756,130 | 86.32 | 0.49% | 761,209 | 86.90 | 49,594 | 688 | 1.41% | 15.246 |
| 2026 | #N/A | 756,848 | 86.40 | 0.09% | 765,796 | 87.42 | 50,273 | 679 | 1.37% | 15.055 |
| 2027 | #N/A | 761,183 | 86.89 | 0.57% | 770,290 | 87.93 | 50,943 | 670 | 1.33% | 14.942 |
| 2028 | #N/A | 764,784 | 87.07 | 0.20% | 777,796 | 88.55 | 51,604 | 661 | 1.30% | 14.820 |
| 2029 | #N/A | 765,807 | 87.42 | 0.41% | 778,942 | 88.92 | 52,255 | 651 | 1.26% | 14.655 |
| AARG %[1] (2020-2024) | | | 0.51% | | | | | | | -0.99% |
| AARG %[1] (2020-2029) | | | 0.42% | | | | | | | -1.01% |

1) AARG % = Annual Average Rate of Growth Percentage

## 5.2 Small General

The forecast for small general service retail load is 14.4 aMW in 2020 and growing to 14.6 aMW in 2029. The five and ten-year average annual rates of growth are 0.19% and 0.15% respectively. The ten-year forecast incudes 0.35 aMW of cumulative incremental conservation. The forecast for the average annual customer count is an increase of about 67 customers in 2020. See **Figure 5-2** and **Table 5-2** for the ten-year forecast detail.

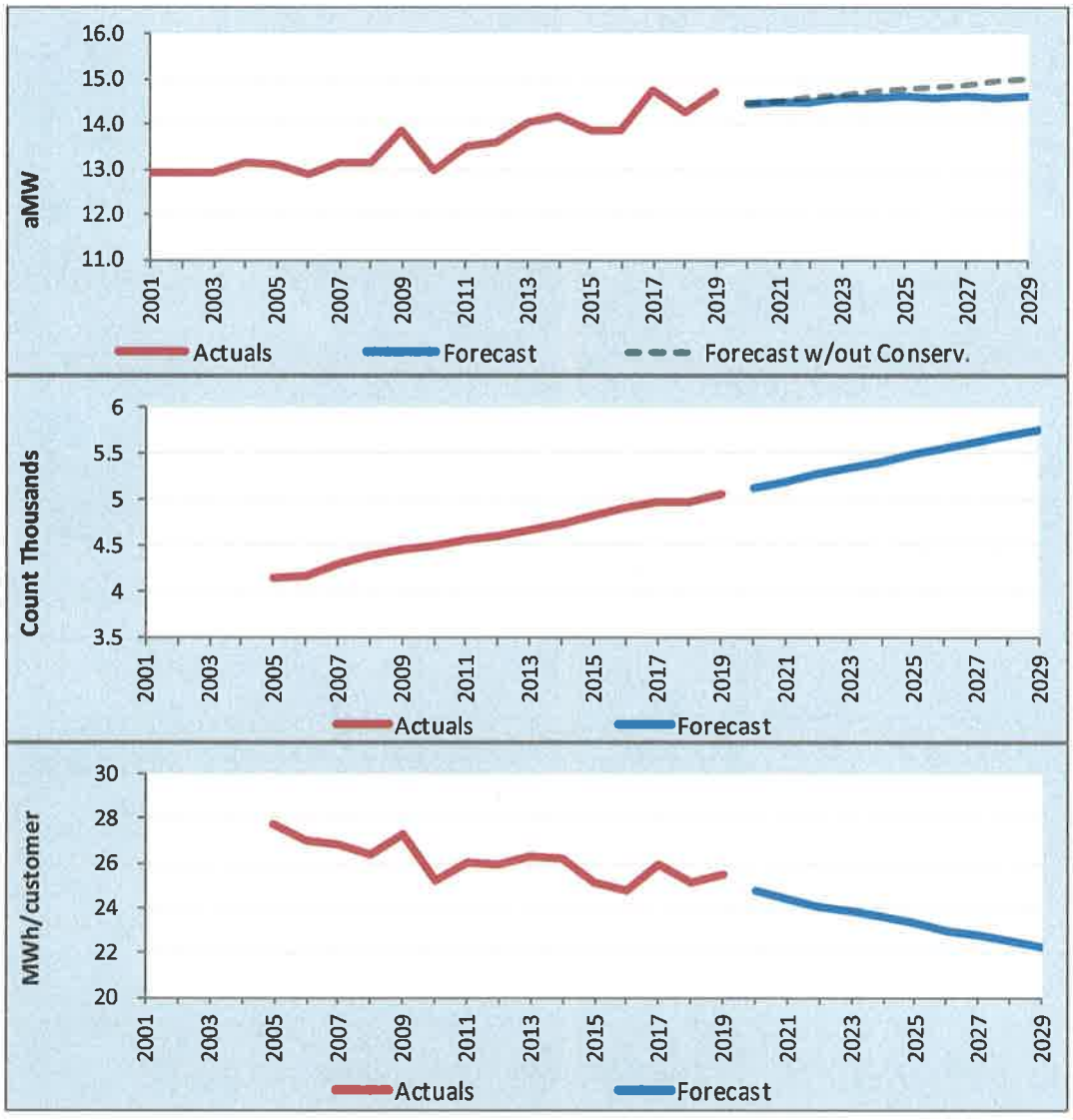


***Figure 5-2 – Small General forecast of retail load, customers and usage per customer***

*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) | Average Customer Count | Average Customer Count Change | Average Customer Count % Change | Usage Per Customer (MWh) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2001 | 113,104 | #N/A | 12.91 | -1.89% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2002 | 113,127 | #N/A | 12.91 | 0.02% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2003 | 113,253 | #N/A | 12.93 | 0.11% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2004 | 115,574 | #N/A | 13.16 | 1.77% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2005 | 114,710 | #N/A | 13.09 | -0.48% | #N/A | #N/A | 4,144 | #N/A | #N/A | 27.681 |
| 2006 | 112,705 | #N/A | 12.87 | -1.75% | #N/A | #N/A | 4,169 | 25 | 0.60% | 27.034 |
| 2007 | 115,049 | #N/A | 13.13 | 2.08% | #N/A | #N/A | 4,295 | 126 | 3.02% | 26.787 |
| 2008 | 115,616 | #N/A | 13.16 | 0.22% | #N/A | #N/A | 4,385 | 90 | 2.10% | 26.366 |
| 2009 | 121,580 | #N/A | 13.88 | 5.45% | #N/A | #N/A | 4,460 | 75 | 1.71% | 27.260 |
| 2010 | 113,483 | #N/A | 12.95 | -6.66% | #N/A | #N/A | 4,503 | 43 | 0.96% | 25.202 |
| 2011 | 118,338 | #N/A | 13.51 | 4.28% | #N/A | #N/A | 4,553 | 50 | 1.11% | 25.991 |
| 2012 | 119,421 | #N/A | 13.60 | 0.64% | #N/A | #N/A | 4,610 | 57 | 1.25% | 25.905 |
| 2013 | 122,928 | #N/A | 14.03 | 3.22% | #N/A | #N/A | 4,682 | 72 | 1.56% | 26.255 |
| 2014 | 124,285 | #N/A | 14.19 | 1.10% | #N/A | #N/A | 4,741 | 59 | 1.26% | 26.215 |
| 2015 | 121,498 | #N/A | 13.87 | -2.24% | #N/A | #N/A | 4,828 | 87 | 1.84% | 25.165 |
| 2016 | 121,868 | #N/A | 13.87 | 0.03% | #N/A | #N/A | 4,915 | 87 | 1.80% | 24.795 |
| 2017 | 129,054 | #N/A | 14.73 | 6.19% | #N/A | #N/A | 4,977 | 62 | 1.26% | 25.930 |
| 2018 | 124,864 | #N/A | 14.25 | -3.25% | #N/A | #N/A | 4,972 | -5 | -0.10% | 25.114 |
| 2019 | 128,836 | #N/A | 14.71 | 3.18% | #N/A | #N/A | 5,055 | 83 | 1.67% | 25.487 |
| 2020 | #N/A | 126,878 | 14.44 | -1.79% | 126,917 | 14.45 | 5,122 | 67 | 1.33% | 24.770 |
| 2021 | #N/A | 127,043 | 14.50 | 0.40% | 127,082 | 14.51 | 5,197 | 75 | 1.47% | 24.444 |
| 2022 | #N/A | 126,994 | 14.50 | -0.04% | 127,679 | 14.58 | 5,274 | 77 | 1.47% | 24.080 |
| 2023 | #N/A | 127,551 | 14.56 | 0.44% | 128,236 | 14.64 | 5,348 | 74 | 1.40% | 23.851 |
| 2024 | #N/A | 127,855 | 14.56 | -0.04% | 129,189 | 14.71 | 5,420 | 72 | 1.35% | 23.590 |
| 2025 | #N/A | 127,979 | 14.61 | 0.37% | 129,310 | 14.76 | 5,492 | 72 | 1.32% | 23.304 |
| 2026 | #N/A | 127,659 | 14.57 | -0.25% | 129,831 | 14.82 | 5,562 | 71 | 1.28% | 22.951 |
| 2027 | #N/A | 128,135 | 14.63 | 0.37% | 130,341 | 14.88 | 5,632 | 70 | 1.25% | 22.752 |
| 2028 | #N/A | 128,203 | 14.60 | -0.22% | 131,258 | 14.94 | 5,700 | 68 | 1.21% | 22.491 |
| 2029 | #N/A | 128,243 | 14.64 | 0.31% | 131,324 | 14.99 | 5,768 | 67 | 1.18% | 22.235 |
| AARG %[1] (2020-2024) | | | 0.19% | | | | | | | -1.21% |
| AARG %[1] (2020-2029) | | | 0.15% | | | | | | | -1.19% |

1) AARG % = Annual Average Rate of Growth Percentage

## 5.3 Medium General

The forecast for medium general service retail load is 21.2 aMW in 2020 and growing to 21.5 aMW in 2029. The five and ten-year average annual rates of growth are 0.22% and 0.17% respectively. The ten-year forecast incudes 0.52 aMW of cumulative incremental conservation. The forecast for the average annual customer count is an increase of about 7 customers in 2020. See **Figure 5-3** and **Table 5-3** for the ten-year forecast detail.

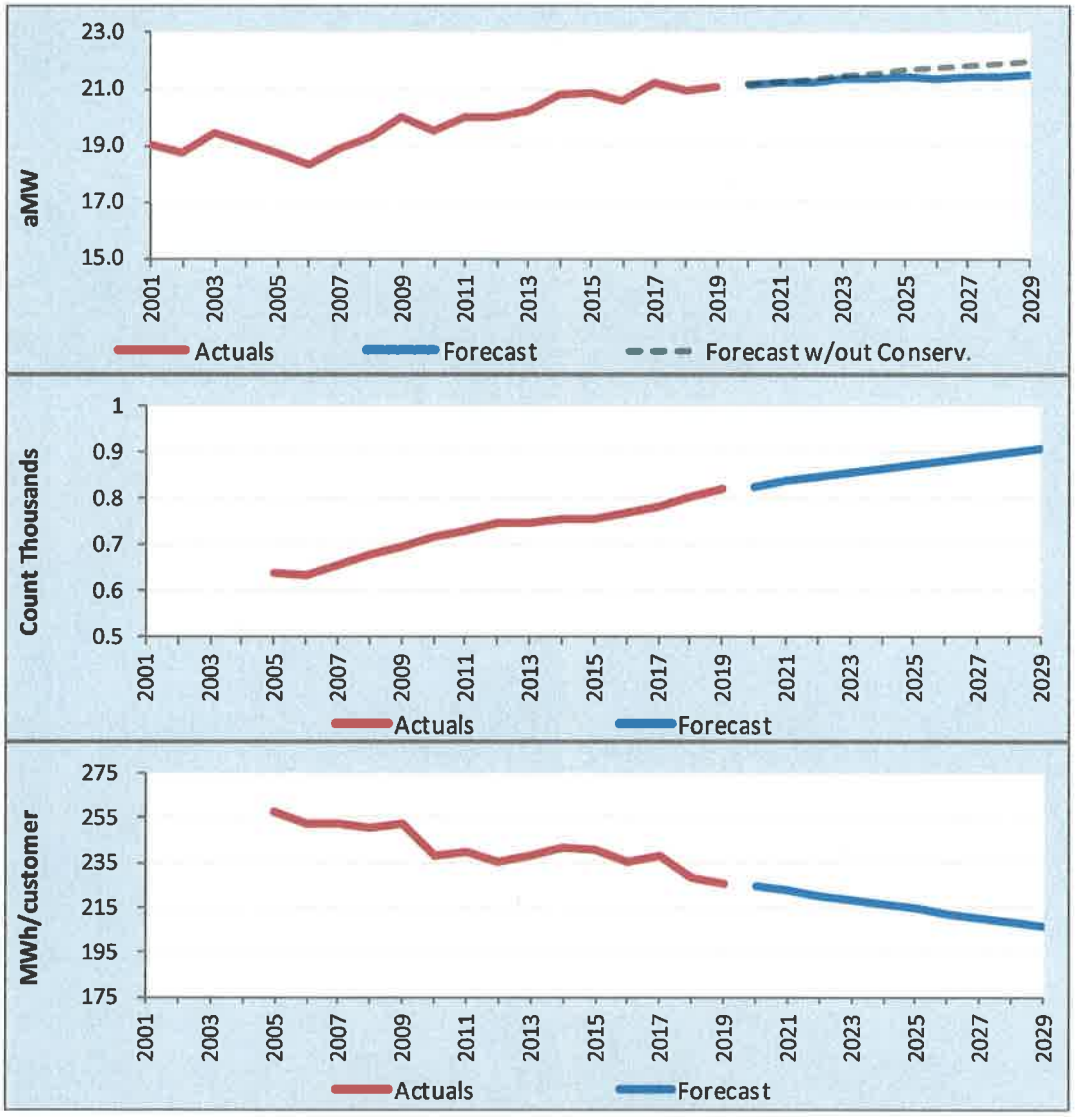


***Figure 5-3 – Medium General forecast of retail load, customers and usage per customer***

*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) | Average Customer Count | Average Customer Count Change | Average Customer Count % Change | Usage Per Customer (MWh) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2001 | 166,300 | #N/A | 18.98 | -0.33% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2002 | 164,197 | #N/A | 18.74 | -1.26% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2003 | 170,005 | #N/A | 19.41 | 3.54% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2004 | 167,622 | #N/A | 19.08 | -1.67% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2005 | 164,043 | #N/A | 18.73 | -1.87% | #N/A | #N/A | 637 | #N/A | #N/A | 257.524 |
| 2006 | 160,440 | #N/A | 18.32 | -2.20% | #N/A | #N/A | 636 | -1 | -0.16% | 252.263 |
| 2007 | 165,186 | #N/A | 18.86 | 2.96% | #N/A | #N/A | 654 | 18 | 2.83% | 252.577 |
| 2008 | 169,571 | #N/A | 19.30 | 2.37% | #N/A | #N/A | 676 | 22 | 3.36% | 250.845 |
| 2009 | 175,265 | #N/A | 20.01 | 3.64% | #N/A | #N/A | 695 | 19 | 2.81% | 252.179 |
| 2010 | 170,868 | #N/A | 19.51 | -2.51% | #N/A | #N/A | 718 | 23 | 3.31% | 237.977 |
| 2011 | 175,463 | #N/A | 20.03 | 2.69% | #N/A | #N/A | 732 | 14 | 1.95% | 239.704 |
| 2012 | 175,999 | #N/A | 20.04 | 0.03% | #N/A | #N/A | 747 | 15 | 2.05% | 235.607 |
| 2013 | 177,250 | #N/A | 20.23 | 0.99% | #N/A | #N/A | 746 | -1 | -0.13% | 237.601 |
| 2014 | 182,044 | #N/A | 20.78 | 2.70% | #N/A | #N/A | 754 | 8 | 1.07% | 241.437 |
| 2015 | 182,610 | #N/A | 20.85 | 0.31% | #N/A | #N/A | 758 | 4 | 0.53% | 240.911 |
| 2016 | 180,467 | #N/A | 20.54 | -1.44% | #N/A | #N/A | 768 | 10 | 1.32% | 234.983 |
| 2017 | 186,155 | #N/A | 21.25 | 3.43% | #N/A | #N/A | 782 | 14 | 1.82% | 238.050 |
| 2018 | 183,125 | #N/A | 20.90 | -1.63% | #N/A | #N/A | 803 | 21 | 2.69% | 228.051 |
| 2019 | 184,797 | #N/A | 21.10 | 0.91% | #N/A | #N/A | 820 | 17 | 2.12% | 225.362 |
| 2020 | #N/A | 185,780 | 21.15 | 0.26% | 185,837 | 21.16 | 827 | 7 | 0.83% | 224.689 |
| 2021 | #N/A | 186,119 | 21.25 | 0.46% | 186,176 | 21.25 | 837 | 10 | 1.21% | 222.409 |
| 2022 | #N/A | 186,091 | 21.24 | -0.02% | 187,094 | 21.36 | 847 | 10 | 1.20% | 219.727 |
| 2023 | #N/A | 186,947 | 21.34 | 0.46% | 187,950 | 21.46 | 857 | 10 | 1.15% | 218.226 |
| 2024 | #N/A | 187,384 | 21.33 | -0.04% | 189,338 | 21.55 | 866 | 9 | 1.10% | 216.357 |
| 2025 | #N/A | 187,652 | 21.42 | 0.42% | 189,601 | 21.64 | 875 | 9 | 1.06% | 214.398 |
| 2026 | #N/A | 187,220 | 21.37 | -0.23% | 190,402 | 21.74 | 884 | 9 | 1.03% | 211.728 |
| 2027 | #N/A | 187,953 | 21.46 | 0.39% | 191,185 | 21.82 | 893 | 9 | 1.00% | 210.454 |
| 2028 | #N/A | 188,038 | 21.41 | -0.23% | 192,514 | 21.92 | 902 | 9 | 0.96% | 208.545 |
| 2029 | #N/A | 188,180 | 21.48 | 0.35% | 192,694 | 22.00 | 910 | 8 | 0.93% | 206.772 |
| AARG %[1] (2020-2024) | | | 0.22% | | | | | | | -0.94% |
| AARG %[1] (2020-2029) | | | 0.17% | | | | | | | -0.92% |

1) AARG % = Annual Average Rate of Growth Percentage

## 5.4 Large General

The forecast for large general service retail load is 26.5 aMW in 2020 and decreasing to 25.9 aMW in 2029. The five and ten-year average annual rates of growth are -0.26% and -0.27% respectively. The ten-year forecast incudes 0.65 aMW of cumulative incremental conservation. The forecast for the average annual customer count is an increase of about 2 customers in 2020. See **Figure 5-4** and **Table 5-4** for the ten-year forecast detail.

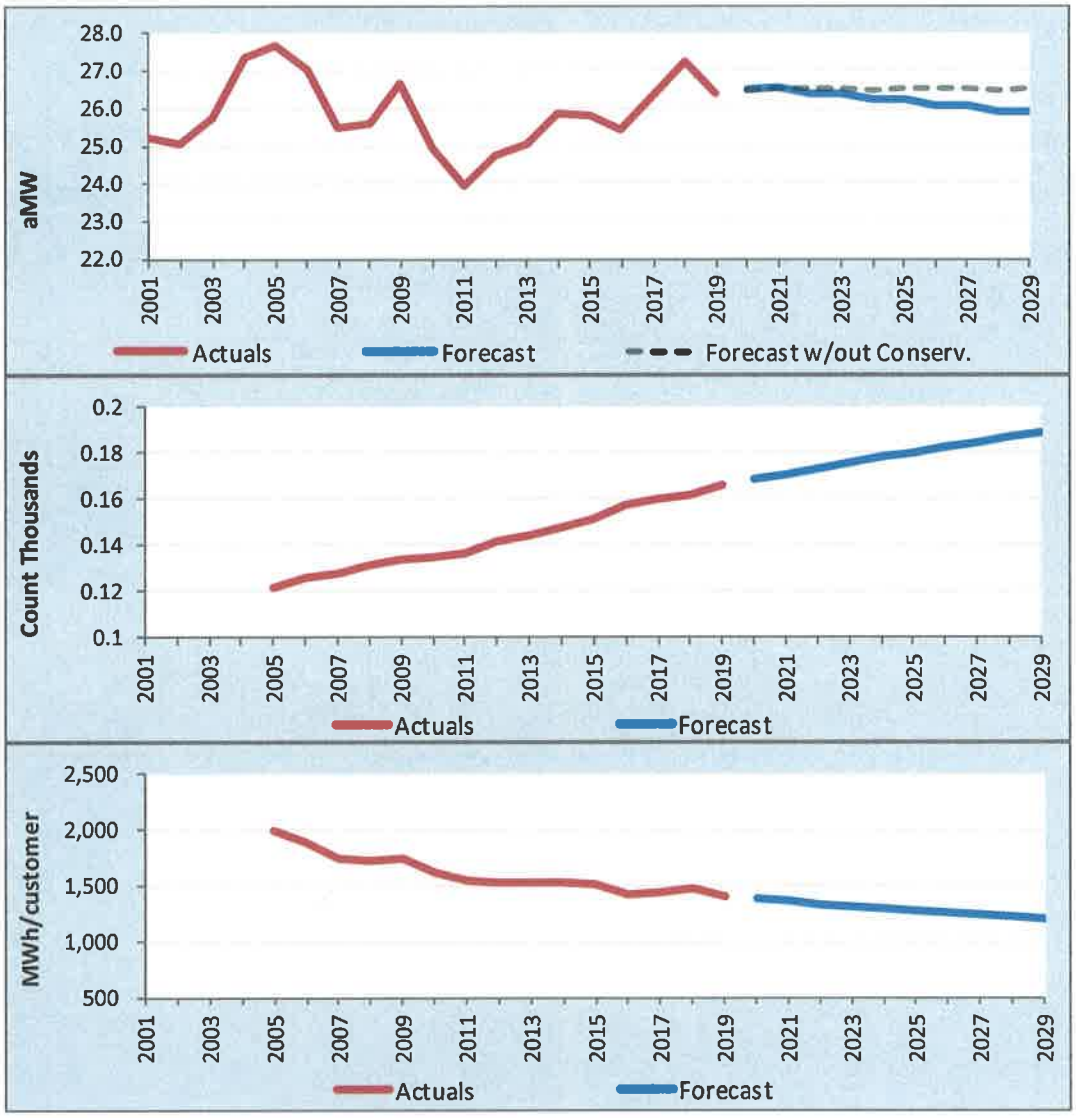


***Figure 5-4 – Large General forecast of retail load, customers and usage per customer***

*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) | Average Customer Count | Average Customer Count Change | Average Customer Count % Change | Usage Per Customer (MWh) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2001 | 220,952 | #N/A | 25.22 | -10.49% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2002 | 219,625 | #N/A | 25.07 | -0.60% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2003 | 225,799 | #N/A | 25.78 | 2.81% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2004 | 240,192 | #N/A | 27.34 | 6.08% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2005 | 242,555 | #N/A | 27.69 | 1.26% | #N/A | #N/A | 122 | #N/A | #N/A | 1,988.160 |
| 2006 | 236,908 | #N/A | 27.04 | -2.33% | #N/A | #N/A | 126 | 4 | 3.28% | 1,880.220 |
| 2007 | 223,317 | #N/A | 25.49 | -5.74% | #N/A | #N/A | 128 | 2 | 1.59% | 1,744.660 |
| 2008 | 224,958 | #N/A | 25.61 | 0.46% | #N/A | #N/A | 131 | 3 | 2.34% | 1,717.234 |
| 2009 | 233,410 | #N/A | 26.65 | 4.04% | #N/A | #N/A | 134 | 3 | 2.29% | 1,741.869 |
| 2010 | 218,686 | #N/A | 24.96 | -6.31% | #N/A | #N/A | 135 | 1 | 0.75% | 1,619.899 |
| 2011 | 209,669 | #N/A | 23.93 | -4.12% | #N/A | #N/A | 136 | 1 | 0.74% | 1,541.682 |
| 2012 | 217,377 | #N/A | 24.75 | 3.39% | #N/A | #N/A | 142 | 6 | 4.41% | 1,530.826 |
| 2013 | 219,315 | #N/A | 25.04 | 1.17% | #N/A | #N/A | 144 | 2 | 1.41% | 1,523.024 |
| 2014 | 226,679 | #N/A | 25.88 | 3.36% | #N/A | #N/A | 148 | 4 | 2.78% | 1,531.617 |
| 2015 | 226,175 | #N/A | 25.82 | -0.22% | #N/A | #N/A | 151 | 3 | 2.03% | 1,497.847 |
| 2016 | 223,268 | #N/A | 25.42 | -1.56% | #N/A | #N/A | 157 | 6 | 3.97% | 1,422.089 |
| 2017 | 230,674 | #N/A | 26.33 | 3.60% | #N/A | #N/A | 160 | 3 | 1.91% | 1,441.715 |
| 2018 | 238,606 | #N/A | 27.24 | 3.44% | #N/A | #N/A | 162 | 2 | 1.25% | 1,472.877 |
| 2019 | 231,448 | #N/A | 26.42 | -3.00% | #N/A | #N/A | 166 | 4 | 2.47% | 1,394.263 |
| 2020 | #N/A | 233,026 | 26.53 | 0.41% | 233,097 | 26.54 | 168 | 2 | 1.36% | 1,385.001 |
| 2021 | #N/A | 232,394 | 26.53 | 0.00% | 232,465 | 26.54 | 171 | 3 | 1.49% | 1,361.022 |
| 2022 | #N/A | 231,208 | 26.39 | -0.51% | 232,465 | 26.54 | 173 | 3 | 1.46% | 1,334.533 |
| 2023 | #N/A | 231,208 | 26.39 | 0.00% | 232,465 | 26.54 | 176 | 3 | 1.44% | 1,315.550 |
| 2024 | #N/A | 230,647 | 26.26 | -0.52% | 233,097 | 26.54 | 178 | 2 | 1.23% | 1,296.375 |
| 2025 | #N/A | 230,021 | 26.26 | 0.00% | 232,465 | 26.54 | 180 | 2 | 1.26% | 1,276.714 |
| 2026 | #N/A | 228,477 | 26.08 | -0.67% | 232,465 | 26.54 | 182 | 2 | 1.25% | 1,252.498 |
| 2027 | #N/A | 228,413 | 26.07 | -0.03% | 232,465 | 26.54 | 185 | 2 | 1.23% | 1,236.893 |
| 2028 | #N/A | 227,485 | 25.90 | -0.68% | 233,097 | 26.54 | 187 | 2 | 1.13% | 1,218.126 |
| 2029 | #N/A | 226,805 | 25.89 | -0.03% | 232,465 | 26.54 | 189 | 2 | 1.12% | 1,201.084 |
| AARG %[1] (2020-2024) | | | -0.26% | | | | | | | -1.64% |
| AARG %[1] (2020-2029) | | | -0.27% | | | | | | | -1.57% |

1) AARG % = Annual Average Rate of Growth Percentage

## 5.5 Large Industrial

The forecast for large industrial service retail load in 2020 is 7.52 aMW and is estimated to remain flat over the ten-year forecast period, with no incremental conservation and no additional customers. See **Figure 5-5** and **Table 5-5** for the ten-year forecast detail.

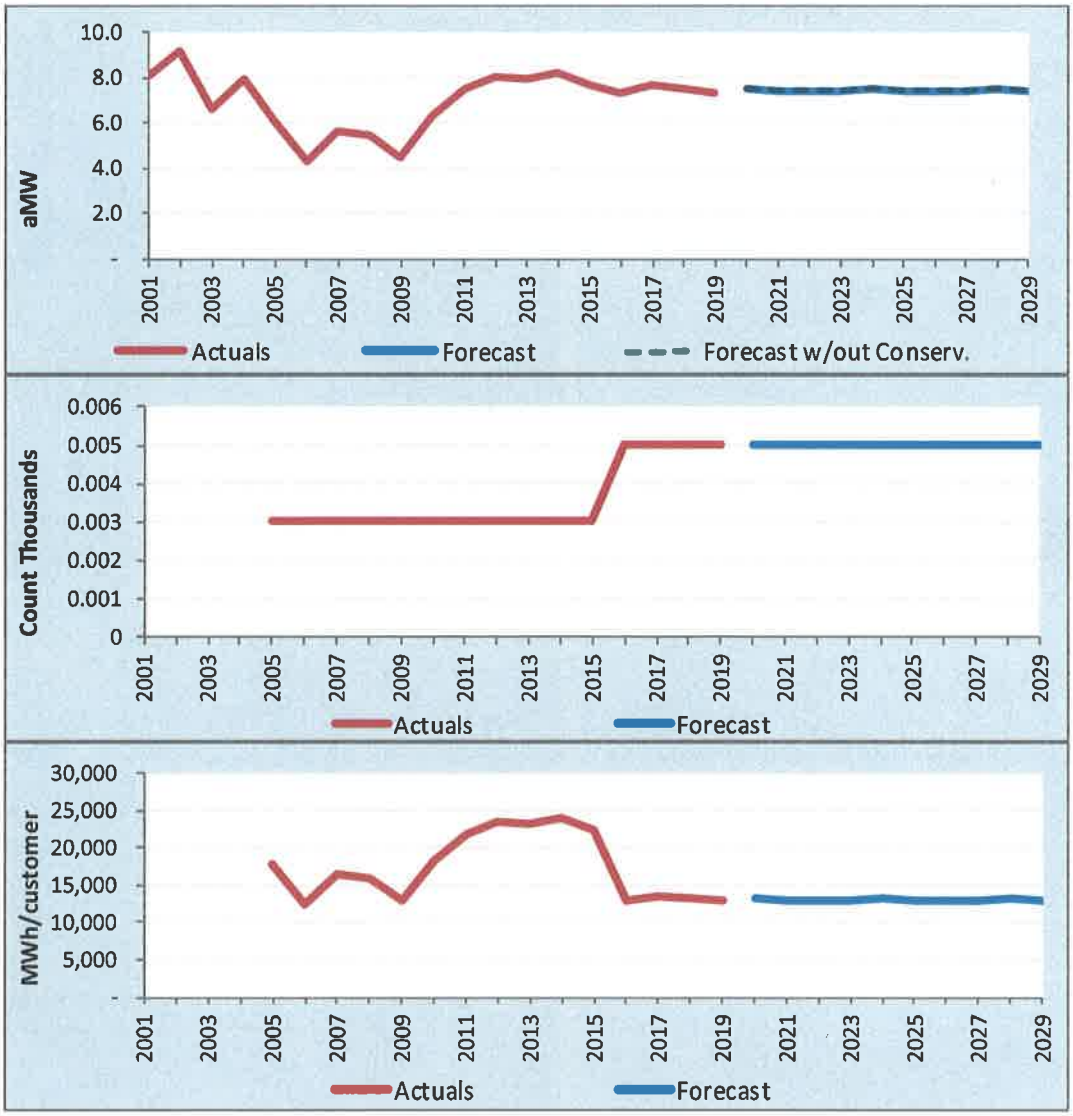


***Figure 5-5 – Large Industrial forecast of retail load, customers and usage per customer***

*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) | Average Customer Count | Average Customer Count Change | Average Customer Count % Change | Usage Per Customer (MWh) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2001 | 70,897 | IN/A | 8.09 | -67.82% | IN/A | IN/A | IN/A | IN/A | IN/A | IN/A |
| 2002 | 80,551 | IN/A | 9.20 | 13.62% | IN/A | IN/A | IN/A | IN/A | IN/A | IN/A |
| 2003 | 58,054 | IN/A | 6.63 | -27.93% | IN/A | IN/A | IN/A | IN/A | IN/A | IN/A |
| 2004 | 69,479 | IN/A | 7.91 | 19.35% | IN/A | IN/A | IN/A | IN/A | IN/A | IN/A |
| 2005 | 53,286 | IN/A | 6.08 | -23.10% | IN/A | IN/A | 3 | IN/A | IN/A | 17,761.932 |
| 2006 | 37,456 | IN/A | 4.28 | -29.71% | IN/A | IN/A | 3 | 0 | 0.00% | 12,485.305 |
| 2007 | 49,045 | IN/A | 5.60 | 30.94% | IN/A | IN/A | 3 | 0 | 0.00% | 16,348.383 |
| 2008 | 47,760 | IN/A | 5.44 | -2.89% | IN/A | IN/A | 3 | 0 | 0.00% | 15,920.098 |
| 2009 | 38,909 | IN/A | 4.44 | -18.31% | IN/A | IN/A | 3 | 0 | 0.00% | 12,969.692 |
| 2010 | 55,365 | IN/A | 6.32 | 42.29% | IN/A | IN/A | 3 | 0 | 0.00% | 18,454.887 |
| 2011 | 65,411 | IN/A | 7.47 | 18.15% | IN/A | IN/A | 3 | 0 | 0.00% | 21,803.603 |
| 2012 | 70,575 | IN/A | 8.03 | 7.60% | IN/A | IN/A | 3 | 0 | 0.00% | 23,525.055 |
| 2013 | 69,803 | IN/A | 7.97 | -0.82% | IN/A | IN/A | 3 | 0 | 0.00% | 23,267.593 |
| 2014 | 71,869 | IN/A | 8.20 | 2.96% | IN/A | IN/A | 3 | 0 | 0.00% | 23,956.495 |
| 2015 | 66,942 | IN/A | 7.64 | -6.86% | IN/A | IN/A | 3 | 0 | 0.00% | 22,313.962 |
| 2016 | 64,612 | IN/A | 7.36 | -3.74% | IN/A | IN/A | 5 | 2 | 66.67% | 12,922.450 |
| 2017 | 67,084 | IN/A | 7.66 | 4.11% | IN/A | IN/A | 5 | 0 | 0.00% | 13,416.822 |
| 2018 | 65,997 | IN/A | 7.53 | -1.62% | IN/A | IN/A | 5 | 0 | 0.00% | 13,199.344 |
| 2019 | 64,318 | IN/A | 7.34 | -2.54% | IN/A | IN/A | 5 | 0 | 0.00% | 12,863.616 |
| 2020 | IN/A | 66,022 | 7.52 | 2.37% | 66,022 | 7.52 | 5 | 0 | 0.00% | 13,204.479 |
| 2021 | IN/A | 65,834 | 7.52 | -0.01% | 65,834 | 7.52 | 5 | 0 | 0.00% | 13,166.862 |
| 2022 | IN/A | 65,834 | 7.52 | 0.00% | 65,834 | 7.52 | 5 | 0 | 0.00% | 13,166.862 |
| 2023 | IN/A | 65,834 | 7.52 | 0.00% | 65,834 | 7.52 | 5 | 0 | 0.00% | 13,166.862 |
| 2024 | IN/A | 66,022 | 7.52 | 0.01% | 66,022 | 7.52 | 5 | 0 | 0.00% | 13,204.479 |
| 2025 | IN/A | 65,834 | 7.52 | -0.01% | 65,834 | 7.52 | 5 | 0 | 0.00% | 13,166.862 |
| 2026 | IN/A | 65,834 | 7.52 | 0.00% | 65,834 | 7.52 | 5 | 0 | 0.00% | 13,166.862 |
| 2027 | IN/A | 65,834 | 7.52 | 0.00% | 65,834 | 7.52 | 5 | 0 | 0.00% | 13,166.862 |
| 2028 | IN/A | 66,022 | 7.52 | 0.01% | 66,022 | 7.52 | 5 | 0 | 0.00% | 13,204.479 |
| 2029 | IN/A | 65,834 | 7.52 | -0.01% | 65,834 | 7.52 | 5 | 0 | 0.00% | 13,166.862 |
| AARG %[1] (2020-2024) | | | 0.00% | | | | | | | 0.00% |
| AARG %[1] (2020-2029) | | | 0.00% | | | | | | | -0.03% |

1) AARG % = Annual Average Rate of Growth Percentage

## 5.6 Small Irrigation

The forecast for small irrigation retail load is 1.7 aMW in 2020 and decreasing to 1.6 aMW in 2029. The five and ten-year average annual rates of growth are -0.47% and -0.42% respectively. The ten-year forecast does not include any conservation. The forecast for the average annual customer count is a decrease of about 3 customers per year. See **Figure 5-6** and **Table 5-6** for the ten-year forecast detail.

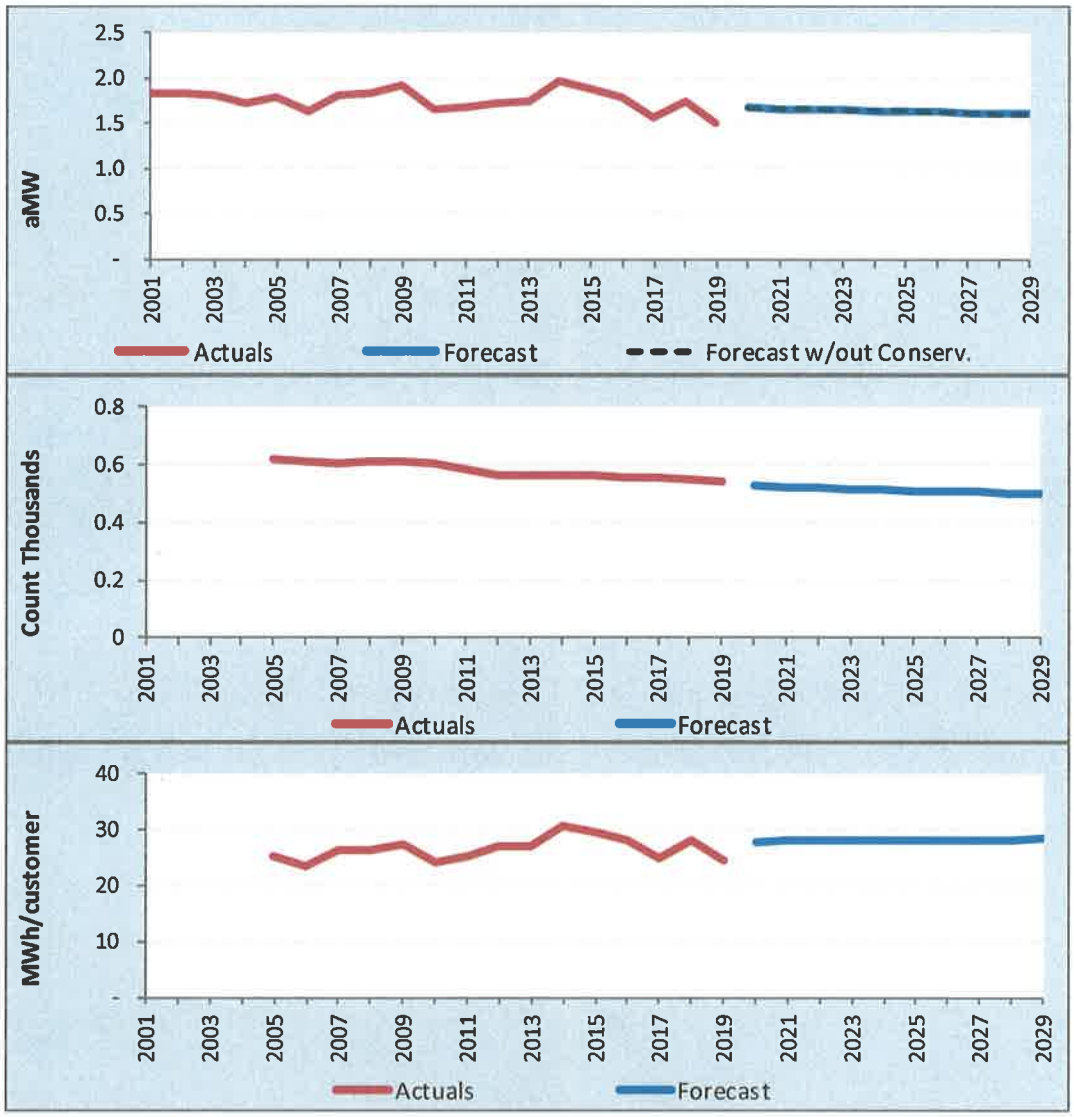


***Figure 5-6 – Small Irrigation forecast of retail load, customers and usage per customer***

*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) | Average Customer Count | Average Customer Count Change | Average Customer Count % Change | Usage Per Customer (MWh) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2001 | 15,951 | #N/A | 1.82 | -5.45% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2002 | 16,119 | #N/A | 1.84 | 1.05% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2003 | 15,873 | #N/A | 1.81 | -1.52% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2004 | 15,071 | #N/A | 1.72 | -5.31% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2005 | 15,724 | #N/A | 1.80 | 4.62% | #N/A | #N/A | 622 | #N/A | #N/A | 25.280 |
| 2006 | 14,305 | #N/A | 1.63 | -9.03% | #N/A | #N/A | 614 | -8 | -1.29% | 23.298 |
| 2007 | 15,849 | #N/A | 1.81 | 10.79% | #N/A | #N/A | 607 | -7 | -1.14% | 26.110 |
| 2008 | 16,043 | #N/A | 1.83 | 0.95% | #N/A | #N/A | 615 | 8 | 1.32% | 26.086 |
| 2009 | 16,884 | #N/A | 1.93 | 5.53% | #N/A | #N/A | 615 | 0 | 0.00% | 27.453 |
| 2010 | 14,446 | #N/A | 1.65 | -14.44% | #N/A | #N/A | 602 | -13 | -2.11% | 23.997 |
| 2011 | 14,607 | #N/A | 1.67 | 1.11% | #N/A | #N/A | 582 | -20 | -3.32% | 25.097 |
| 2012 | 15,165 | #N/A | 1.73 | 3.54% | #N/A | #N/A | 563 | -19 | -3.26% | 26.936 |
| 2013 | 15,211 | #N/A | 1.74 | 0.58% | #N/A | #N/A | 564 | 1 | 0.18% | 26.970 |
| 2014 | 17,209 | #N/A | 1.96 | 13.13% | #N/A | #N/A | 563 | -1 | -0.18% | 30.566 |
| 2015 | 16,425 | #N/A | 1.87 | -4.56% | #N/A | #N/A | 560 | -3 | -0.53% | 29.330 |
| 2016 | 15,597 | #N/A | 1.78 | -5.30% | #N/A | #N/A | 558 | -2 | -0.36% | 27.952 |
| 2017 | 13,754 | #N/A | 1.57 | -11.57% | #N/A | #N/A | 557 | -1 | -0.18% | 24.694 |
| 2018 | 15,312 | #N/A | 1.75 | 11.32% | #N/A | #N/A | 546 | -11 | -1.97% | 28.043 |
| 2019 | 13,199 | #N/A | 1.51 | -13.79% | #N/A | #N/A | 542 | -4 | -0.73% | 24.353 |
| 2020 | #N/A | 14,639 | 1.67 | 10.61% | 14,639 | 1.67 | 527 | -16 | -2.86% | 27.805 |
| 2021 | #N/A | 14,571 | 1.66 | -0.19% | 14,571 | 1.66 | 523 | -3 | -0.60% | 27.843 |
| 2022 | #N/A | 14,499 | 1.66 | -0.49% | 14,499 | 1.66 | 520 | -3 | -0.62% | 27.878 |
| 2023 | #N/A | 14,432 | 1.65 | -0.46% | 14,432 | 1.65 | 517 | -3 | -0.64% | 27.928 |
| 2024 | #N/A | 14,367 | 1.64 | -0.72% | 14,367 | 1.64 | 514 | -3 | -0.61% | 27.974 |
| 2025 | #N/A | 14,302 | 1.63 | -0.18% | 14,302 | 1.63 | 511 | -3 | -0.60% | 28.016 |
| 2026 | #N/A | 14,239 | 1.63 | -0.44% | 14,239 | 1.63 | 507 | -3 | -0.62% | 28.066 |
| 2027 | #N/A | 14,177 | 1.62 | -0.44% | 14,177 | 1.62 | 504 | -3 | -0.61% | 28.114 |
| 2028 | #N/A | 14,117 | 1.61 | -0.70% | 14,117 | 1.61 | 501 | -3 | -0.59% | 28.163 |
| 2029 | #N/A | 14,057 | 1.60 | -0.15% | 14,057 | 1.60 | 498 | -3 | -0.58% | 28.207 |
| AARG %[1] (2020-2024) | | | -0.47% | | | | | | | 0.15% |
| AARG %[1] (2020-2029) | | | -0.42% | | | | | | | 0.16% |

1) AARG % = Annual Average Rate of Growth Percentage

## 5.7 Large Irrigation

The forecast for large irrigation retail load is 46.7 aMW in 2020 and is estimated to remain flat over the ten-year forecast period, with no incremental conservation and no additional customers. See **Figure 5-7** and **Table 5-7** for the ten-year forecast detail.

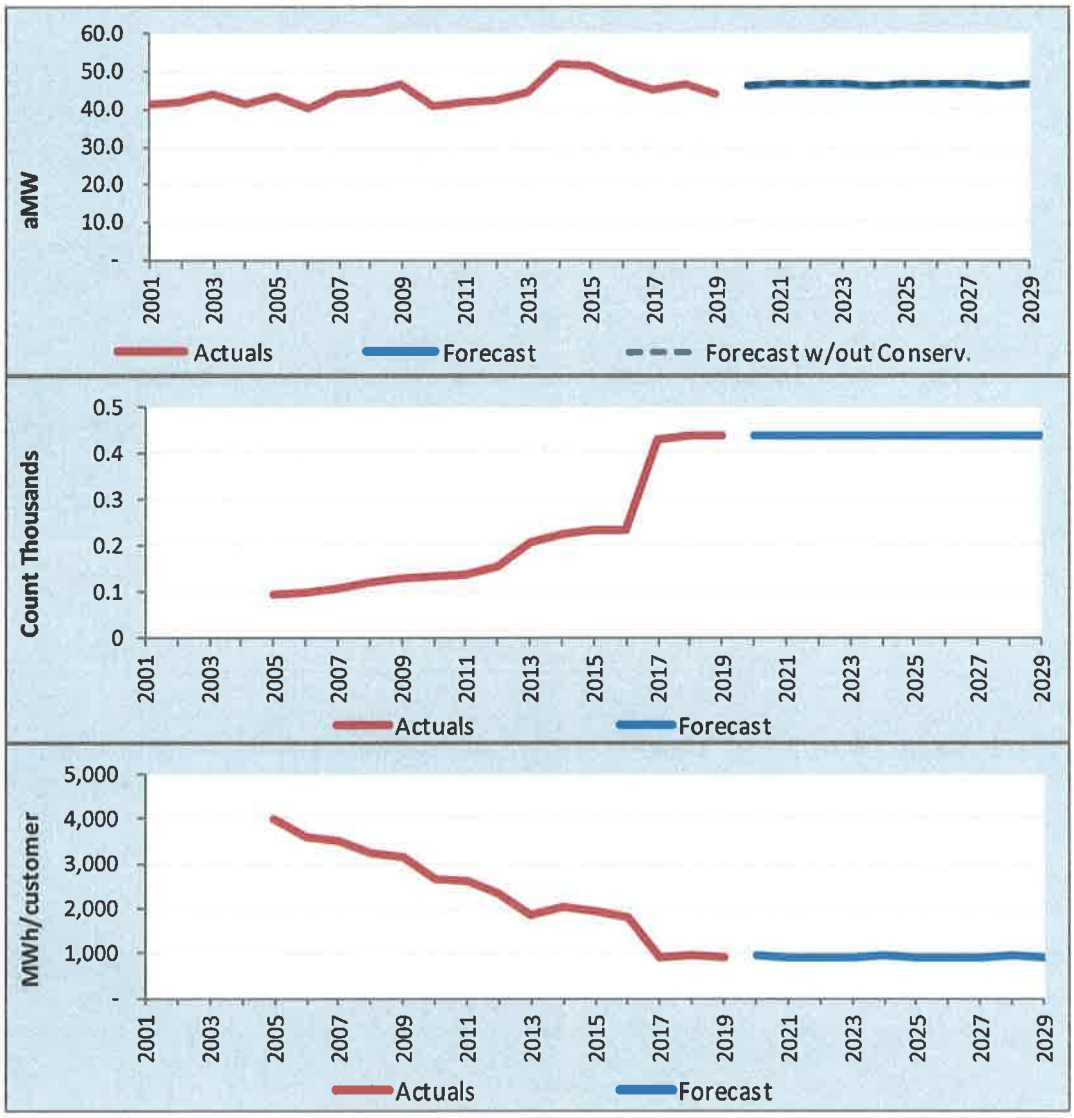


***Figure 5-7 – Large Irrigation forecast of retail load, customers and usage per customer***

*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) | Average Customer Count | Average Customer Count Change | Average Customer Count % Change | Usage Per Customer (MWh) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2001 | 359,731 | #N/A | 41.07 | -2.20% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2002 | 366,431 | #N/A | 41.83 | 1.86% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2003 | 385,995 | #N/A | 44.06 | 5.34% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2004 | 360,292 | #N/A | 41.02 | -6.91% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2005 | 381,927 | #N/A | 43.60 | 6.30% | #N/A | #N/A | 96 | #N/A | #N/A | 3,978.407 |
| 2006 | 353,743 | #N/A | 40.38 | -7.38% | #N/A | #N/A | 99 | 3 | 3.13% | 3,573.162 |
| 2007 | 386,402 | #N/A | 44.11 | 9.23% | #N/A | #N/A | 110 | 11 | 11.11% | 3,512.746 |
| 2008 | 391,389 | #N/A | 44.56 | 1.01% | #N/A | #N/A | 121 | 11 | 10.00% | 3,234.619 |
| 2009 | 410,386 | #N/A | 46.85 | 5.14% | #N/A | #N/A | 131 | 10 | 8.26% | 3,132.715 |
| 2010 | 356,875 | #N/A | 40.74 | -13.04% | #N/A | #N/A | 134 | 3 | 2.29% | 2,663.248 |
| 2011 | 367,393 | #N/A | 41.94 | 2.95% | #N/A | #N/A | 140 | 6 | 4.48% | 2,624.234 |
| 2012 | 370,573 | #N/A | 42.19 | 0.59% | #N/A | #N/A | 158 | 18 | 12.86% | 2,345.402 |
| 2013 | 387,408 | #N/A | 44.22 | 4.83% | #N/A | #N/A | 208 | 50 | 31.65% | 1,862.539 |
| 2014 | 455,435 | #N/A | 51.99 | 17.56% | #N/A | #N/A | 225 | 17 | 8.17% | 2,024.154 |
| 2015 | 451,777 | #N/A | 51.57 | -0.80% | #N/A | #N/A | 234 | 9 | 4.00% | 1,930.671 |
| 2016 | 419,588 | #N/A | 47.77 | -7.38% | #N/A | #N/A | 233 | -1 | -0.43% | 1,800.809 |
| 2017 | 392,051 | #N/A | 44.75 | -6.31% | #N/A | #N/A | 430 | 197 | 84.55% | 911.746 |
| 2018 | 409,299 | #N/A | 46.72 | 4.40% | #N/A | #N/A | 437 | 7 | 1.63% | 936.611 |
| 2019 | 385,979 | #N/A | 44.06 | -5.70% | #N/A | #N/A | 437 | 0 | 0.00% | 883.247 |
| 2020 | #N/A | 410,536 | 46.74 | 6.07% | 410,536 | 46.74 | 437 | 0 | 0.00% | 939.441 |
| 2021 | #N/A | 410,525 | 46.86 | 0.27% | 410,525 | 46.86 | 437 | 0 | 0.00% | 939.416 |
| 2022 | #N/A | 410,525 | 46.86 | 0.00% | 410,525 | 46.86 | 437 | 0 | 0.00% | 939.416 |
| 2023 | #N/A | 410,525 | 46.86 | 0.00% | 410,525 | 46.86 | 437 | 0 | 0.00% | 939.416 |
| 2024 | #N/A | 410,536 | 46.74 | -0.27% | 410,536 | 46.74 | 437 | 0 | 0.00% | 939.441 |
| 2025 | #N/A | 410,525 | 46.86 | 0.27% | 410,525 | 46.86 | 437 | 0 | 0.00% | 939.416 |
| 2026 | #N/A | 410,525 | 46.86 | 0.00% | 410,525 | 46.86 | 437 | 0 | 0.00% | 939.416 |
| 2027 | #N/A | 410,525 | 46.86 | 0.00% | 410,525 | 46.86 | 437 | 0 | 0.00% | 939.416 |
| 2028 | #N/A | 410,536 | 46.74 | -0.27% | 410,536 | 46.74 | 437 | 0 | 0.00% | 939.441 |
| 2029 | #N/A | 410,525 | 46.86 | 0.27% | 410,525 | 46.86 | 437 | 0 | 0.00% | 939.416 |
| AARG %[1] (2020-2024) | | | 0.00% | | | | | | | 0.00% |
| AARG %[1] (2020-2029) | | | 0.03% | | | | | | | 0.00% |

1) AARG % = Annual Average Rate of Growth Percentage

## 5.8 Street Lighting

The forecast for street lighting retail load is 0.29 aMW in 2020 and is estimated to remain flat over the ten-year forecast period, with no incremental conservation and no additional customers. 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.

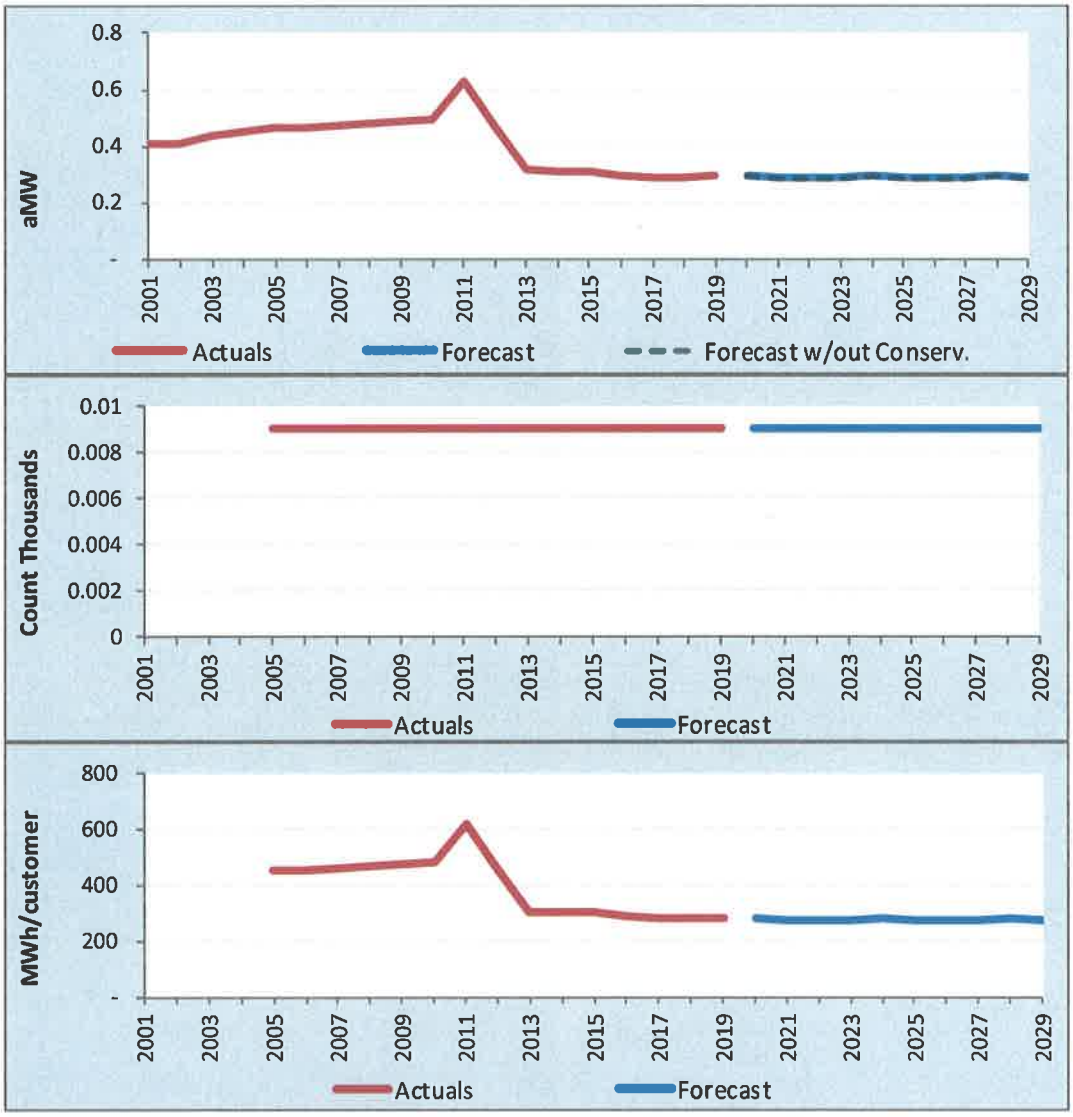


***Figure 5-8 – Street Lighting forecast of retail load, customers and usage per customer***

*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) | Average Customer Count | Average Customer Count Change | Average Customer Count % Change | Usage Per Customer (MWh) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2001 | 3,547 | #N/A | 0.40 | 1.55% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2002 | 3,593 | #N/A | 0.41 | 1.30% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2003 | 3,807 | #N/A | 0.43 | 5.94% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2004 | 3,957 | #N/A | 0.45 | 3.66% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2005 | 4,067 | #N/A | 0.46 | 3.06% | #N/A | #N/A | 9 | #N/A | #N/A | 451.882 |
| 2006 | 4,084 | #N/A | 0.47 | 0.41% | #N/A | #N/A | 9 | 0 | 0.00% | 453.740 |
| 2007 | 4,151 | #N/A | 0.47 | 1.66% | #N/A | #N/A | 9 | 0 | 0.00% | 461.266 |
| 2008 | 4,218 | #N/A | 0.48 | 1.33% | #N/A | #N/A | 9 | 0 | 0.00% | 468.669 |
| 2009 | 4,268 | #N/A | 0.49 | 1.46% | #N/A | #N/A | 9 | 0 | 0.00% | 474.203 |
| 2010 | 4,339 | #N/A | 0.50 | 1.68% | #N/A | #N/A | 9 | 0 | 0.00% | 482.159 |
| 2011 | 5,532 | #N/A | 0.63 | 27.48% | #N/A | #N/A | 9 | 0 | 0.00% | 614.671 |
| 2012 | 4,136 | #N/A | 0.47 | -25.43% | #N/A | #N/A | 9 | 0 | 0.00% | 459.597 |
| 2013 | 2,751 | #N/A | 0.31 | -33.31% | #N/A | #N/A | 9 | 0 | 0.00% | 305.647 |
| 2014 | 2,721 | #N/A | 0.31 | -1.10% | #N/A | #N/A | 9 | 0 | 0.00% | 302.278 |
| 2015 | 2,704 | #N/A | 0.31 | -0.62% | #N/A | #N/A | 9 | 0 | 0.00% | 300.405 |
| 2016 | 2,589 | #N/A | 0.29 | -4.50% | #N/A | #N/A | 9 | 0 | 0.00% | 287.682 |
| 2017 | 2,535 | #N/A | 0.29 | -1.83% | #N/A | #N/A | 9 | 0 | 0.00% | 281.642 |
| 2018 | 2,537 | #N/A | 0.29 | 0.10% | #N/A | #N/A | 9 | 0 | 0.00% | 281.920 |
| 2019 | 2,546 | #N/A | 0.29 | 0.34% | #N/A | #N/A | 9 | 0 | 0.00% | 282.868 |
| 2020 | #N/A | 2,553 | 0.29 | 0.02% | 2,553 | 0.29 | 9 | 0 | 0.00% | 283.708 |
| 2021 | #N/A | 2,546 | 0.29 | -0.02% | 2,546 | 0.29 | 9 | 0 | 0.00% | 282.868 |
| 2022 | #N/A | 2,546 | 0.29 | 0.00% | 2,546 | 0.29 | 9 | 0 | 0.00% | 282.868 |
| 2023 | #N/A | 2,546 | 0.29 | 0.00% | 2,546 | 0.29 | 9 | 0 | 0.00% | 282.868 |
| 2024 | #N/A | 2,553 | 0.29 | 0.02% | 2,553 | 0.29 | 9 | 0 | 0.00% | 283.708 |
| 2025 | #N/A | 2,546 | 0.29 | -0.02% | 2,546 | 0.29 | 9 | 0 | 0.00% | 282.868 |
| 2026 | #N/A | 2,546 | 0.29 | 0.00% | 2,546 | 0.29 | 9 | 0 | 0.00% | 282.868 |
| 2027 | #N/A | 2,546 | 0.29 | 0.00% | 2,546 | 0.29 | 9 | 0 | 0.00% | 282.868 |
| 2028 | #N/A | 2,553 | 0.29 | 0.02% | 2,553 | 0.29 | 9 | 0 | 0.00% | 283.708 |
| 2029 | #N/A | 2,546 | 0.29 | -0.02% | 2,546 | 0.29 | 9 | 0 | 0.00% | 282.868 |
| AARG %[1] (2020-2024) | | | 0.00% | | | | | | | 0.00% |
| AARG %[1] (2020-2029) | | | 0.00% | | | | | | | -0.03% |

1) AARG % = Annual Average Rate of Growth Percentage

## 5.9 Security Lighting

The forecast for security lighting retail load is 0.11 aMW and is estimated to remain flat over the ten-year forecast period, with no incremental conservation and no additional customers. See **Figure 5-9** and **Table 5-9** for the ten-year forecast detail.

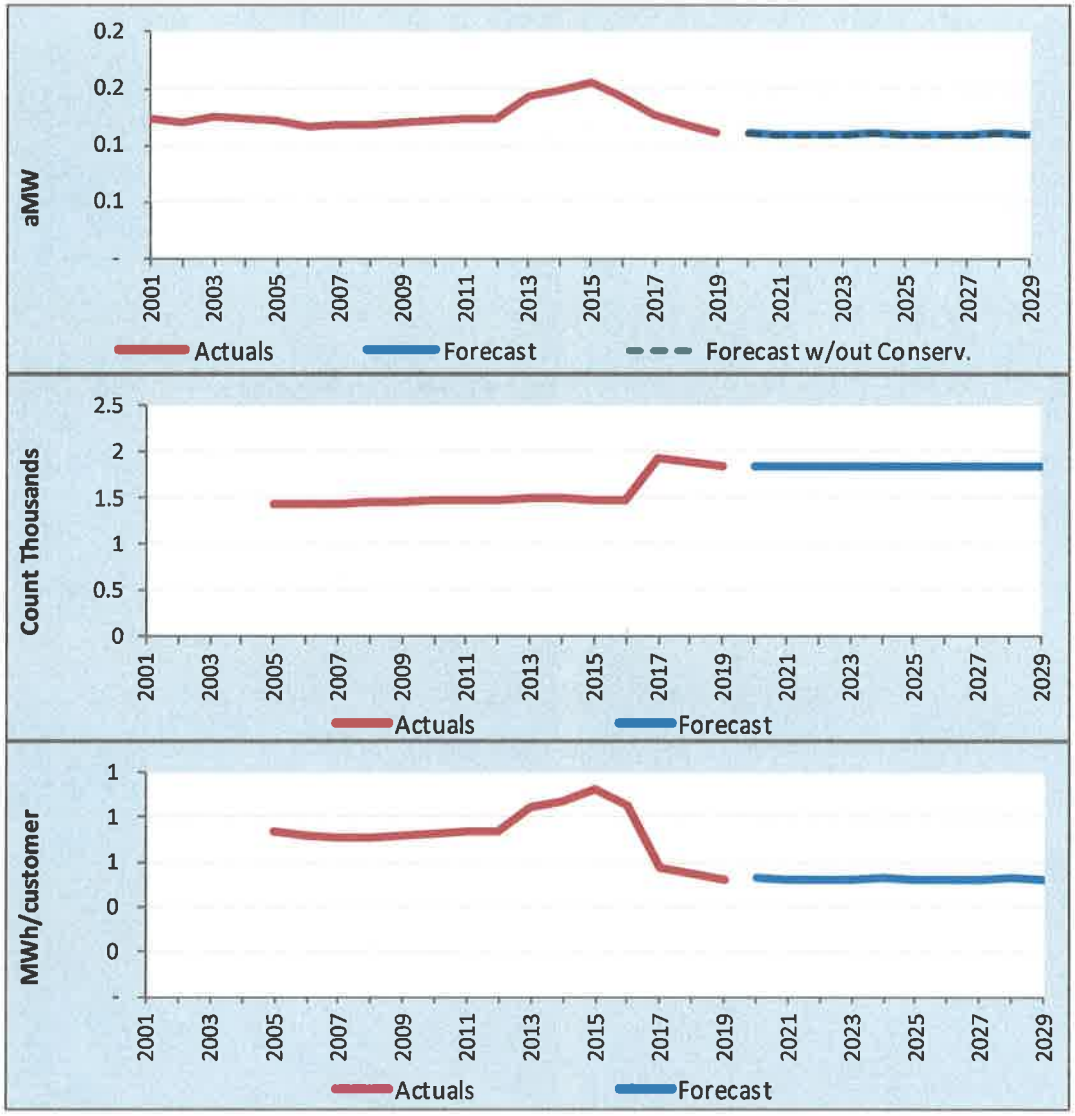


***Figure 5-9 – Security Lighting forecast of retail load, customers and usage per customer***

***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) | Average Customer Count | Average Customer Count Change | Average Customer Count % Change | Usage Per Customer (MWh) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2001 | 1,086 | #N/A | 0.12 | 1.92% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2002 | 1,055 | #N/A | 0.12 | -2.87% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2003 | 1,094 | #N/A | 0.12 | 3.71% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2004 | 1,091 | #N/A | 0.12 | -0.51% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2005 | 1,066 | #N/A | 0.12 | -1.99% | #N/A | #N/A | 1,440 | #N/A | #N/A | 0.741 |
| 2006 | 1,025 | #N/A | 0.12 | -3.92% | #N/A | #N/A | 1,429 | -11 | -0.76% | 0.717 |
| 2007 | 1,028 | #N/A | 0.12 | 0.29% | #N/A | #N/A | 1,440 | 11 | 0.77% | 0.714 |
| 2008 | 1,036 | #N/A | 0.12 | 0.52% | #N/A | #N/A | 1,451 | 11 | 0.76% | 0.714 |
| 2009 | 1,045 | #N/A | 0.12 | 1.19% | #N/A | #N/A | 1,453 | 2 | 0.14% | 0.719 |
| 2010 | 1,068 | #N/A | 0.12 | 2.22% | #N/A | #N/A | 1,468 | 15 | 1.03% | 0.728 |
| 2011 | 1,087 | #N/A | 0.12 | 1.72% | #N/A | #N/A | 1,482 | 14 | 0.95% | 0.733 |
| 2012 | 1,084 | #N/A | 0.12 | -0.56% | #N/A | #N/A | 1,480 | -2 | -0.13% | 0.732 |
| 2013 | 1,257 | #N/A | 0.14 | 16.34% | #N/A | #N/A | 1,488 | 8 | 0.54% | 0.845 |
| 2014 | 1,297 | #N/A | 0.15 | 3.12% | #N/A | #N/A | 1,493 | 5 | 0.34% | 0.869 |
| 2015 | 1,364 | #N/A | 0.16 | 5.19% | #N/A | #N/A | 1,482 | -11 | -0.74% | 0.920 |
| 2016 | 1,263 | #N/A | 0.14 | -7.64% | #N/A | #N/A | 1,476 | -6 | -0.40% | 0.856 |
| 2017 | 1,112 | #N/A | 0.13 | -11.72% | #N/A | #N/A | 1,943 | 467 | 31.64% | 0.572 |
| 2018 | 1,028 | #N/A | 0.12 | -7.60% | #N/A | #N/A | 1,888 | -55 | -2.83% | 0.544 |
| 2019 | 969 | #N/A | 0.11 | -5.68% | #N/A | #N/A | 1,854 | -34 | -1.80% | 0.523 |
| 2020 | #N/A | 972 | 0.11 | 0.03% | 972 | 0.11 | 1,837 | -17 | -0.92% | 0.529 |
| 2021 | #N/A | 969 | 0.11 | -0.03% | 969 | 0.11 | 1,837 | 0 | 0.00% | 0.528 |
| 2022 | #N/A | 969 | 0.11 | 0.00% | 969 | 0.11 | 1,837 | 0 | 0.00% | 0.528 |
| 2023 | #N/A | 969 | 0.11 | 0.00% | 969 | 0.11 | 1,837 | 0 | 0.00% | 0.528 |
| 2024 | #N/A | 972 | 0.11 | 0.03% | 972 | 0.11 | 1,837 | 0 | 0.00% | 0.529 |
| 2025 | #N/A | 969 | 0.11 | -0.03% | 969 | 0.11 | 1,837 | 0 | 0.00% | 0.528 |
| 2026 | #N/A | 969 | 0.11 | 0.00% | 969 | 0.11 | 1,837 | 0 | 0.00% | 0.528 |
| 2027 | #N/A | 969 | 0.11 | 0.00% | 969 | 0.11 | 1,837 | 0 | 0.00% | 0.528 |
| 2028 | #N/A | 972 | 0.11 | 0.03% | 972 | 0.11 | 1,837 | 0 | 0.00% | 0.529 |
| 2029 | #N/A | 969 | 0.11 | -0.03% | 969 | 0.11 | 1,837 | 0 | 0.00% | 0.528 |
| AARG %[1] (2020-2024) | | | 0.00% | | | | | | | 0.00% |
| AARG %[1] (2020-2029) | | | 0.00% | | | | | | | -0.03% |

1) AARG % = Annual Average Rate of Growth Percentage

## 5.10 Unmetered Flats

The forecast for unmetered flats retail load is 0.34 aMW and is estimated to remain flat over the ten-year forecast period, with no incremental conservation and no additional customers. See **Figure 5-10** and **Table 5-10** for the ten-year forecast detail.

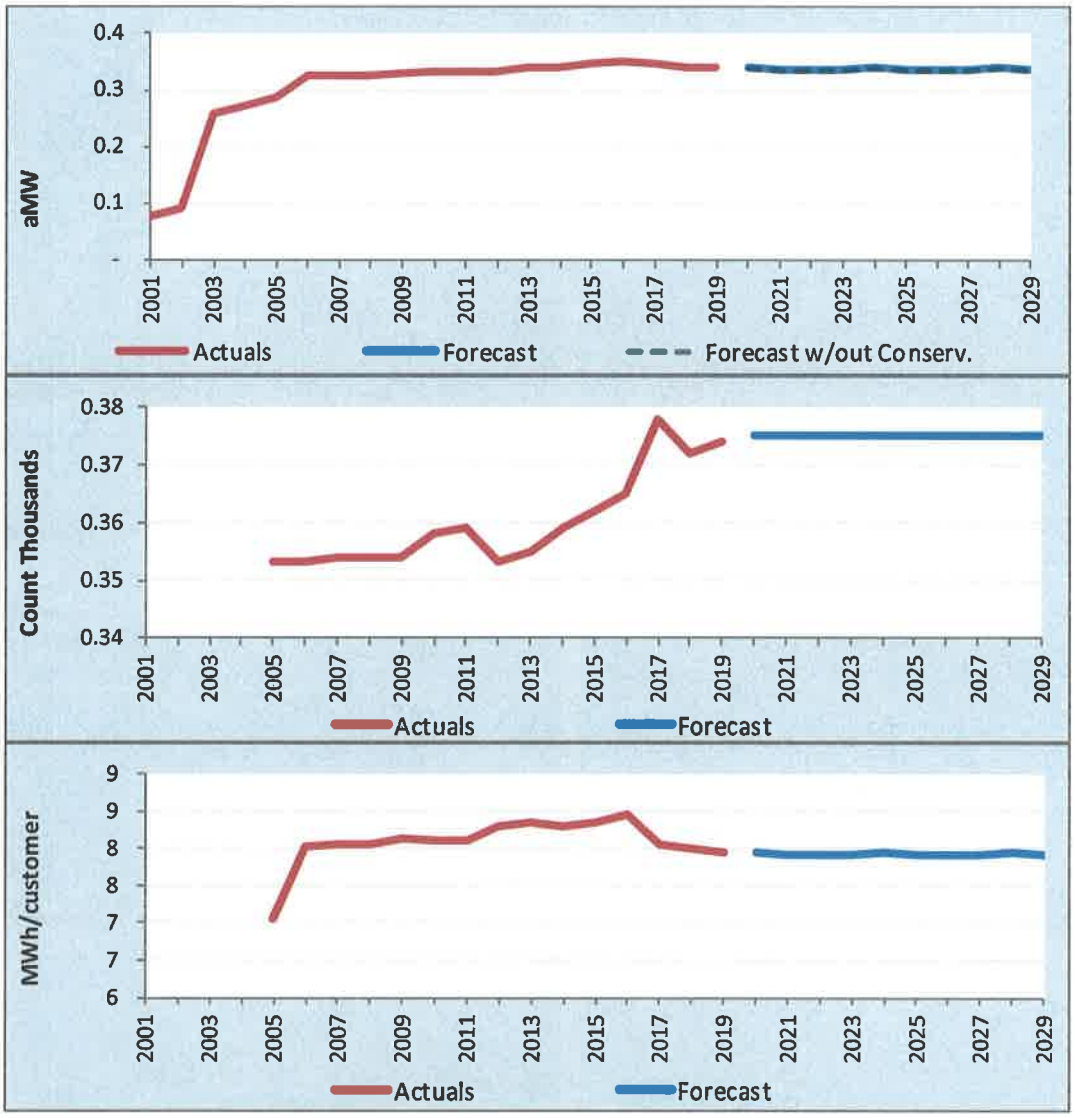


***Figure 5-10 – Unmetered Flats forecast of retail load, customers and usage per customer***

*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) | Average Customer Count | Average Customer Count Change | Average Customer Count % Change | Usage Per Customer (MWh) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2001 | 651 | #N/A | 0.07 | 2.47% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2002 | 784 | #N/A | 0.09 | 20.35% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2003 | 2,254 | #N/A | 0.26 | 187.61% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2004 | 2,390 | #N/A | 0.27 | 5.74% | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2005 | 2,492 | #N/A | 0.28 | 4.56% | #N/A | #N/A | 353 | #N/A | #N/A | 7.059 |
| 2006 | 2,833 | #N/A | 0.32 | 13.70% | #N/A | #N/A | 353 | 0 | 0.00% | 8.026 |
| 2007 | 2,846 | #N/A | 0.32 | 0.47% | #N/A | #N/A | 354 | 1 | 0.28% | 8.041 |
| 2008 | 2,848 | #N/A | 0.32 | -0.21% | #N/A | #N/A | 354 | 0 | 0.00% | 8.046 |
| 2009 | 2,875 | #N/A | 0.33 | 1.22% | #N/A | #N/A | 354 | 0 | 0.00% | 8.122 |
| 2010 | 2,896 | #N/A | 0.33 | 0.72% | #N/A | #N/A | 358 | 4 | 1.13% | 8.089 |
| 2011 | 2,909 | #N/A | 0.33 | 0.46% | #N/A | #N/A | 359 | 1 | 0.28% | 8.103 |
| 2012 | 2,928 | #N/A | 0.33 | 0.36% | #N/A | #N/A | 353 | -6 | -1.67% | 8.294 |
| 2013 | 2,964 | #N/A | 0.34 | 1.50% | #N/A | #N/A | 355 | 2 | 0.57% | 8.348 |
| 2014 | 2,981 | #N/A | 0.34 | 0.57% | #N/A | #N/A | 359 | 4 | 1.13% | 8.302 |
| 2015 | 3,023 | #N/A | 0.35 | 1.41% | #N/A | #N/A | 362 | 3 | 0.84% | 8.350 |
| 2016 | 3,083 | #N/A | 0.35 | 1.72% | #N/A | #N/A | 365 | 3 | 0.83% | 8.447 |
| 2017 | 3,044 | #N/A | 0.35 | -0.98% | #N/A | #N/A | 378 | 13 | 3.56% | 8.054 |
| 2018 | 2,975 | #N/A | 0.34 | -2.28% | #N/A | #N/A | 372 | -6 | -1.59% | 7.997 |
| 2019 | 2,971 | #N/A | 0.34 | -0.12% | #N/A | #N/A | 374 | 2 | 0.54% | 7.944 |
| 2020 | #N/A | 2,980 | 0.34 | 0.02% | 2,980 | 0.34 | 375 | 1 | 0.27% | 7.947 |
| 2021 | #N/A | 2,971 | 0.34 | -0.02% | 2,971 | 0.34 | 375 | 0 | 0.00% | 7.923 |
| 2022 | #N/A | 2,971 | 0.34 | 0.00% | 2,971 | 0.34 | 375 | 0 | 0.00% | 7.923 |
| 2023 | #N/A | 2,971 | 0.34 | 0.00% | 2,971 | 0.34 | 375 | 0 | 0.00% | 7.923 |
| 2024 | #N/A | 2,980 | 0.34 | 0.02% | 2,980 | 0.34 | 375 | 0 | 0.00% | 7.947 |
| 2025 | #N/A | 2,971 | 0.34 | -0.02% | 2,971 | 0.34 | 375 | 0 | 0.00% | 7.923 |
| 2026 | #N/A | 2,971 | 0.34 | 0.00% | 2,971 | 0.34 | 375 | 0 | 0.00% | 7.923 |
| 2027 | #N/A | 2,971 | 0.34 | 0.00% | 2,971 | 0.34 | 375 | 0 | 0.00% | 7.923 |
| 2028 | #N/A | 2,980 | 0.34 | 0.02% | 2,980 | 0.34 | 375 | 0 | 0.00% | 7.947 |
| 2029 | #N/A | 2,971 | 0.34 | -0.02% | 2,971 | 0.34 | 375 | 0 | 0.00% | 7.923 |
| AARG %[1] (2020-2024) | | | 0.00% | | | | | | | 0.00% |
| AARG %[1] (2020-2029) | | | 0.00% | | | | | | | -0.03% |

1) AARG % = Annual Average Rate of Growth Percentage

# 6. Appendix A – Summary Tables

# Appendix A

*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) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 | 179.2 | | | 8.6 | 4.6% | 187.8 | | | #N/A | #N/A | #N/A | | | 352.0 | | |
| 2002 | 181.2 | | | 5.9 | 3.2% | 187.1 | | | #N/A | #N/A | #N/A | | | 374.0 | | |
| 2003 | 180.5 | | | 6.2 | 3.3% | 186.7 | | | #N/A | #N/A | #N/A | | | 384.2 | | |
| 2004 | 181.8 | | | 5.5 | 3.0% | 187.4 | | | #N/A | #N/A | #N/A | | | 382.2 | | |
| 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 | | |
| Forecast | Low | Base | High | aMW | % | Low | Base | High | aMW | % | Low | Base | High | Low | Base | High |
| 2020 | 194.0 | 203.0 | 211.9 | 6.9 | 3.4% | 200.9 | 209.8 | 218.8 | 4.0 | 1.9% | 204.9 | 213.8 | 222.8 | 403.9 | 422.5 | 441.1 |
| 2021 | 194.7 | 203.7 | 212.7 | 6.9 | 3.4% | 201.6 | 210.6 | 219.6 | 4.0 | 1.9% | 205.6 | 214.6 | 223.6 | 404.3 | 422.9 | 441.6 |
| 2022 | 194.9 | 203.9 | 212.9 | 6.9 | 3.4% | 201.8 | 210.8 | 219.8 | 4.0 | 1.9% | 205.8 | 214.8 | 223.8 | 404.2 | 423.0 | 441.7 |
| 2023 | 195.5 | 204.6 | 213.6 | 6.9 | 3.4% | 202.5 | 211.5 | 220.6 | 4.0 | 1.9% | 206.5 | 215.5 | 224.6 | 405.6 | 424.4 | 443.2 |
| 2024 | 195.6 | 204.7 | 213.7 | 6.9 | 3.4% | 202.5 | 211.6 | 220.7 | 4.0 | 1.9% | 206.5 | 215.6 | 224.7 | 406.5 | 425.4 | 444.3 |
| 2025 | 196.2 | 205.4 | 214.5 | 7.0 | 3.4% | 203.2 | 212.3 | 221.4 | 4.0 | 1.9% | 207.2 | 216.3 | 225.5 | 406.8 | 425.7 | 444.6 |
| 2026 | 196.0 | 205.2 | 214.3 | 6.9 | 3.4% | 203.0 | 212.1 | 221.3 | 4.0 | 1.9% | 207.0 | 216.1 | 225.3 | 405.8 | 424.8 | 443.8 |
| 2027 | 196.6 | 205.8 | 215.0 | 7.0 | 3.4% | 203.6 | 212.8 | 221.9 | 4.0 | 1.9% | 207.6 | 216.8 | 226.0 | 407.0 | 426.1 | 445.1 |
| 2028 | 196.4 | 205.6 | 214.8 | 7.0 | 3.4% | 203.3 | 212.5 | 221.7 | 4.0 | 1.9% | 207.4 | 216.6 | 225.8 | 407.1 | 426.2 | 445.4 |
| 2029 | 196.9 | 206.2 | 215.4 | 7.0 | 3.4% | 203.9 | 213.1 | 222.4 | 4.0 | 1.9% | 208.0 | 217.2 | 226.4 | 407.1 | 426.3 | 445.4 |

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

2) BPA Trans. = Bonneville Power Administration Transmission; Forecast loss factor is per Schedule 9 of BPA's Open Access Transmission Tariff (OATT).

# Appendix A

*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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 | 70.5 | 12.9 | 19.0 | 25.2 | 8.1 | 1.8 | 41.1 | 0.4 | 0.1 | 0.1 | 179.2 | #N/A |
| 2002 | 71.0 | 12.9 | 18.7 | 25.1 | 9.2 | 1.8 | 41.8 | 0.4 | 0.1 | 0.1 | 181.2 | 1.13% |
| 2003 | 69.0 | 12.9 | 19.4 | 25.8 | 6.6 | 1.8 | 44.1 | 0.4 | 0.1 | 0.3 | 180.5 | -0.44% |
| 2004 | 70.7 | 13.2 | 19.1 | 27.3 | 7.9 | 1.7 | 41.0 | 0.5 | 0.1 | 0.3 | 181.8 | 0.76% |
| 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 | 84.2 | 14.4 | 21.1 | 26.5 | 7.5 | 1.7 | 46.7 | 0.3 | 0.1 | 0.3 | 203.0 | 0.66% |
| 2021 | 84.7 | 14.5 | 21.2 | 26.5 | 7.5 | 1.7 | 46.9 | 0.3 | 0.1 | 0.3 | 203.7 | 0.37% |
| 2022 | 85.0 | 14.5 | 21.2 | 26.4 | 7.5 | 1.7 | 46.9 | 0.3 | 0.1 | 0.3 | 203.9 | 0.08% |
| 2023 | 85.5 | 14.6 | 21.3 | 26.4 | 7.5 | 1.6 | 46.9 | 0.3 | 0.1 | 0.3 | 204.6 | 0.35% |
| 2024 | 85.9 | 14.6 | 21.3 | 26.3 | 7.5 | 1.6 | 46.7 | 0.3 | 0.1 | 0.3 | 204.7 | 0.04% |
| 2025 | 86.3 | 14.6 | 21.4 | 26.3 | 7.5 | 1.6 | 46.9 | 0.3 | 0.1 | 0.3 | 205.4 | 0.34% |
| 2026 | 86.4 | 14.6 | 21.4 | 26.1 | 7.5 | 1.6 | 46.9 | 0.3 | 0.1 | 0.3 | 205.2 | -0.09% |
| 2027 | 86.9 | 14.6 | 21.5 | 26.1 | 7.5 | 1.6 | 46.9 | 0.3 | 0.1 | 0.3 | 205.8 | 0.30% |
| 2028 | 87.1 | 14.6 | 21.4 | 25.9 | 7.5 | 1.6 | 46.7 | 0.3 | 0.1 | 0.3 | 205.6 | -0.11% |
| 2029 | 87.4 | 14.6 | 21.5 | 25.9 | 7.5 | 1.6 | 46.9 | 0.3 | 0.1 | 0.3 | 206.2 | 0.29% |
| AARG %[1] 2020-2024 | 0.51% | 0.19% | 0.22% | -0.26% | 0.00% | -0.47% | 0.00% | 0.00% | 0.00% | 0.00% | 0.21% | |
| AARG %[1] 2020-2029 | 0.42% | 0.15% | 0.17% | -0.27% | 0.00% | -0.42% | 0.03% | 0.00% | 0.00% | 0.00% | 0.17% | |

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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2020 | 88.4 | 14.9 | 21.9 | 27.3 | 7.5 | 1.7 | 49.4 | 0.3 | 0.1 | 0.3 | 211.9 |
| 2021 | 88.9 | 15.0 | 22.0 | 27.3 | 7.5 | 1.7 | 49.5 | 0.3 | 0.1 | 0.3 | 212.7 |
| 2022 | 89.3 | 15.0 | 22.0 | 27.1 | 7.5 | 1.7 | 49.5 | 0.3 | 0.1 | 0.3 | 212.9 |
| 2023 | 89.8 | 15.1 | 22.1 | 27.1 | 7.5 | 1.7 | 49.5 | 0.3 | 0.1 | 0.3 | 213.6 |
| 2024 | 90.3 | 15.1 | 22.1 | 27.0 | 7.5 | 1.7 | 49.4 | 0.3 | 0.1 | 0.3 | 213.7 |
| 2025 | 90.7 | 15.1 | 22.2 | 27.0 | 7.5 | 1.7 | 49.5 | 0.3 | 0.1 | 0.3 | 214.5 |
| 2026 | 90.8 | 15.1 | 22.1 | 26.8 | 7.5 | 1.7 | 49.5 | 0.3 | 0.1 | 0.3 | 214.3 |
| 2027 | 91.3 | 15.1 | 22.2 | 26.8 | 7.5 | 1.7 | 49.5 | 0.3 | 0.1 | 0.3 | 215.0 |
| 2028 | 91.5 | 15.1 | 22.2 | 26.6 | 7.5 | 1.7 | 49.4 | 0.3 | 0.1 | 0.3 | 214.8 |
| 2029 | 91.9 | 15.2 | 22.2 | 26.6 | 7.5 | 1.7 | 49.5 | 0.3 | 0.1 | 0.3 | 215.4 |
| AARG %[1] 2020-2024 | 0.51% | 0.20% | 0.22% | -0.25% | 0.00% | -0.47% | 0.00% | 0.00% | 0.00% | 0.00% | 0.22% |
| AARG %[1] 2020-2029 | 0.43% | 0.16% | 0.18% | -0.26% | 0.00% | -0.42% | 0.03% | 0.00% | 0.00% | 0.00% | 0.18% |

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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2020 | 79.9 | 13.9 | 20.4 | 25.8 | 7.5 | 1.6 | 44.1 | 0.3 | 0.1 | 0.3 | 194.0 |
| 2021 | 80.4 | 14.0 | 20.5 | 25.8 | 7.5 | 1.6 | 44.2 | 0.3 | 0.1 | 0.3 | 194.7 |
| 2022 | 80.7 | 14.0 | 20.5 | 25.7 | 7.5 | 1.6 | 44.2 | 0.3 | 0.1 | 0.3 | 194.9 |
| 2023 | 81.2 | 14.1 | 20.6 | 25.7 | 7.5 | 1.6 | 44.2 | 0.3 | 0.1 | 0.3 | 195.5 |
| 2024 | 81.5 | 14.1 | 20.6 | 25.5 | 7.5 | 1.6 | 44.1 | 0.3 | 0.1 | 0.3 | 195.6 |
| 2025 | 81.9 | 14.1 | 20.7 | 25.5 | 7.5 | 1.6 | 44.2 | 0.3 | 0.1 | 0.3 | 196.2 |
| 2026 | 82.0 | 14.1 | 20.6 | 25.3 | 7.5 | 1.5 | 44.2 | 0.3 | 0.1 | 0.3 | 196.0 |
| 2027 | 82.5 | 14.1 | 20.7 | 25.3 | 7.5 | 1.5 | 44.2 | 0.3 | 0.1 | 0.3 | 196.6 |
| 2028 | 82.6 | 14.1 | 20.7 | 25.2 | 7.5 | 1.5 | 44.1 | 0.3 | 0.1 | 0.3 | 196.4 |
| 2029 | 82.9 | 14.1 | 20.7 | 25.2 | 7.5 | 1.5 | 44.2 | 0.3 | 0.1 | 0.3 | 196.9 |
| AARG %[1] 2020-2024 | 0.50% | 0.18% | 0.21% | -0.26% | 0.00% | -0.47% | 0.00% | 0.00% | 0.00% | 0.00% | 0.20% |
| AARG %[1] 2020-2029 | 0.41% | 0.14% | 0.16% | -0.28% | 0.00% | -0.42% | 0.03% | 0.00% | 0.00% | 0.00% | 0.17% |

1) AARG % = Annual Average Rate of Growth Percentage

# Appendix A

*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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 | 196.3 | 186.2 | 157.4 | 159.9 | 191.3 | 216.5 | 234.0 | 208.1 | 190.2 | 140.4 | 132.3 | 138.1 | 179.2 |
| 2002 | 174.7 | 174.8 | 155.8 | 172.8 | 184.3 | 208.9 | 249.3 | 240.7 | 169.9 | 133.5 | 159.2 | 150.0 | 181.2 |
| 2003 | 164.5 | 165.0 | 139.7 | 147.9 | 183.3 | 239.3 | 256.4 | 237.7 | 185.5 | 144.1 | 141.0 | 159.2 | 180.5 |
| 2004 | 202.1 | 175.1 | 147.2 | 165.0 | 177.0 | 211.2 | 260.8 | 231.8 | 178.4 | 138.6 | 146.1 | 147.1 | 181.8 |
| 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 |
| **Min. 2001-2019** | **164.5** | **157.1** | **139.7** | **147.9** | **174.5** | **204.6** | **234.0** | **208.1** | **167.1** | **124.0** | **127.3** | **138.1** | **177.6** |
| **Avg. 2015-2019** | **194.2** | **193.6** | **163.6** | **175.0** | **200.3** | **268.8** | **277.7** | **256.1** | **193.7** | **148.7** | **145.9** | **170.5** | **199.1** |
| **Max. 2001-2019** | **228.0** | **221.2** | **192.3** | **193.5** | **210.4** | **288.8** | **296.2** | **263.1** | **209.0** | **161.9** | **160.2** | **184.3** | **203.8** |
| 2020 | 200.1 | 198.7 | 166.9 | 177.8 | 203.1 | 272.2 | 281.8 | 260.4 | 197.0 | 151.5 | 149.4 | 175.8 | 203.0 |
| 2021 | 201.2 | 199.8 | 167.7 | 178.5 | 203.6 | 272.8 | 282.4 | 261.2 | 197.7 | 152.0 | 150.1 | 176.7 | 203.7 |
| 2022 | 201.7 | 200.2 | 167.9 | 178.5 | 203.5 | 272.9 | 282.5 | 261.3 | 197.8 | 152.0 | 150.2 | 177.0 | 203.9 |
| 2023 | 202.7 | 201.2 | 168.7 | 179.1 | 204.0 | 273.5 | 283.2 | 262.1 | 198.4 | 152.5 | 150.8 | 177.9 | 204.6 |
| 2024 | 203.1 | 201.6 | 168.8 | 179.1 | 203.9 | 273.5 | 283.2 | 262.2 | 198.5 | 152.4 | 150.9 | 178.2 | 204.7 |
| 2025 | 204.1 | 202.6 | 169.6 | 179.7 | 204.4 | 274.0 | 283.9 | 262.9 | 199.1 | 152.9 | 151.5 | 179.0 | 205.4 |
| 2026 | 204.2 | 202.6 | 169.4 | 179.4 | 204.0 | 273.7 | 283.6 | 262.7 | 198.8 | 152.5 | 151.3 | 178.9 | 205.2 |
| 2027 | 205.1 | 203.5 | 170.1 | 180.0 | 204.5 | 274.2 | 284.2 | 263.3 | 199.4 | 152.9 | 151.8 | 179.7 | 205.8 |
| 2028 | 205.1 | 203.6 | 169.9 | 179.7 | 204.0 | 273.9 | 283.9 | 263.1 | 199.1 | 152.6 | 151.6 | 179.6 | 205.6 |
| 2029 | 206.0 | 204.4 | 170.5 | 180.2 | 204.5 | 274.4 | 284.4 | 263.7 | 199.7 | 153.0 | 152.1 | 180.4 | 206.2 |

# Appendix A

*Table 6-6 – 2020 BASE case forecast of MONTHLY and annual retail load (aMW) by customer class*

| Customer Class | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Annual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Small Irrigation | 0.0 | 0.0 | 0.4 | 1.3 | 2.7 | 3.6 | 4.0 | 3.8 | 2.7 | 1.2 | 0.1 | 0.0 | 1.7 |
| Large Irrigation | 0.3 | 0.5 | 9.7 | 39.7 | 81.0 | 129.9 | 129.9 | 94.0 | 45.3 | 24.6 | 3.7 | 0.3 | 46.7 |
| Residential | 128.1 | 123.7 | 92.6 | 71.4 | 55.8 | 67.2 | 76.1 | 84.9 | 73.1 | 55.8 | 76.0 | 106.4 | 84.2 |
| Small General | 16.5 | 16.9 | 13.5 | 12.6 | 12.4 | 14.5 | 15.2 | 16.5 | 15.5 | 12.3 | 12.9 | 14.8 | 14.4 |
| Medium General | 21.9 | 22.7 | 18.9 | 19.5 | 19.2 | 21.6 | 21.6 | 23.2 | 22.8 | 20.6 | 21.2 | 20.8 | 21.1 |
| Large General | 25.2 | 26.3 | 23.3 | 24.9 | 24.9 | 27.0 | 27.3 | 29.4 | 29.5 | 28.2 | 27.1 | 25.2 | 26.5 |
| Large Industrial | 7.5 | 7.8 | 7.7 | 7.7 | 6.3 | 7.7 | 6.9 | 8.0 | 7.4 | 7.9 | 7.6 | 7.5 | 7.5 |
| Street Lights | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| Security Lights | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Unmetered Flats | 0.3 | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.3 | 0.3 |
| System Total | 200.1 | 198.7 | 166.9 | 177.8 | 203.1 | 272.2 | 281.8 | 260.4 | 197.0 | 151.5 | 149.4 | 175.8 | 203.0 |

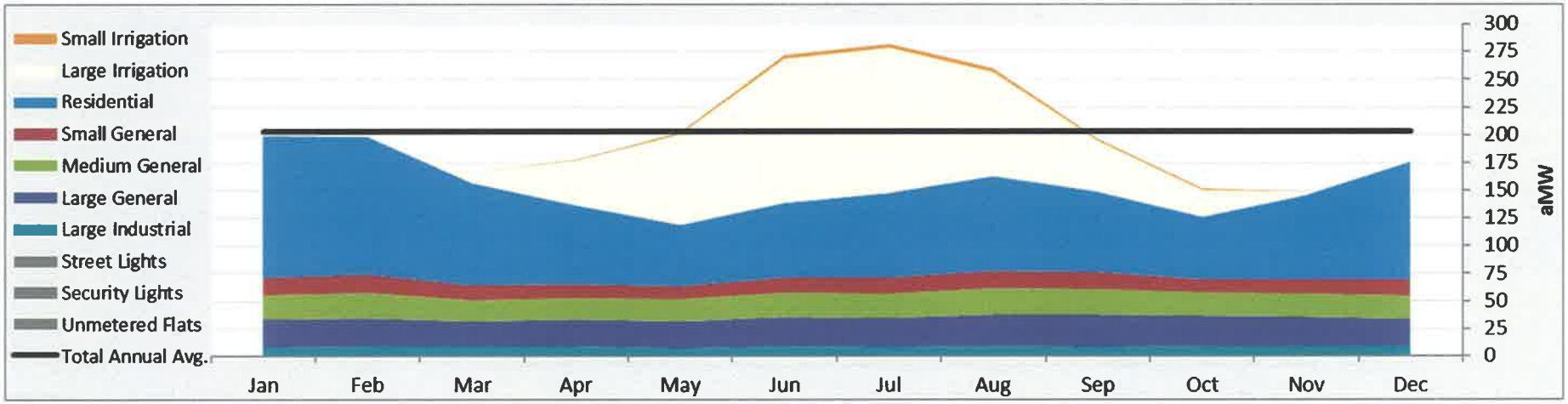


*Figure 6-1 – 2020 BASE case forecast of MONTHLY and annual retail load (aMW) by customer class*

# Appendix A

*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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2002 | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2003 | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2004 | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 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 | 46,052 | 5,122 | 827 | 168 | 5 | 527 | 437 | 9 | 1,837 | 375 | 55,359 | 1.43% |
| 2021 | 46,770 | 5,197 | 837 | 171 | 5 | 523 | 437 | 9 | 1,837 | 375 | 56,161 | 1.45% |
| 2022 | 47,502 | 5,274 | 847 | 173 | 5 | 520 | 437 | 9 | 1,837 | 375 | 56,979 | 1.46% |
| 2023 | 48,212 | 5,348 | 857 | 176 | 5 | 517 | 437 | 9 | 1,837 | 375 | 57,771 | 1.39% |
| 2024 | 48,907 | 5,420 | 866 | 178 | 5 | 514 | 437 | 9 | 1,837 | 375 | 58,547 | 1.34% |
| 2025 | 49,594 | 5,492 | 875 | 180 | 5 | 511 | 437 | 9 | 1,837 | 375 | 59,315 | 1.31% |
| 2026 | 50,273 | 5,562 | 884 | 182 | 5 | 507 | 437 | 9 | 1,837 | 375 | 60,072 | 1.28% |
| 2027 | 50,943 | 5,632 | 893 | 185 | 5 | 504 | 437 | 9 | 1,837 | 375 | 60,820 | 1.24% |
| 2028 | 51,604 | 5,700 | 902 | 187 | 5 | 501 | 437 | 9 | 1,837 | 375 | 61,557 | 1.21% |
| 2029 | 52,255 | 5,768 | 910 | 189 | 5 | 498 | 437 | 9 | 1,837 | 375 | 62,283 | 1.18% |
| AARG %[1] 2020-2024 | 1.51% | 1.42% | 1.17% | 1.41% | 0.00% | -0.62% | 0.00% | 0.00% | 0.00% | 0.00% | 1.41% | |
| AARG %[1] 2020-2029 | 1.41% | 1.33% | 1.07% | 1.29% | 0.00% | -0.61% | 0.00% | 0.00% | 0.00% | 0.00% | 1.32% | |

1) AARG % = Annual Average Rate of Growth Percentage

# Appendix A

*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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2002 | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2003 | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2004 | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 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 | 16,055 | 24,770 | 224,689 | 1,385,001 | 13,204,479 | 27,805 | 939,441 | 283,708 | 529 | 7,947 | 32,204 | -0.48% |
| 2021 | 15,855 | 24,444 | 222,409 | 1,361,022 | 13,166,862 | 27,843 | 939,416 | 282,868 | 528 | 7,923 | 31,775 | -1.33% |
| 2022 | 15,668 | 24,080 | 219,727 | 1,334,533 | 13,166,862 | 27,878 | 939,416 | 282,868 | 528 | 7,923 | 31,343 | -1.36% |
| 2023 | 15,539 | 23,851 | 218,226 | 1,315,550 | 13,166,862 | 27,928 | 939,416 | 282,868 | 528 | 7,923 | 31,021 | -1.03% |
| 2024 | 15,427 | 23,590 | 216,357 | 1,296,375 | 13,204,479 | 27,974 | 939,441 | 283,708 | 529 | 7,947 | 30,707 | -1.01% |
| 2025 | 15,246 | 23,304 | 214,398 | 1,276,714 | 13,166,862 | 28,016 | 939,416 | 282,868 | 528 | 7,923 | 30,328 | -1.23% |
| 2026 | 15,055 | 22,951 | 211,728 | 1,252,498 | 13,166,862 | 28,066 | 939,416 | 282,868 | 528 | 7,923 | 29,919 | -1.35% |
| 2027 | 14,942 | 22,752 | 210,454 | 1,236,893 | 13,166,862 | 28,114 | 939,416 | 282,868 | 528 | 7,923 | 29,640 | -0.93% |
| 2028 | 14,820 | 22,491 | 208,545 | 1,218,126 | 13,204,479 | 28,163 | 939,441 | 283,708 | 529 | 7,947 | 29,334 | -1.03% |
| 2029 | 14,655 | 22,235 | 206,772 | 1,201,084 | 13,166,862 | 28,207 | 939,416 | 282,868 | 528 | 7,923 | 28,996 | -1.15% |
| AARG %[1] 2020-2024 | -0.99% | -1.21% | -0.94% | -1.64% | 0.00% | 0.15% | 0.00% | 0.00% | 0.00% | 0.00% | -1.18% | |
| AARG %[1] 2020-2029 | -1.01% | -1.19% | -0.92% | -1.57% | -0.03% | 0.16% | 0.00% | -0.03% | -0.03% | -0.03% | -1.16% | |

1) AARG % = Annual Average Rate of Growth Percentage

# Appendix A

*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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2002 | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2003 | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2004 | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 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 | 46,380 | 5,156 | 831 | 169 | 5 | 525 | 437 | 9 | 1,837 | 375 | 55,724 | 1.45% |
| 2021 | 47,106 | 5,232 | 841 | 172 | 5 | 522 | 437 | 9 | 1,837 | 375 | 56,536 | 1.46% |
| 2022 | 47,830 | 5,308 | 851 | 174 | 5 | 519 | 437 | 9 | 1,837 | 375 | 57,345 | 1.43% |
| 2023 | 48,531 | 5,381 | 861 | 177 | 5 | 515 | 437 | 9 | 1,837 | 375 | 58,128 | 1.37% |
| 2024 | 49,223 | 5,453 | 870 | 179 | 5 | 512 | 437 | 9 | 1,837 | 375 | 58,900 | 1.33% |
| 2025 | 49,907 | 5,524 | 879 | 181 | 5 | 509 | 437 | 9 | 1,837 | 375 | 59,663 | 1.30% |
| 2026 | 50,581 | 5,594 | 888 | 183 | 5 | 506 | 437 | 9 | 1,837 | 375 | 60,415 | 1.26% |
| 2027 | 51,247 | 5,663 | 897 | 186 | 5 | 503 | 437 | 9 | 1,837 | 375 | 61,159 | 1.23% |
| 2028 | 51,903 | 5,731 | 906 | 188 | 5 | 500 | 437 | 9 | 1,837 | 375 | 61,891 | 1.20% |
| 2029 | 52,550 | 5,798 | 914 | 190 | 5 | 497 | 437 | 9 | 1,837 | 375 | 62,612 | 1.16% |
| AARG %[1] 2020-2024 | 1.50% | 1.41% | 1.15% | 1.45% | 0.00% | -0.62% | 0.00% | 0.00% | 0.00% | 0.00% | 1.40% | |
| AARG %[1] 2020-2029 | 1.45% | 1.37% | 1.11% | 1.28% | 0.00% | -0.63% | 0.00% | 0.00% | 0.00% | 0.00% | 1.35% | |

1) AARG % = Annual Average Rate of Growth Percentage

# Appendix A

*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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2001 | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2002 | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2003 | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 2004 | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| 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 | 714 | 75 | 10 | 2 | 0 | (3) | 0 | 0 | 0 | 0 | 798 | 1.01% |
| 2021 | 726 | 76 | 10 | 3 | 0 | (3) | 0 | 0 | 0 | 0 | 812 | 1.75% |
| 2022 | 724 | 76 | 10 | 2 | 0 | (3) | 0 | 0 | 0 | 0 | 809 | -0.37% |
| 2023 | 701 | 73 | 10 | 3 | 0 | (4) | 0 | 0 | 0 | 0 | 783 | -3.21% |
| 2024 | 692 | 72 | 9 | 2 | 0 | (3) | 0 | 0 | 0 | 0 | 772 | -1.40% |
| 2025 | 684 | 71 | 9 | 2 | 0 | (3) | 0 | 0 | 0 | 0 | 763 | -1.17% |
| 2026 | 674 | 70 | 9 | 2 | 0 | (3) | 0 | 0 | 0 | 0 | 752 | -1.44% |
| 2027 | 666 | 69 | 9 | 3 | 0 | (3) | 0 | 0 | 0 | 0 | 744 | -1.06% |
| 2028 | 656 | 68 | 9 | 2 | 0 | (3) | 0 | 0 | 0 | 0 | 732 | -1.61% |
| 2029 | 647 | 67 | 8 | 2 | 0 | (3) | 0 | 0 | 0 | 0 | 721 | -1.50% |

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 - 2021 Budget

| Capital Category | 2020 Original Budget | 2020 Amended Budget | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|
| Transmission | $620,328 | $508,489 | $3,805,851 | $319,278 | $2,622,037 | $299,000 | $424,000 |
| Distribution | $12,792,140 | $13,783,944 | $12,220,521 | $9,606,515 | $9,766,301 | $10,124,765 | $12,096,751 |
| Broadband | $2,101,128 | $1,502,702 | $1,827,034 | $1,115,122 | $1,120,122 | $1,125,122 | $1,130,122 |
| General Plant | $620,800 | $875,800 | $1,905,755 | $1,499,500 | $887,500 | $887,500 | $887,500 |
| IT | $1,158,470 | $716,528 | $1,509,339 | $1,204,202 | $800,000 | $800,000 | $800,000 |
| Contributions in Aid | ($1,801,775) | ($1,988,283) | ($2,451,526) | ($1,548,523) | ($1,644,189) | ($1,680,179) | ($1,684,109) |
| **Grand Total** | **$15,491,091** | **$15,399,180** | **$18,816,974** | **$12,196,094** | **$13,551,771** | **$11,556,209** | **$13,654,265** |

# Capital Requirements Plan
# Transmission - 2021 Budget

| Project Name | 2020 Original Budget | 2020 Amended Budget | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|
| Switch Upgrade/Additions | $148,000 | $148,000 | $74,000 | $74,000 | $74,000 | $74,000 | $74,000 |
| Poles & Fixtures, Misc Repairs | $15,000 | $222,819 | $100,000 | $100,000 | $100,000 | $100,000 | $100,000 |
| WO# 511742 - Transmission Line-Phillips to Spaw | $253,128 | $96,941 | $3,259,435 | | | | |
| WO# XXXXXX - Hedges 115kV Metering Point | $204,200 | | $203,969 | | | | |
| WO# XXXXXX - Transmission Line-Klickitat to Horse Heaven Tie | | $27,500 | $15,000 | | | | |
| WO# 511679 - BPA Interconnection-Southridge Sub/Line Tap | | $13,229 | | | | | |
| WO# XXXXXX - Transmission Study - River System | | | $153,447 | | | | |
| WO# 503229 - Transmission Line-Sunset Rd to Dallas Rd | | | | $145,278 | $2,448,037 | | |
| WO# XXXXXX - Mabton to Prosser Tie | | | | | | $125,000 | |
| WO# 534224 - Transmission Line-Hwy 240 to Edison Sub | | | | | | | $250,000 |
| **Grand Total** | **$620,328** | **$508,489** | **$3,805,851** | **$319,278** | **$2,622,037** | **$299,000** | **$424,000** |

# Capital Requirements Plan
## Distribution - 2021 Budget

| Project Group | Project | Project Name | 2020 Original Budget | 2020 Amended Budget | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|---|---|
| Capacity & Reliability | 9 - Dist. 5 Year Plan | WO# 503528 - Voltage Optimization - Kennewick | $306,000 | $151,274 | $302,548 | | | | |
| | | POS#32 - WO#597473 - RTA-3, extend UG west along Sagebrus.. | $168,023 | $166,926 | | | | | |
| | | POS# 31 - WO# 590899 - RTA-1, extend OH from Reata Rd south | $46,043 | $237,941 | | | | | |
| | | POS#58 - WO# XXXXXX - BEC-3, new feeder to east to tie with S.. | $372,000 | | $743,329 | | | | |
| | | POS#41 - WO# XXXXXX - ZEH-4, new OH tie to GUM-4 at Game F.. | $115,999 | | | $115,388 | | | |
| | | POS#107 - WO#XXXXXX - RVF-1 to PSR-1 Switch | $10,500 | | | $10,466 | | | |
| | | POS#20 - WO# XXXXXX - HED - 4 Reconductor 3/0 ACSR, Perkins .. | $415,001 | | | | | $412,555 | |
| | | POS#21 - WO# XXXXXX - HED - 4 Reconductor #6, Bernath Rd. | $327,000 | | | | | $324,459 | |
| | | POS#104 - WO#XXXXXX - ORV-2 to ORV-5 switch | $10,500 | $4,827 | | | | | |
| | | POS#10 - WO# XXXXXX - GUM-4, dbl cir on 36th, recond 3/0 on O.. | | $8,374 | $171,738 | | | | |
| | | POS#115 - WO#XXXXXX - RTA-2 to RTA-1 Offload | | | $269,008 | | | | |
| | | POS#81 - WO# XXXXXX - PHI-8, new feeder north to Cochrane | | | $214,780 | | | | |
| | | POS#111 - WO#XXXXXX - RTA-3 Recond Utilize 4" for 3 phase | | | $79,035 | | | | |
| | | POS#102 - WO#XXXXXX - HED-4 Getaway Reconductor | | | $62,788 | | | | |
| | | POS#117 - WO#XXXXXX - SSR-1 offload to SSR3 (Switches) | | | $20,401 | | | | |
| | | POS#118 - WO#XXXXXX - PSR-6 Switch additions | | | $10,406 | | | | |
| | | POS#110 - WO#XXXXXX - RTA-2 Recond #2 Country Meadows L.. | | | $7,866 | | | | |
| | | POS#11 - WO# XXXXXX - GUM-4, HED-3, recond. 3/0, Bowles Rd. | | | | $261,000 | | | |
| | | POS#119 - WO#XXXXXX - PSR-3 Reconductor | | | | $250,000 | | | |
| | | POS#12 - WO# XXXXXX - GUM - 4 Reconductor #4 ACSR, Oak St. | | | | $135,000 | | | |
| | | POS#38 - WO#XXXXXX - VIS-1 to Vis-6 Across Quinalt | | | | $128,419 | | | |
| | | POS#116 - WO#XXXXXX - RTA-2 Country Meadows Height bcakf.. | | | | $37,000 | | | |
| | | POS#107 - WO#XXXXXX - PSR-6 RVF-1 & PSR-1 Tie Switch | | | | $10,406 | | | |
| | | WO# XXXXXX - Voltage Optimization - Future | | | | | $300,000 | | $300,000 |
| | | POS#36A - WO#XXXXXX - SSR-3 Reconducctor (DNR Land) WEST | | | | | $224,300 | | |
| | | POS#13 - WO# XXXXXX - GUM - 4 Reconductor #4 ACSR, Game F.. | | | | | $200,000 | | |
| | | POS#19 - WO# XXXXXX - HED-3 , Reconductor #4 Terril Rd. | | | | | $156,000 | | |
| | | POS#14 - WO# XXXXXX - GUM-4, new OH tie HED-3, Game Farm .. | | | | | $91,000 | | |
| | | POS #105 - KEN-9 Reconductor 3/0 ACSR along Washington St | | | | | $64,800 | | |
| | | POS#105 - WO#XXXXXX - KEN-9 Reconductor down Washington | | | | | $64,800 | | |
| | | POS#36B - WO#XXXXXX - SSR-3 Reconducctor (DNR Land) EAST | | | | | | $224,300 | |
| | | POS#54 - WO# XXXXXX ZEH-3, recond. 1/0 to serve GUM-3 | | | | | | $80,000 | |
| | | POS#15 - WO# XXXXXX - HIG-4, recond. 3/0, W. 10th Ave. | | | | | | $85,000 | |
| | | POS#56 - WO# XXXXXX - ELY-8, recond. 3/0, near Ely St. | | | | | | $36,000 | |
| | | POS#95 - WO# XXXXXX - HED-2, recond #266.8, Finley Rd | | | | | | | $245,000 |
| | | POS#22 - WO# XXXXXX - KEN-8, convert OH to UG across fairgro.. | | | | | | | $160,000 |
| | | POS#39 - WO# XXXXXX - ZEH-1, new OH line and UG tie with E7 | | | | | | | $134,000 |

# Capital Requirements Plan
## Distribution - 2021 Budget

| Project Group | Project | Project Name | 2020 Original Budget | 2020 Amended Budget | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|---|---|
| Capacity & Reliability | 9 - Dist. 5 Year Plan | POS#79 - WO# XXXXXX RTA-2, Recond. Badger Rd. Btwn L766A .. | | | | | | | $130,000 |
| | | POS #113 - ELY-2 Reconductor 3/0 ACSR along Garfield St | | | | | | | $30,500 |
| | | Total | **$1,771,066** | **$569,342** | **$1,881,900** | **$947,678** | **$1,100,900** | **$1,162,315** | **$999,500** |
| | 17 - Dist. System Improvement | Dist System Improvements | $535,656 | $531,052 | $316,671 | $315,489 | $315,489 | $315,489 | $315,489 |
| | | WO# 561020 - Ridgeline Under Pass | | $9,211 | $774,117 | | | | |
| | | WO# 560911 - Orchard View North Clearwater to Vista Field | | $420,775 | | | | | |
| | | WO# 505932 - Orchard View New getaways | | $298,455 | | | | | |
| | | WO#604660 - Ely Feeder Getaway Replacement | | $237,132 | | | | | |
| | | WO# 560140 - OrchardView South to Park #2 | | $158,076 | | | | | |
| | | WO# 528855 - Vista Field Phase # 1 Feeder | | $117,024 | | | | | |
| | | Vista Substation Feeder Getaways | | | $7,955 | $680,000 | | | |
| | | Angus Substation Getaways | | | | | $750,000 | | |
| | | Total | **$535,656** | **$1,771,726** | **$1,098,743** | **$995,489** | **$1,065,489** | **$315,489** | **$315,489** |
| | 22 - Scada | Fiber to Substations & Line Devices | $64,141 | $111,906 | $79,016 | $70,000 | $75,000 | $75,000 | $75,000 |
| | | Substation RTU & radio communications upgrades | $62,500 | $62,179 | $49,789 | $49,789 | $49,789 | $50,110 | $50,110 |
| | | Distribution voltage regulator SCADA | $136,500 | $149,600 | $74,800 | | | | |
| | | Total | **$263,140** | **$323,686** | **$203,606** | **$119,789** | **$124,789** | **$125,110** | **$125,110** |
| | 23 - Substations | Substation Misc. Aux Equip, Relays/Controls | $25,000 | $25,000 | $25,000 | $25,000 | $25,000 | $25,000 | $25,000 |
| | | WO# 564613 - Xfmr & Feeder Relay Upgrade - Ely #2 | $85,000 | $264,956 | | | | | |
| | | WO# 584434 - Southridge Substation | $2,076,800 | $2,630,197 | | | | | |
| | | WO# 592041 - Control House Addition & Batteries-Gum Street | $160,834 | $170,963 | | | | | |
| | | WO# 552659 - Chevron Power Transformer Change Out | $87,331 | $89,051 | | | | | |
| | | WO# 592728 - Highlands Battery Bank | $16,760 | $14,736 | | | | | |
| | | WO# 591903 - 735 Meter install at H2F4 Substation | $10,000 | $9,918 | | | | | |
| | | WO# XXXXXX - Xfmr & Feeder Relay Upgrade-Gum Street | $87,308 | | $133,831 | | | | |
| | | WO# 524249 - Feeder Position Addition-Phillips P8R | $36,024 | | $39,968 | | | | |
| | | WO# XXXXXX - 735 Meter install at Sandpiper Substation | $10,000 | | $9,946 | | | | |
| | | WO# 591902 - 735 Meter install at H2F3 Substation | $10,000 | | $9,946 | | | | |
| | | WO# XXXXXX - Sunset Road Animal Fence | | $49,760 | | | | | |
| | | WO# 562731 - Riverfront Power Xfmr LTC Retrofit | | $16,917 | | | | | |
| | | WO# XXXXXX - Angus Bay #2 Feeder Breaker & Relay Replaceme.. | | | $154,411 | | | | |
| | | WO# XXXXXX - Xfmr & Feeder Relay Upgrade - Ely #1 | | | $133,831 | | | | |
| | | WO# XXXXXX - Prosser Animal Fence | | | $49,760 | | | | |
| | | WO# XXXXXX - Zephyr Heights Battery Bank Replacement | | | $14,736 | | | | |
| | | WO# XXXXXX- Prosser Bay #1 CS & Diff Addition | | | | $200,000 | | | |
| | | WO# XXXXXX - Feeder Relay Upgrades Vista Bay 1 | | | | $135,306 | | | |
| | | WO# XXXXXX - Feeder Relay Upgrade-Vista Bay 2 | | | | $135,306 | | | |

# Capital Requirements Plan
# Distribution - 2021 Budget

| Project Group | Project | Project Name | 2020 Original Budget | 2020 Amended Budget | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|---|---|
| Capacity & Reliability | 23 - Substations | WO#XXXXXX - Prosser Bay #1 Voltage Reg Replacement | | | | $330,176 | | | |
| | | WO# XXXXXX - Angus Bay #1 Feeder Breaker & Relay Replaceme.. | | | | $154,411 | | | |
| | | WO# XXXXXX - Phillips Animal Fence | | | | $49,760 | | | |
| | | WO# XXXXXX - Kennewick Battery Bank Replacement | | | | $15,000 | | | |
| | | WO#XXXXXX - Prosser Bay #2 Voltage Reg Replacement | | | | | $330,871 | | |
| | | WO# XXXXXX- Prosser Bay #2 CS & Diff Addition | | | | | $200,000 | | |
| | | WO# XXXXXX - Angus Bay #3 Feeder Breaker & Relay Replaceme.. | | | | | $154,411 | | |
| | | WO# XXXXXX- Relay Upgrades River Front Substation | | | | | $134,331 | | |
| | | WO# XXXXXX - River Front Battery Bank Replacement | | | | | $15,000 | | |
| | | WO# XXXXXX- Hedges Substation Upgrades | | | | | | $1,220,000 | |
| | | WO# XXXXXX- New Edison Street Substation | | | | | | | $2,600,000 |
| | | Total | **$2,605,056** | **$3,271,497** | **$571,429** | **$1,044,959** | **$859,613** | **$1,245,000** | **$2,625,000** |
| | Land & Land Rights | Ridgeline Substation Property Acquisition | $349,999 | $11,670 | $332,214 | | | | |
| | | Total | **$349,999** | **$11,670** | **$332,214** | | | | |
| | **Total** | | **$5,524,918** | **$5,947,922** | **$4,087,891** | **$3,107,916** | **$3,150,792** | **$2,847,914** | **$4,065,099** |
| Customer Growth | 13 - Dist. Irrigation Facilities | DIST_IRR_FACILIties | | | | | | | |
| | | Total | | | | | | | |
| | 17 - Dist. System Improvement | WO# XXXXXX -Southridge Sub Feeder Getaways | $547,000 | $444,509 | $889,017 | | | | |
| | | WO# XXXXXX -Edison Street Sub Feeder Getaways | | | | | | | $750,000 |
| | | Total | **$547,000** | **$444,509** | **$889,017** | | | | **$750,000** |
| | 20 - Service Poles | Service Poles | $20,000 | $27,500 | $20,000 | $20,000 | $20,000 | $20,000 | $20,000 |
| | | Total | **$20,000** | **$27,500** | **$20,000** | **$20,000** | **$20,000** | **$20,000** | **$20,000** |
| | 30 - Sum Base Growth | Dist Base Growth | $2,019,391 | $2,003,627 | $2,009,033 | $1,827,560 | $1,944,469 | $1,980,812 | $1,985,613 |
| | | Total | **$2,019,391** | **$2,003,627** | **$2,009,033** | **$1,827,560** | **$1,944,469** | **$1,980,812** | **$1,985,613** |
| | 42 - Service Work | Services, Set Xfmrs, Run Secondary | $2,293,332 | $2,274,529 | $2,311,394 | $2,311,394 | $2,311,394 | $2,311,394 | $2,311,394 |
| | | Total | **$2,293,332** | **$2,274,529** | **$2,311,394** | **$2,311,394** | **$2,311,394** | **$2,311,394** | **$2,311,394** |
| | Land & Land Rights | New Permits (Crossing, Etc.) | $10,000 | $10,000 | $10,000 | $10,000 | $10,000 | $10,000 | $10,000 |
| | | County Recording Fees - Easements | $5,000 | $7,500 | $7,500 | $7,500 | $7,500 | $7,500 | $7,500 |
| | | Title Reports for Construction Projects | $2,500 | $2,500 | $2,500 | $2,500 | $2,500 | $2,500 | $2,500 |
| | | Total | **$17,500** | **$20,000** | **$20,000** | **$20,000** | **$20,000** | **$20,000** | **$20,000** |
| | **Total** | | **$4,897,222** | **$4,770,165** | **$5,249,445** | **$4,178,954** | **$4,295,864** | **$4,332,206** | **$5,087,007** |
| General Plant | Meters | Meters | $200,000 | $200,000 | $200,000 | $200,000 | $200,000 | $800,000 | $800,000 |
| | | Total | **$200,000** | **$200,000** | **$200,000** | **$200,000** | **$200,000** | **$800,000** | **$800,000** |
| | **Total** | | **$200,000** | **$200,000** | **$200,000** | **$200,000** | **$200,000** | **$800,000** | **$800,000** |
| Other | 19 - NESC Standards Compliance | JU - NESC Compliance Program | $250,000 | $150,000 | $125,000 | $125,000 | $125,000 | $150,000 | $150,000 |
| | | Total | **$250,000** | **$150,000** | **$125,000** | **$125,000** | **$125,000** | **$150,000** | **$150,000** |
| | Other | Equipment Overhead Allocation | $350,000 | $453,000 | $477,288 | | | | |

# Capital Requirements Plan
## Distribution - 2021 Budget

| Project Group | Project | Project Name | 2020 Original Budget | 2020 Amended Budget | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|---|---|
| Other | Other | Anticipated Carry Over | ($425,000) | ($425,000) | | | | | |
| | | Material Overhead Allocation | | $90,000 | $88,000 | | | | |
| | | Anticipated Labor | | $586,180 | | | | | |
| | | Total | **($75,000)** | **$704,180** | **$565,288** | | | | |
| | **Total** | | **$175,000** | **$854,180** | **$690,288** | **$125,000** | **$125,000** | **$150,000** | **$150,000** |
| Repair & Replace | 12 - Dist. Cable Replacement Projects | Repair & Replacement - Cable | $1,500,000 | $1,498,252 | $1,498,252 | $1,500,000 | $1,500,000 | $1,500,000 | $1,500,000 |
| | | Total | **$1,500,000** | **$1,498,252** | **$1,498,252** | **$1,500,000** | **$1,500,000** | **$1,500,000** | **$1,500,000** |
| | 14 - Dist. Other Maintenance | Repair & Replacement - Other | $265,000 | $265,000 | $265,000 | $265,000 | $265,000 | $265,000 | $265,000 |
| | | Trouble Orders | $190,000 | $190,000 | $190,000 | $190,000 | $190,000 | $190,000 | $190,000 |
| | | Total | **$455,000** | **$455,000** | **$455,000** | **$455,000** | **$455,000** | **$455,000** | **$455,000** |
| | 16 - Dist. Pole Replacement | Distribution Pole Replacement | $40,000 | $39,461 | $39,646 | $39,646 | $39,646 | $39,646 | $39,646 |
| | | Total | **$40,000** | **$39,461** | **$39,646** | **$39,646** | **$39,646** | **$39,646** | **$39,646** |
| | 23 - Substations | WO# 598534 - ABB AMVAC Control Board Replacements | | $18,964 | | | | | |
| | | Total | | **$18,964** | | | | | |
| | **Total** | | **$1,995,000** | **$2,011,676** | **$1,992,898** | **$1,994,646** | **$1,994,646** | **$1,994,646** | **$1,994,646** |
| **Grand Total** | | | **$12,792,140** | **$13,783,944** | **$12,220,521** | **$9,606,515** | **$9,766,301** | **$10,124,765** | **$12,096,751** |

# Capital Requirements Plan
## Broadband - 2021 Budget

| Project Name | 2020 Original Budget | 2020 Amended Budget | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|
| Fiber Customer Connects LEC 2 | $600,000 | $600,000 | $450,000 | $450,000 | $450,000 | $450,000 | $450,000 |
| Fiber Backbone & Laterals | $217,500 | $217,500 | $150,000 | $150,000 | $150,000 | $150,000 | $150,000 |
| NoaNET NCS and District Labor | $198,628 | $198,102 | $220,034 | $225,122 | $230,122 | $235,122 | $240,122 |
| Fiber Customer Connects - LEC 1 | $100,000 | $100,000 | $100,000 | $100,000 | $100,000 | $100,000 | $100,000 |
| WO#559986 - Backbone System Electronics | $75,000 | $75,000 | $75,000 | $75,000 | $75,000 | $75,000 | $75,000 |
| WO#560002 - Premise Electronics | $75,000 | $75,000 | $75,000 | $75,000 | $75,000 | $75,000 | $75,000 |
| Fiber Conduit | $20,000 | $20,000 | $20,000 | $20,000 | $20,000 | $20,000 | $20,000 |
| Advanced Wireless/Small Cell | $815,000 | $193,000 | $652,000 | | | | |
| Franchise BB Facility Relocations | | $24,100 | $20,000 | $20,000 | $20,000 | $20,000 | $20,000 |
| Airflow Spoiler Project | | | $65,000 | | | | |
| **Grand Total** | **$2,101,128** | **$1,502,702** | **$1,827,034** | **$1,115,122** | **$1,120,122** | **$1,125,122** | **$1,130,122** |

# Capital Requirements Plan
## General Plant - 2021 Budget

| Project | Project Name | 2020 Original Budget | 2020 Amended Budget | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|---|
| Facilities | Rebuild HP 7 at Admin | $7,000 | $7,000 | | | | | |
| | Rebuild HP 2 - at Admin | $7,000 | $7,000 | | | | | |
| | Paint - Operations Dock Area | $15,000 | | | $15,000 | | | |
| | Camera System Upgrade - Operations (2019) | $10,000 | | | | | | |
| | Replace tile floor in Operations | | $12,000 | $18,000 | | | | |
| | Drop Box Installation in Customer Service Area | | $40,000 | | | | | |
| | Remodel Existing Commission Room | | $46,000 | | | | | |
| | Library Remodel | | $15,000 | | | | | |
| | Broadband Equipment Shed | | $10,000 | | | | | |
| | Generator Governor Upgrade at Jump off Joe | | $7,500 | | | | | |
| | Physical Security Audit Recommendations Phase 1 | | | $250,000 | $250,000 | | | |
| | Asphalt Replacement Admin South Parking Lot | | | $180,000 | | | | |
| | Carpet Replacement - Customer Service Lobby | | | $30,000 | | | | |
| | Pole Yard Gate - Operations | | | $20,000 | | | | |
| | Dist System Improvements/Projected Capital Facilities | | | | $200,000 | $200,000 | $200,000 | $200,000 |
| | **Total** | **$39,000** | **$144,500** | **$498,000** | **$465,000** | **$200,000** | **$200,000** | **$200,000** |
| Other | Communications Equipment/800 MHz Radios | $40,000 | $40,000 | $5,000 | $5,000 | $5,000 | $5,000 | $5,000 |
| | Projected Capital Equip - Ops | $5,000 | $5,000 | $5,000 | $5,000 | $5,000 | $5,000 | $5,000 |
| | Misc. Construction Capital Expense - Line Department | $67,500 | $67,500 | $67,500 | $67,500 | $67,500 | $67,500 | $67,500 |
| | Pole Stubbing | $10,000 | $10,000 | $10,000 | $10,000 | $10,000 | $10,000 | $10,000 |
| | Misc. Construction Capital Expense - Transformer Shop | $10,000 | $10,000 | $10,000 | $10,000 | $10,000 | $10,000 | $10,000 |
| | Doble Relay Test Set | $55,000 | $61,000 | | | | | |
| | Light Plant | $14,300 | $10,800 | | | | | |
| | AC HiPot | | $9,000 | | | | | |
| | D6 Dozer | | | $210,000 | | | | |
| | Meter Test Standard | | | $60,000 | | | | |
| | TTR and Winding Resistance Tester | | | $26,000 | | | | |
| | CT Verification Tester | | | $25,000 | | | | |
| | Rock Hammer (for Backhoe) | | | $17,000 | | | | |
| | Locator (Instrument) | | | $9,300 | | | | |
| | Micro Ohm Tester | | | $7,755 | | | | |
| | 15-Ton Press | | | $5,200 | | | | |

# Capital Requirements Plan
# General Plant - 2021 Budget

| Project | Project Name | 2020 Original Budget | 2020 Amended Budget | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|---|
| Other | Projected Capital Equip - Line | | | | $45,000 | $45,000 | $45,000 | $45,000 |
| | Projected Capital - Transformer Shop | | | | $25,000 | $25,000 | $25,000 | $25,000 |
| | Projected Capital - Meter Shop | | | | $20,000 | $20,000 | $20,000 | $20,000 |
| | Fault Locator | | | | $52,000 | | | |
| | Mobile Spare Battery Bank | | | | $45,000 | | | |
| | **Total** | **$201,800** | **$213,300** | **$457,755** | **$284,500** | **$187,500** | **$187,500** | **$187,500** |
| Transportation | Line Truck - Prosser | $340,000 | $340,000 | | | | | |
| | Locator Truck | $40,000 | $40,000 | | | | | |
| | Foreman Truck | | $80,000 | | | | | |
| | Meter Shop Extended Cab | | $58,000 | | | | | |
| | High Capacity Digger Derrick - Transmission Line Truck | | | $800,000 | | | | |
| | Small Bucket Truck for Emergency Standby | | | $90,000 | | | | |
| | Forklift for Transformer Shop | | | $60,000 | | | | |
| | Bucket Truck - Prosser | | | | $400,000 | | | |
| | Overhead Puller | | | | $180,000 | | | |
| | Foreman Truck - Prosser | | | | $120,000 | | | |
| | Dump Truck | | | | $50,000 | | | |
| | Projected Transportation Equipment | | | | | $500,000 | $500,000 | $500,000 |
| | **Total** | **$380,000** | **$518,000** | **$950,000** | **$750,000** | **$500,000** | **$500,000** | **$500,000** |
| **Grand Total** | | **$620,800** | **$875,800** | **$1,905,755** | **$1,499,500** | **$887,500** | **$887,500** | **$887,500** |

# Capital Requirements Plan
## Information Technology - 2021 Budget

| Project | Project Name | 2020 Original Budget | 2020 Amended Budget | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|---|
| Data Analytics/Business Intelligence | Purchase and Implement ETL Tool | $25,000 | | $25,000 | | | | |
| | Purchase and Implement Big Data Storage | | | | $83,618 | | | |
| | Purchase and Implement IPaaS Services | | | | $66,797 | | | |
| | **Total** | **$25,000** | | **$25,000** | **$150,415** | | | |
| Enterprise Applications | iVUE Enhancements | $121,310 | $17,350 | $85,244 | $53,787 | $53,787 | $53,787 | $53,787 |
| | SCADA Historian | $23,077 | $32,926 | | | | | |
| | SCADA Historian Enhancements | | $11,000 | $90,244 | | | | |
| | TRIM Upgrade | | | $75,244 | | | $75,244 | |
| | WindMil Upgrade | | | $18,350 | | | | |
| | **Total** | **$144,387** | **$61,276** | **$269,082** | **$53,787** | **$53,787** | **$129,031** | **$53,787** |
| Network Infrastructure | Cisco Blade Server | $130,299 | $130,190 | $75,000 | $125,000 | $125,000 | $125,000 | $125,000 |
| | Network Switch Purchase | $48,729 | $48,548 | $40,000 | $40,000 | $40,000 | $40,000 | $40,000 |
| | Windows Datacenter Licenses | $22,975 | $97,593 | $25,000 | $25,000 | $25,000 | $25,000 | $25,000 |
| | External DMZ hosts | $68,892 | $68,708 | | | | | |
| | MPLS Substations | $17,175 | $17,068 | | | | | |
| | SCADA Network Switch Purchase | $11,738 | $11,650 | | | | | $10,000 |
| | Wireless Access Equipment for Substations | $9,788 | $9,689 | | | | | |
| | Network Management Server | $7,525 | $7,472 | | | | | |
| | Physical Security Audit Recommendations Phase 1 | $292,415 | | $364,236 | $100,000 | $100,000 | | |
| | Nexus Switch (Prosser) Upgrade | $63,881 | | $63,829 | | | $60,000 | |
| | C-Series Cisco Blade Server | $32,462 | | $32,428 | | | | |
| | Video Accelerator Cards | $31,599 | | $31,578 | | | | |
| | Video Accelerator | $15,800 | | $15,789 | | | | |
| | Large Format Scanner | $11,868 | | $26,842 | | | | $10,000 |
| | Structured Cabling | $10,725 | | $10,702 | | | | |
| | Hilltop Router | | $10,000 | | | | | |
| | Load Balancer Eval and Purchase | | | $87,561 | | | | |
| | Audio Visual Equipment (Commission Room Update) | | | $44,249 | | | | |
| | Datacenter redesign | | | $50,000 | | | | |
| | Veeam Enterprise to Ent Plus | | | $30,000 | | | | |
| | Tape Library Active Vault | | | $8,000 | | | | |
| | Tape drive backup | | | $5,000 | | | | |
| | Big Data Storage Array | | | | $100,000 | | | |
| | Veeam repository | | | | $70,000 | | | |
| | SQL Software - Database Licenses | | | $130,000 | $30,000 | $30,000 | $30,000 | $30,000 |

# Capital Requirements Plan
## Information Technology - 2021 Budget

| Project | Project Name | 2020 Original Budget | 2020 Amended Budget | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|---|
| Network Infrastructure | Storage Area Network (SAN) Upgrade | | | $120,000 | $510,000 | | $100,000 | |
| | **Total** | **$775,872** | **$400,919** | **$1,160,213** | **$1,000,000** | **$320,000** | **$380,000** | **$240,000** |
| Operational Technology | TGB Replacement | $213,211 | $254,333 | | | | | |
| | Communications Monitors | | | $55,044 | | | | |
| | **Total** | **$213,211** | **$254,333** | **$55,044** | | | | |
| Other | Adjustment to Annual Minimum of $800,000 | | | | | $426,213 | $290,969 | $506,213 |
| | **Total** | | | | | **$426,213** | **$290,969** | **$506,213** |
| **Grand Total** | | **$1,158,470** | **$716,528** | **$1,509,339** | **$1,204,202** | **$800,000** | **$800,000** | **$800,000** |

# Capital Requirements Plan
## Capital Contributions - 2021 Budget

| Project Group | Project | 2020 Original Budget | 2020 Amended Budget | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|---|
| Capacity & Reliability | 17 - Dist. System Improvement | | ($270,308) | ($691,300) | | | | |
| | **Total** | | **($270,308)** | **($691,300)** | | | | |
| Customer Growth | 30 - Sum Base Growth | ($1,644,000) | ($1,644,000) | ($1,648,401) | ($1,495,498) | ($1,591,164) | ($1,620,904) | ($1,624,834) |
| | **Total** | **($1,644,000)** | **($1,644,000)** | **($1,648,401)** | **($1,495,498)** | **($1,591,164)** | **($1,620,904)** | **($1,624,834)** |
| Other | 19 - NESC Standards Compliance | ($62,500) | ($37,500) | ($31,250) | ($31,250) | ($31,250) | ($37,500) | ($37,500) |
| | Other | ($21,775) | ($21,775) | ($21,775) | ($21,775) | ($21,775) | ($21,775) | ($21,775) |
| | **Total** | **($84,275)** | **($59,275)** | **($53,025)** | **($53,025)** | **($53,025)** | **($59,275)** | **($59,275)** |
| Broadband | 5 - BB Fiber Line Extension | ($73,500) | ($14,700) | ($58,800) | | | | |
| | **Total** | **($73,500)** | **($14,700)** | **($58,800)** | | | | |
| **Grand Total** | | **($1,801,775)** | **($1,988,283)** | **($2,451,526)** | **($1,548,523)** | **($1,644,189)** | **($1,680,179)** | **($1,684,109)** |

# Power Supply Plan

**Tab 10**

Public Utility District No. 1 of Benton County

# Power Supply Plan

2021

## Contributors

| | | |
|---|---|---|
| **Kevin Galke** | Manager, Analytics | The Energy Authority |
| **Robby Branom** | Sr. Portfolio Analyst | The Energy Authority |
| **Alex Churchman** | Portfolio Analyst | The Energy Authority |
| **Randy Gregg** | Manager, Client Services | The Energy Authority |
| **Kevin White** | Director of Power Management | Benton PUD |
| **Paul Durham** | Power and Energy Programs Analyst | Benton PUD |

### COVID-19 Pandemic Disclaimer:

The COVID-19 pandemic has impacted the District's General Service class load in 2020 with a 10-15% reduction in load each month since the start of the pandemic. A similar impact is projected to continue in 2021 with a gradual return of load over the course of the year. The net power cost stochastic analysis for the 2021 Power Supply Plan *does not* include the load impacts of the COVID-19 pandemic. The overall net power cost for calendar year 2021 in this plan will be reduced by $1.8 million for the District's proposed budget due to reduced power needs with the estimated load reduction in the General Service classes. The estimated reduction in retail load is approximately 7.6 aMW.

# TABLE OF CONTENTS

# 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 2020-2029 (Resolution No. 2544 adopted by the Commission on May 12, 2020), 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 energy requirements. Its purpose is to provide background, highlight key data assumptions and synthesize conclusions for the District's 2021 power supply budget.

The District purchases energy from several resources with more than 85% purchased from BPA. The District also purchases 50 MW of capacity from the Frederickson 1 Generating Station, a combined cycle natural-gas-fired combustion turbine project near Tacoma, Washington; about 1 aMW of energy from the Packwood Hydroelectric Project; about 6 aMW of renewable energy, divided evenly between the Nine Canyon and White Creek Wind Projects in Eastern Washington; and a Seasonal Capacity Product (call option) that provides 75 MW in Summer and 25 MW in Winter to meet seasonal peaking deficits during HLH hours, should the District elect the need to take energy. Given these resources and the District's expected load, energy is expected to be sufficient, in 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 2021-2025, which were reviewed by the District's Risk Management Committee prior to inclusion in this updated plan. These power supply assumptions will be covered in detail in the following chapters. The fundamental assumptions of the District's power supply budget are as follows:

- Based on the District's updated load forecast adopted in May 2020 – included in Section I
- BPA rate escalation assumptions: (BPA fiscal year is October 1 through September 30)
    - FY2020-21: Actual BP-20 rates
    - FY2022/FY2024: 4.0% increase in Power and 4.0% increase in Transmission rates
- District's Rate Period High Water Mark (RHWM) is 200.214 aMW in FY2021 and decreases to 192.001 aMW in FY2022. It is assumed to be this value through the remainder of the study period.
- Most BPA spill costs are included in the BP-20 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, with 2020 spill assumed to 125% Total Dissolved Gas (TDG). This spill is anticipated to continue for the 2021-24 spring fish passage season. The federal agencies recently completed a review of Columbia River System Operations (CRSO) and decided to continue spill at 125%. The CRSO added some additional operations at the headwater projects that reduced critical inventory. These impacts are included in slice 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 gas prices.

Using these results, the District sets its 2021 budget at the 25th percentile (i.e., the probability of meeting budget is 75%) net power cost, and the 50th percentile for forecasting years beyond 2021.

**Table 1** below are net power cost forecasts using the 25th and 50th percentile scenarios for 2021-2025. 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 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| **25%** | $83,303,201 | $85,804,385 | $85,822,789 | $88,075,581 | $89,132,208 |
| **50%** | $80,664,440 | $83,572,304 | $83,021,043 | $84,941,400 | $86,296,153 |
| **Budget vs Expected (25% - 50%)** | $2,638,761 | $2,232,081 | $2,801,746 | $3,134,181 | $2,836,055 |

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 2020-2025 adopted by the Commission (Resolution 2544) on May 12, 2020. 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 load projection forecasts a 0.21% average annual rate of growth as illustrated below in **Figure 2.**

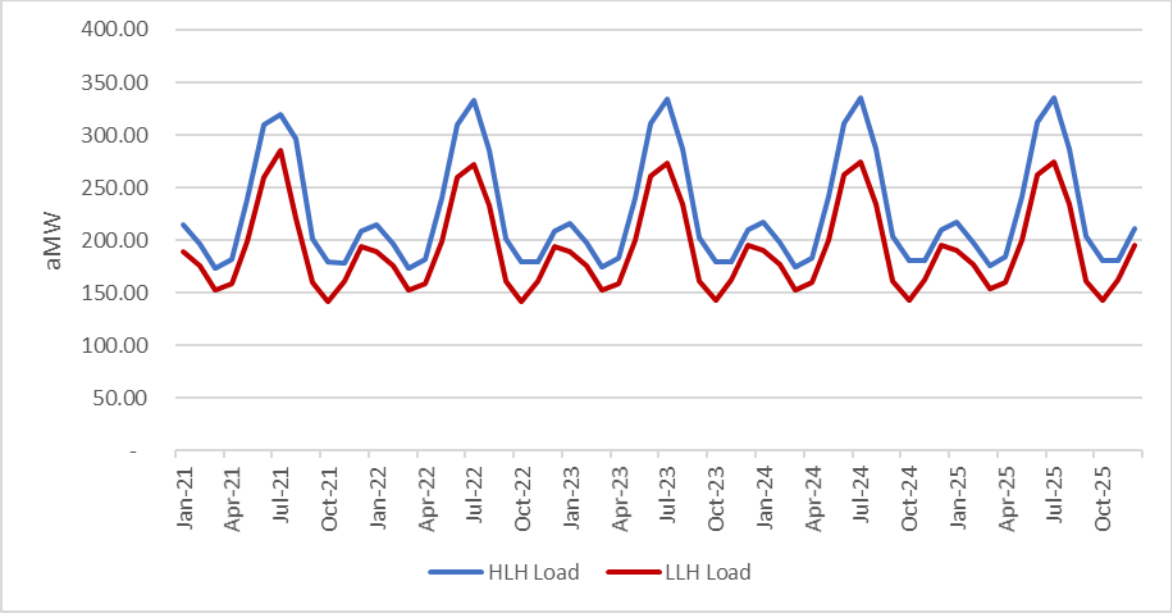


FIGURE 1: DISTRICT HLH AND LLH LOADS

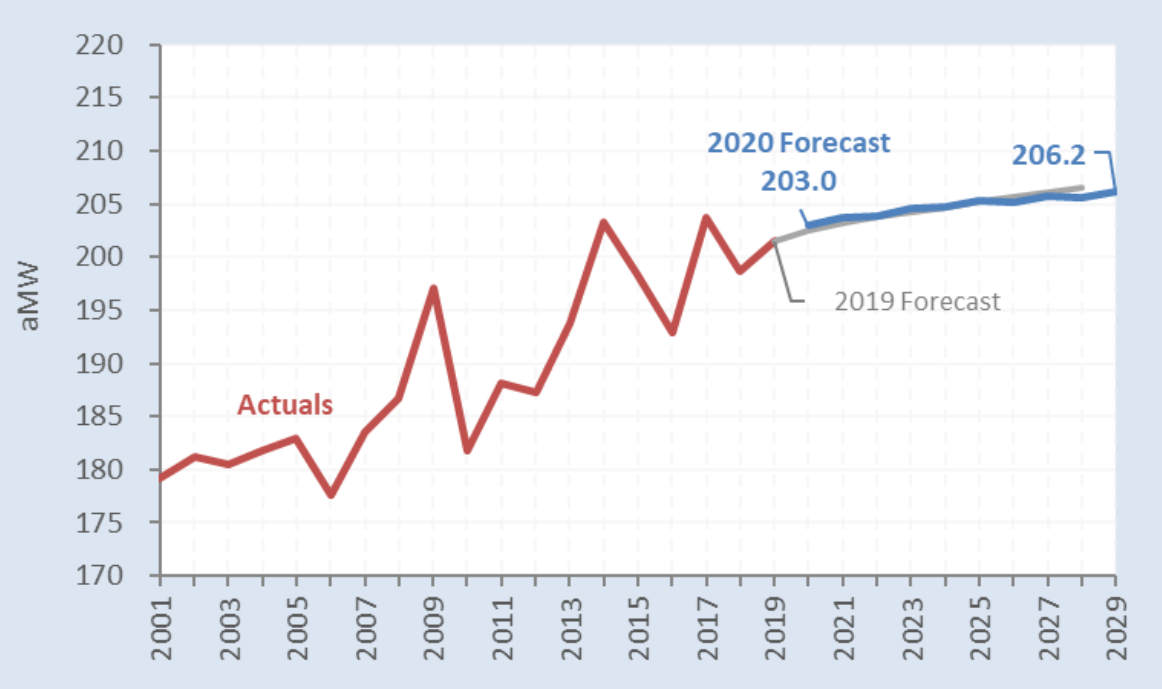


FIGURE 2: AVERAGE ANNUAL RATE OF LOAD GROWTH

## SECTION II: DISTRICT RESOURCES

The District sources its power requirements through purchases from BPA, as well as from several non-federal sources of power. This section describes the District's current and expected resources over the five-year period, 2021-2025.

### 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 services for the District based on the actual generation 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, 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 (Slice customers in aggregate are purchasing approximately 23% of the FCRPS in FY2021). 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 200.214 aMW.

The critical Slice allocation for FY2021 is 95.684 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 9.430 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 FY2021 Tier 1 Cost Allocator (TOCA) of 2.85022% and the BPA Composite Rate. BPA Costs are outlined in **Table 18: Cost per MWh from BPA** later in the document.

| Month (aMW) | FY2021 | FY2022 | FY2023 | FY2024 | FY2025 |
|---|---|---|---|---|---|
| **October** | 80.0 | 76.4 | 76.4 | 76.4 | 76.4 |
| **November** | 87.6 | 83.7 | 83.7 | 83.7 | 83.7 |
| **December** | 99.7 | 95.2 | 95.2 | 95.2 | 95.2 |
| **January** | 108.3 | 103.5 | 103.5 | 103.5 | 103.5 |
| **February** | 89.9 | 85.9 | 85.9 | 85.9 | 85.9 |
| **March** | 80.1 | 76.5 | 76.5 | 76.5 | 76.5 |
| **April** | 89.0 | 85.0 | 85.0 | 85.0 | 85.0 |
| **May** | 108.3 | 103.5 | 103.5 | 103.5 | 103.5 |
| **June** | 131.0 | 125.1 | 125.1 | 125.1 | 125.1 |
| **July** | 153.8 | 147.0 | 147.0 | 147.0 | 147.0 |
| **August** | 132.9 | 127.0 | 127.0 | 127.0 | 127.0 |
| **September** | 91.6 | 87.5 | 87.5 | 87.5 | 87.5 |
| **Block Total (aMW)** | 104.5 | 99.9 | 99.9 | 100.1 | 99.9 |
| **Block Total (MWh)** | 915,681 | 874,714 | 874,714 | 879,321 | 874,714 |

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 recently 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. It expects to maintain the current 125% TDG and flex spill practices moving forward. The District assumes the same operations around spill will continue for the 2021-2025 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 open market purchases, 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.

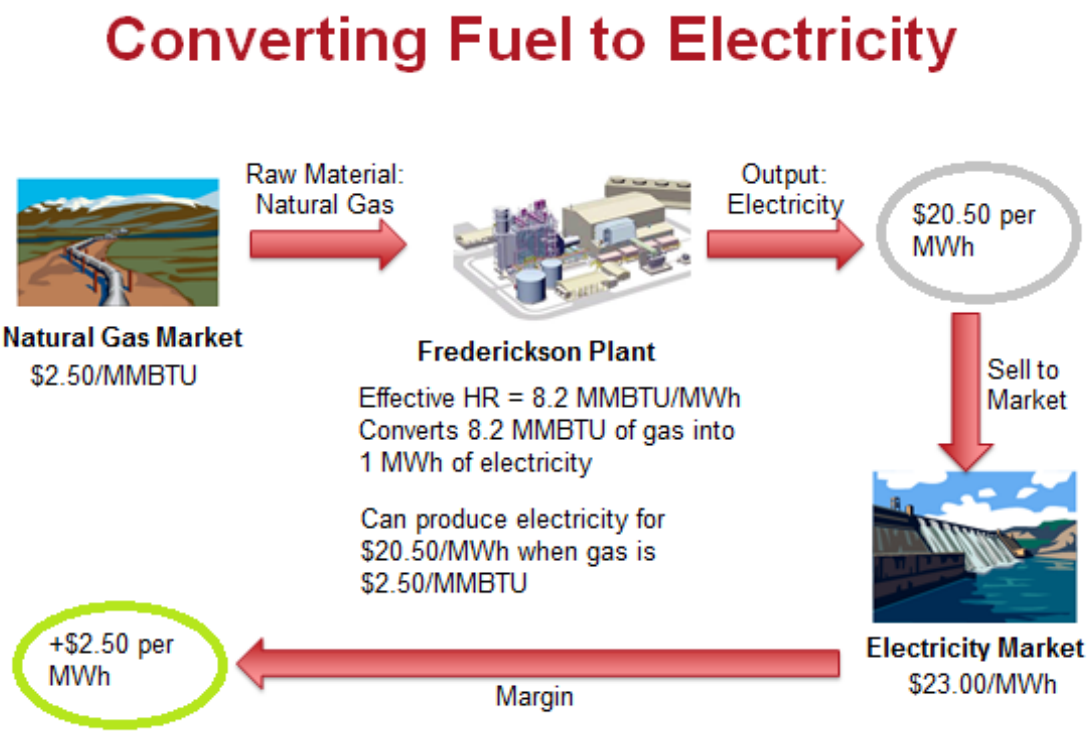


FIGURE 3: THERMAL CONVERSION OF FUEL TO ELECTRICITY

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** shows the Annual Cost dropping in 2021-2022, which is due to the expiration of the Frederickson contract in August 2022.

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 |
|---|---|---|---|---|---|
| **2021** | $6,813,128 | $1,213,848 | $1,529,278 | $9,556,254 | -3.6% |
| **2022*** | $4,573,970 | $807,985 | $1,131,607 | $6,513,562 | -31.8% |
| **2023** | $0 | $0 | $0 | $0 | N/A |
| **2024** | $0 | $0 | $0 | $0 | N/A |
| **2025** | $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 2021. 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).

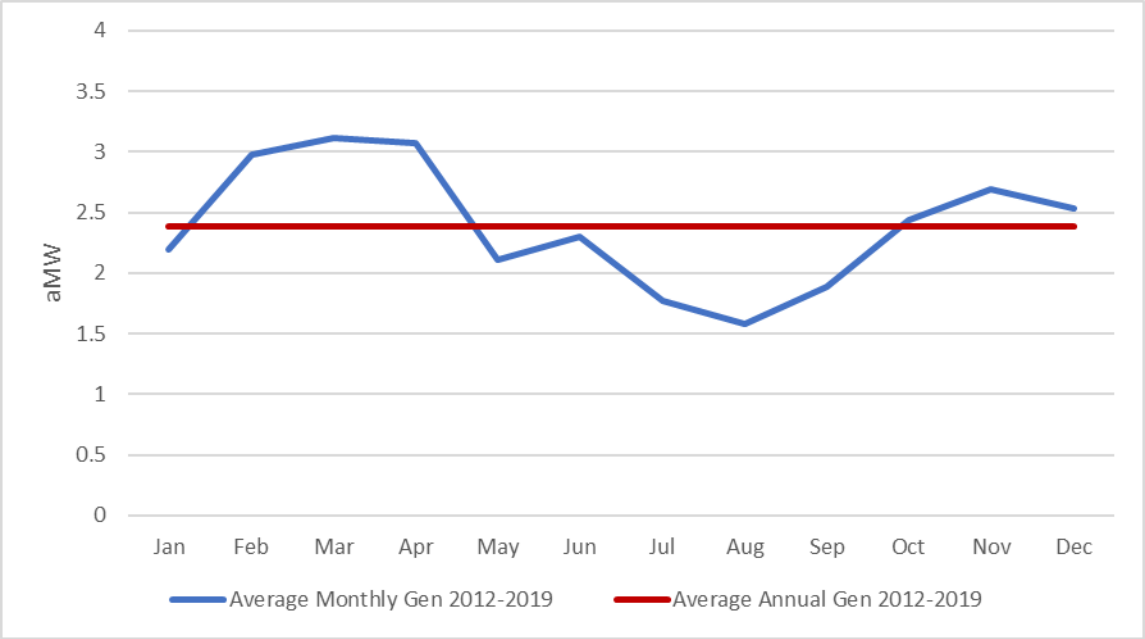


FIGURE 4: NINE CANYON AVERAGE MONTHLY GENERATION (2012-2019)

In 2008, the District contracted to purchase an additional 6 MW (approximately 2 aMW) of energy from Phase III of the project. The cost of Phase III is $76.17 per MWh in 2021. 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** displays the District's share of the actual monthly generation from the Nine Canyon Wind Project for the period January 2012 through December 2019.

The average cost of Phase I and Phase III is forecasted to be $69.75 per MWh in 2021.

**Table 5** is the annual cost of output purchased from each phase. In addition to these costs, the District incurs a $14,000 transmission cost each month.

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

| Year | Phase I Cost ($/MWh) | Phase III Cost ($/MWh) | Total Cost per MWh | Phase I Cost per Month | Phase III Cost per Month | Total Annual Cost |
|---|---|---|---|---|---|---|
| **2021** | $56.91 | $76.17 | $69.75 | $41,547 | $111,206 | $1,833,036 |
| **2022** | $42.69 | $76.17 | $65.01 | $31,160 | $111,206 | $1,708,396 |
| **2023** | $26.32 | $76.17 | $59.55 | $19,215 | $111,206 | $1,565,050 |
| **2024** | $24.19 | $76.17 | $58.84 | $17,656 | $111,206 | $1,546,345 |
| **2025** | $24.19 | $76.17 | $58.84 | $17,656 | $111,206 | $1,546,345 |

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 capacity from the White Creek Wind Project located near Goldendale, WA. This purchase produces approximately 1 aMW of power. The cost of the renewable energy is estimated to be $67.23 per MWh in 2021, and costs escalate by 2% each year of the contract. **Table 6** is a breakdown of the project's fixed cost assumptions through 2025.

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 | Annual Cost | YoY Increase |
|---|---|---|---|---|
| **2021** | $67.23 | $49,077 | $588,919 | 2% |
| **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% |

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

## WHITE CREEK WIND I

Benton PUD signed an agreement to purchase 6 MW from the White Creek Wind I Project capacity 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 2021. 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

$61.54 per MWh in 2021. Capital costs are fixed, and O&M costs escalate between 2-4% each year through 2025. **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 2019.

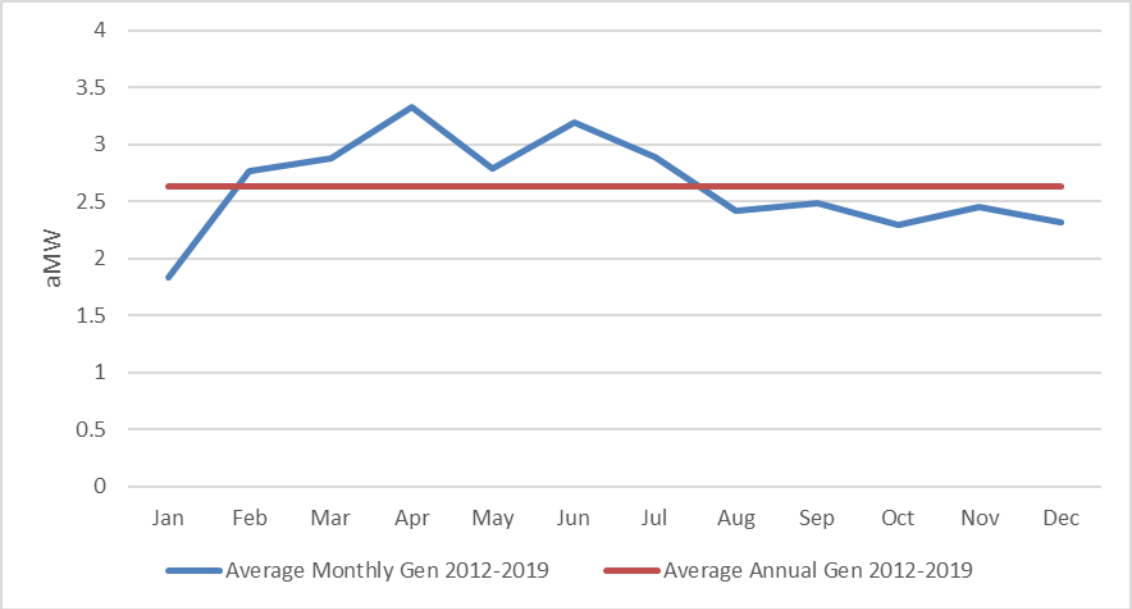


FIGURE 5: WHITE CREEK AVERAGE MONTHLY GENERATION (2012-2019)

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 | Capital Cost per MWh | O&M Cost per MWh | Annual O&M Cost | Annual Fixed Cost | Total Annual Cost |
|---|---|---|---|---|---|
| **2021** | $61.54 | $28.53 | $499,767 | $578,400 | $1,078,167 |
| **2022** | $62.39 | $29.38 | $514,760 | $578,400 | $1,093,160 |
| **2023** | $63.28 | $30.26 | $530,203 | $578,400 | $1,108,603 |
| **2024** | $64.18 | $31.17 | $546,109 | $578,400 | $1,124,509 |
| **2025** | $65.12 | $32.02 | $562,493 | $578,400 | $1,140,893 |

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 starts in July and ends in June.

Benton PUD owns a 14% share of the output from the Packwood Hydroelectric Project, equating to approximately 3.66 MW of generation capacity. The expected average output from Packwood is approximately 1 aMW. **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 does not qualify as a renewable resource under State of Washington's EIA.

| Year | Cost per MWh | Cost per Month | Annual Cost |
|---|---|---|---|
| **2021** | $53.92 | $39,363 | $472,352 |
| **2022** | $55.54 | $40,544 | $486,522 |
| **2023** | $57.21 | $41,760 | $501,118 |
| **2024** | $58.92 | $43,013 | $516,151 |
| **2025** | $60.69 | $44,303 | $531,636 |

TABLE 8: PACKWOOD HYDROELECTRIC PROJECT FIXED COSTS

## SEASONAL CAPACITY PRODUCT

The District has significant seasonal capacity deficits that cannot be reliably addressed with renewable energy resources such as wind and solar 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 energy shortfalls. 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 |
|---|---|---|---|
| **2021** | $0 | $0 | $0 |
| **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 |

TABLE 9: SEASONAL CAPACITY COSTS

## TRANSMISSION

The District has a Point to Point Transmission agreement with BPA Transmission Services. The firm annual demand is 423 MW. Fixed costs for Long-Term Point to Point Transmission are budgeted at $9.5 million in 2021. The District has assumed a 4% increase in transmission rates in FY2022; however, BPA will be releasing an initial proposal for FY2022 rates in December 2020. The District is projected to be long transmission for most hours of the year in 2021, as can be seen in **Figure 6** and **Table 10**. Net sales of surplus transmission are projected to be $900,000 per year in 2021-2025.

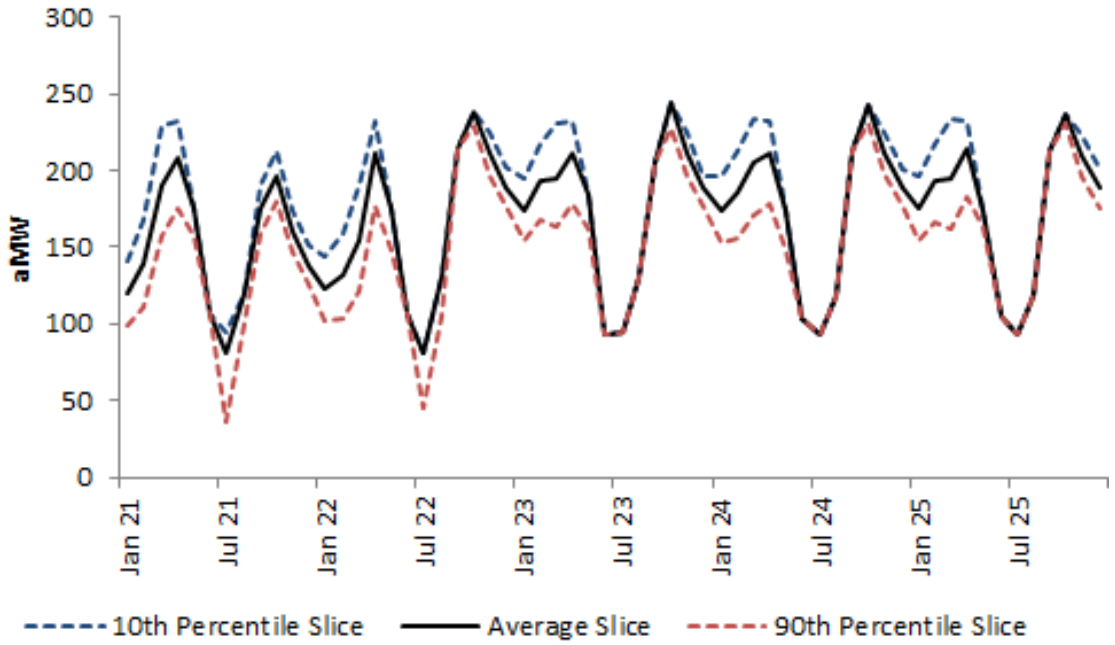


FIGURE 6: BENTON PUD 2021-2025 LONG-TERM HLH FIRM TRANSMISSION SURPLUS, NET OF LOAD & RESOURCES

| Resource Availability | BPA | Nice Canyon | White Creek | Packwood | Frederickson |
|---|---|---|---|---|---|
| **2021-2025 Average** | 223.5 | 2.7 | 3.0 | 1.5 | 32.5 |
| **Minimum** | 169.9 | 2.4 | 3.0 | 0.1 | 0.0 |
| **Median** | 226.1 | 2.6 | 3.0 | 1.4 | 50.0 |
| **LTF Transmission Rights** | 408.0 | 9.0 | 6.0 | 0.0 | 0.0 |

TABLE 10: 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 will occur.

## MONTHLY LOAD/RESOURCE BALANCE: 2021

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.

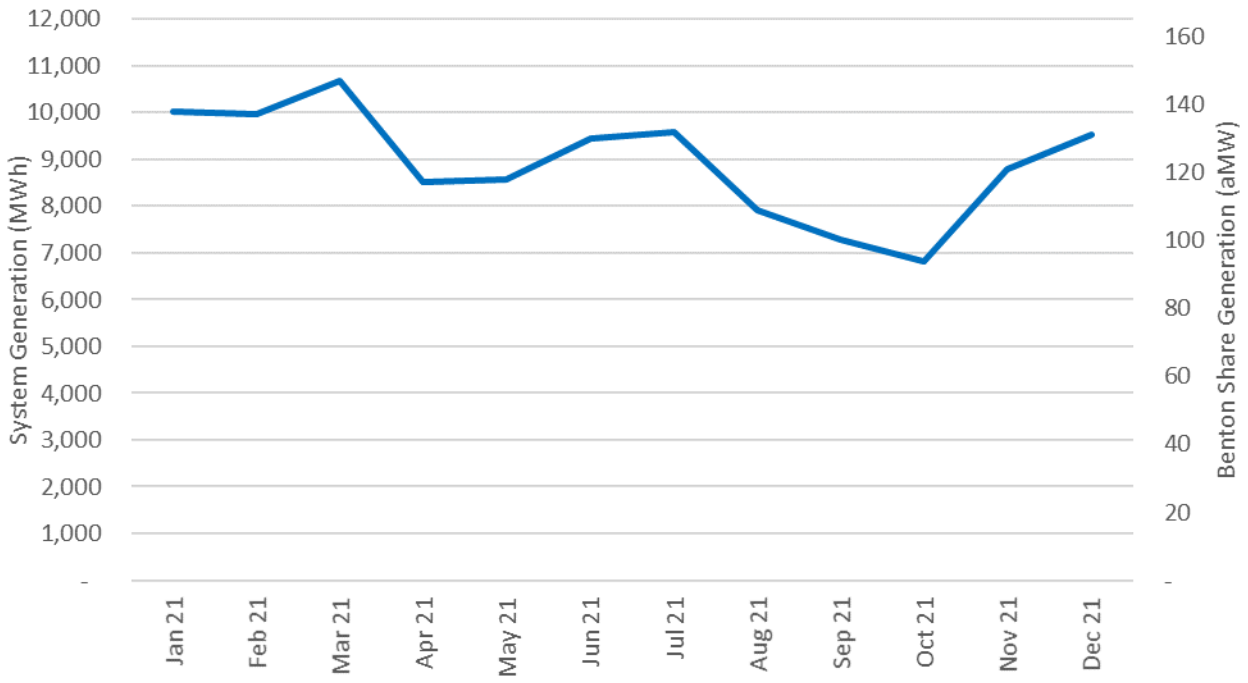


FIGURE 7: 50TH PERCENTILE 2021 MONTHLY SLICE GENERATION

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 hedged load/resource balance, given expected loads and with Frederickson economically dispatched in 2021. With Frederickson, the District has sufficient physical resources in 2021 on an average monthly energy basis. **Figure 9** excludes Frederickson as a resource, leading to a small LLH deficit in July with other months maintaining 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.

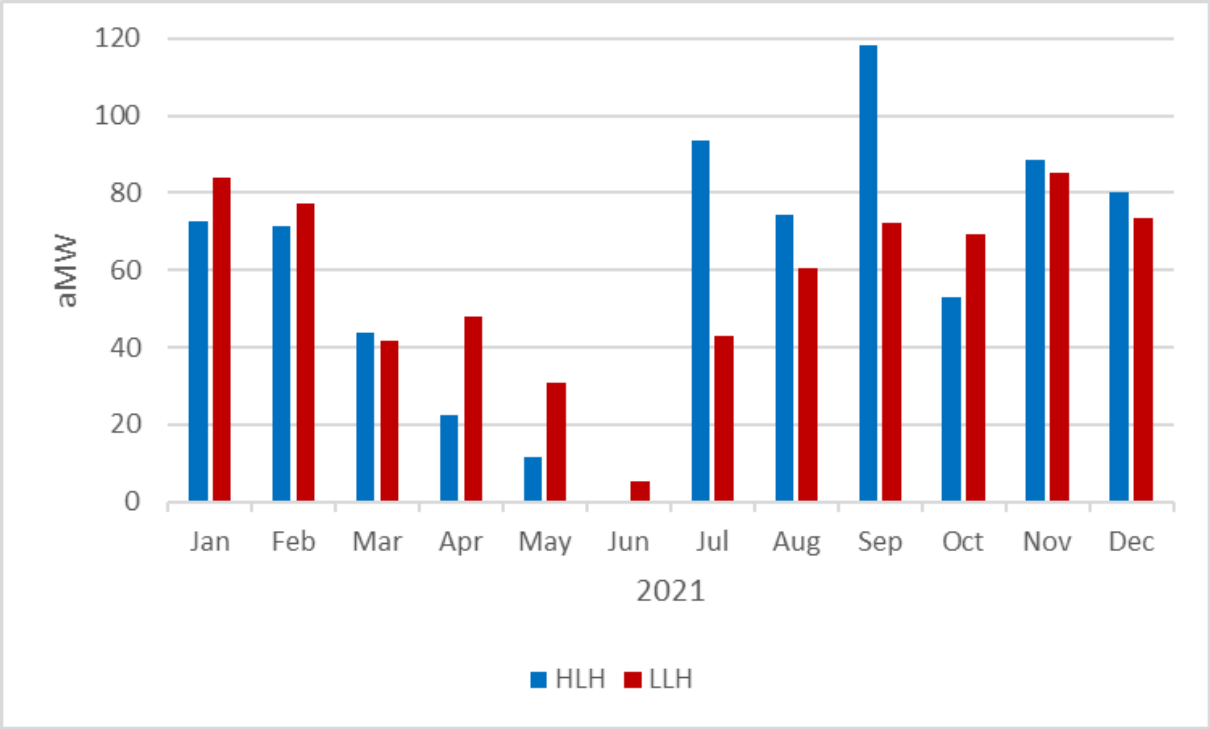


FIGURE 8: HEDGED PORTFOLIO NET POSITION, 50TH PERCENTILE SLICE, EXPECTED LOAD, FREDERICKSON ECONOMICALLY DISPATCHED

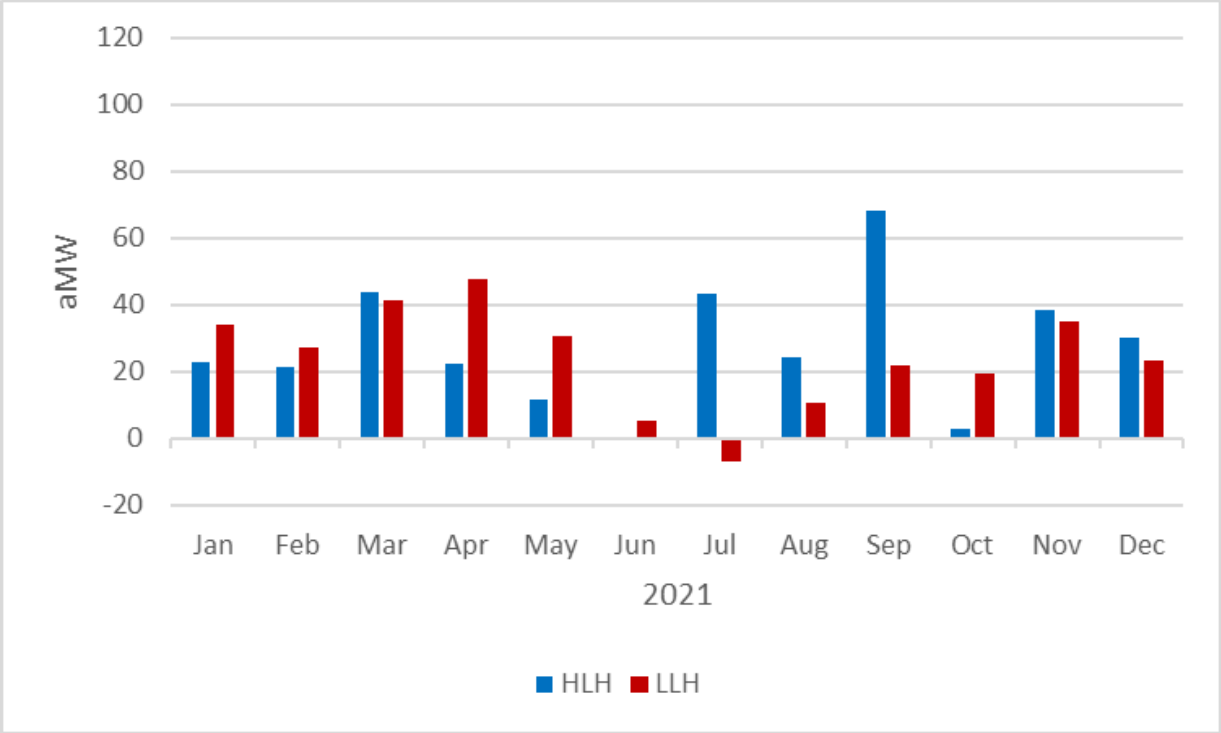


FIGURE 9: HEDGED PORTFOLIO NET POSITION, 50TH PERCENTILE SLICE, EXPECTED LOAD, FREDERICKSON EXCLUDED

## CAPACITY STUDY

District staff regularly reviews seasonal capacity positions to ensure that sufficient physical/financial power is 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 deficit capacity in the summer, 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 single highest average HLH load each year between 2011 and 2018. 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 reach 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 upwards of 385 aMW.

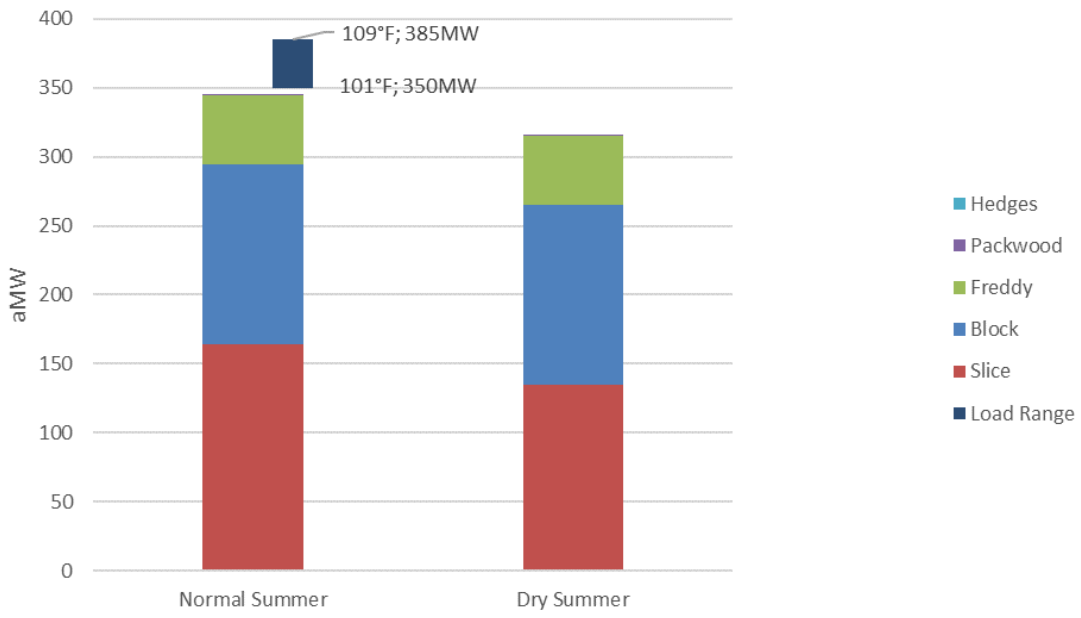


FIGURE 10: SUMMER PEAKING LOADS AND RESOURCES

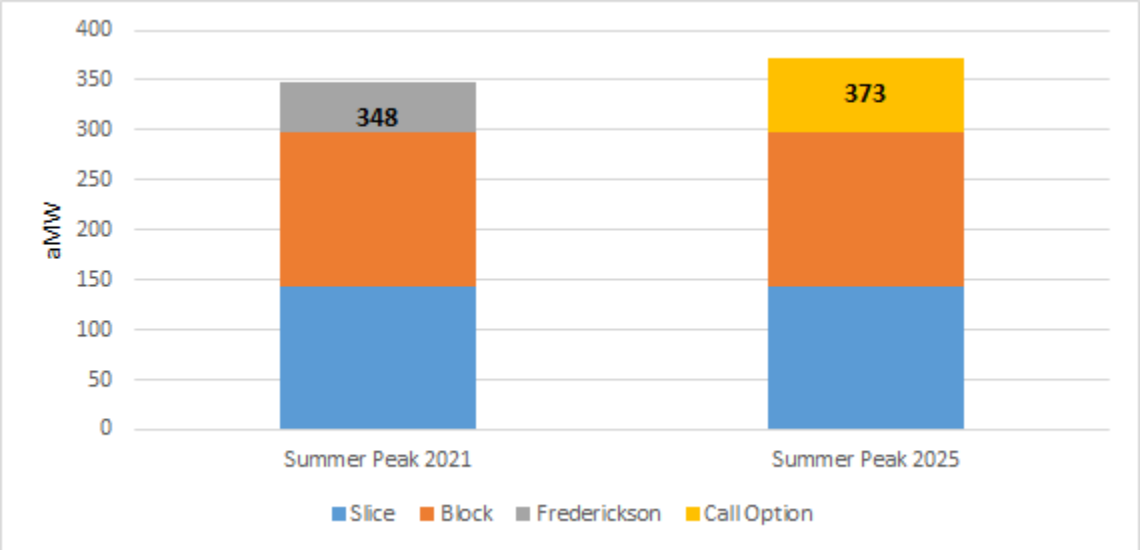


FIGURE 11: SUMMER HOURLY PEAKING RESOURCES

**Figure 11** shows summer hourly peaking resources for 2021 and 2025. The District is forecasted to be short of meeting its loads during a 2021 summer peak event. The District purchased an average of 65 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 8 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.

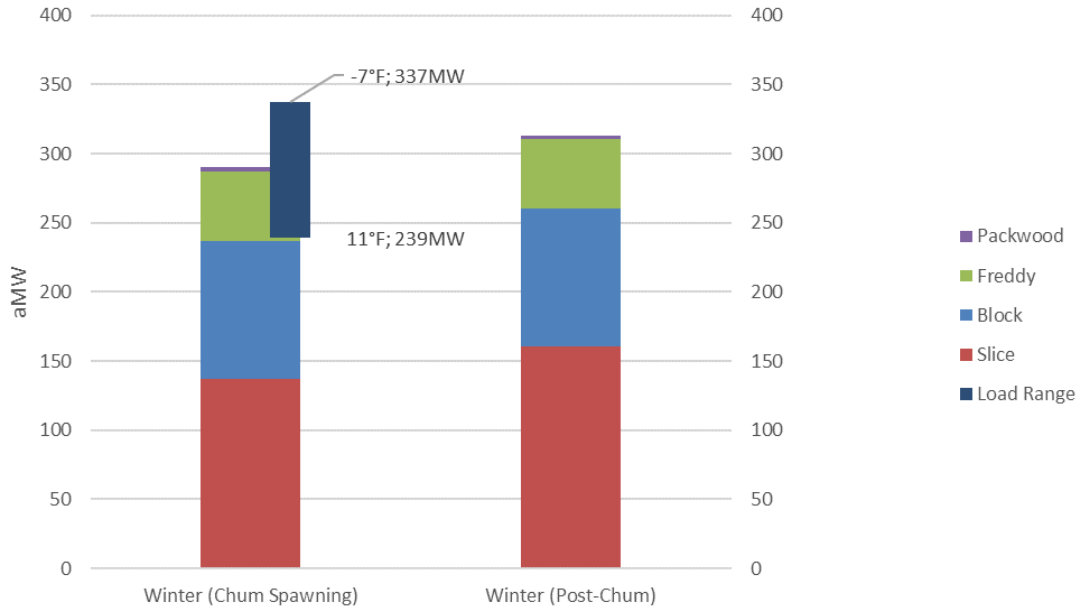


FIGURE 12: WINTER PEAKING LOADS AND RESOURCES

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 long 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 2021 and 2025.

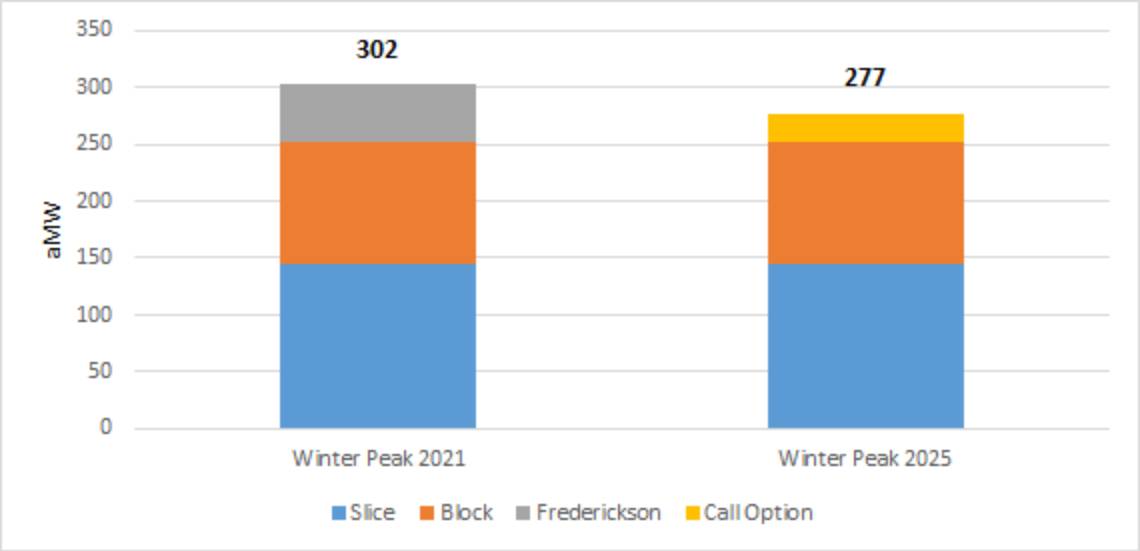


FIGURE 13: WINTER HOURLY PEAKING RESOURCES

## ANNUAL LOAD/RESOURCE BALANCE: 2021-2025

The following section examines the District's annual average load/resource balance under critical water from 2021-2025. **Figure 14** represents the District's current resource stack to load from 2021 to 2025. Note in **Table 11** that load will exceed critical slice/block by 15 aMW in BPA's FY21. As shown below, the District's other resources make up for this deficit.

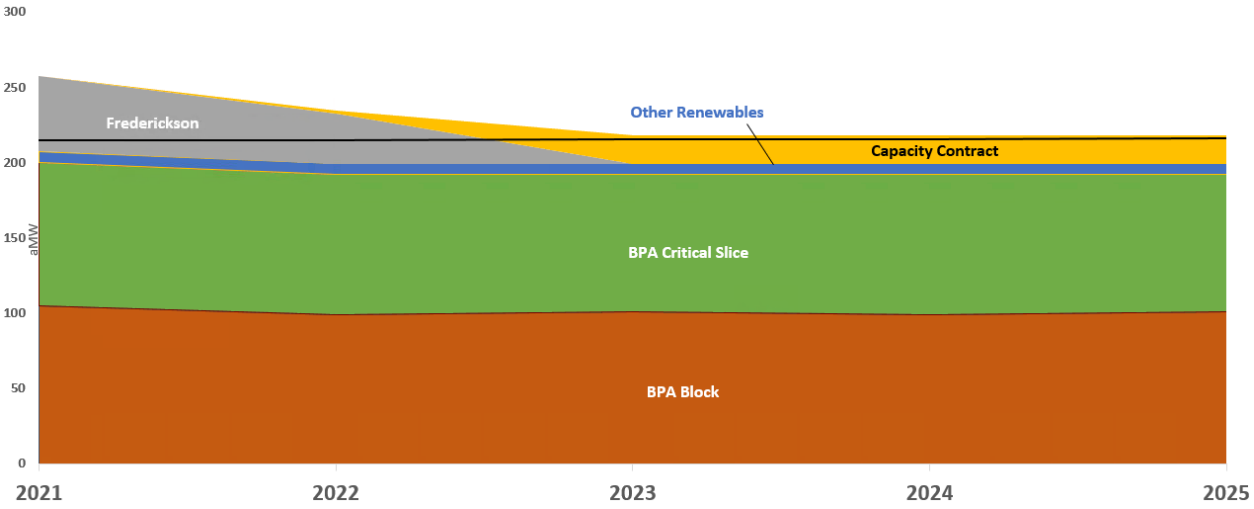


FIGURE 14: DISTRICT'S RESOURCE STACK

| All Units in aMW | BPA 2021 | BPA 2022 | BPA 2023 | BPA 2024 | BPA 2025 |
|---|---|---|---|---|---|
| **Load w/Tx Losses** | 214.6 | 214.8 | 215.5 | 215.6 | 216.3 |
| **BPA Block** | 104.5 | 99.0 | 100.8 | 99.0 | 100.8 |
| **BPA Critical Slice** | 95.7 | 93.0 | 91.2 | 93.0 | 91.2 |
| **Other Renewables** | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 |
| **Frederickson** | 50.0 | 33.3 | 0.0 | 0.0 | 0.0 |
| **Capacity Contract** | 0.0 | 2.1 | 18.9 | 18.9 | 18.9 |
| **Net Position** | **42.8** | **19.8** | **2.6** | **2.5** | **1.8** |

TABLE 11: ANNUAL LOAD/RESOURCE BALANCE, 2021-2025

**Figure 15** and **Figure 16** show that, on average, 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 reliable capacity resources for meeting a customer's 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.

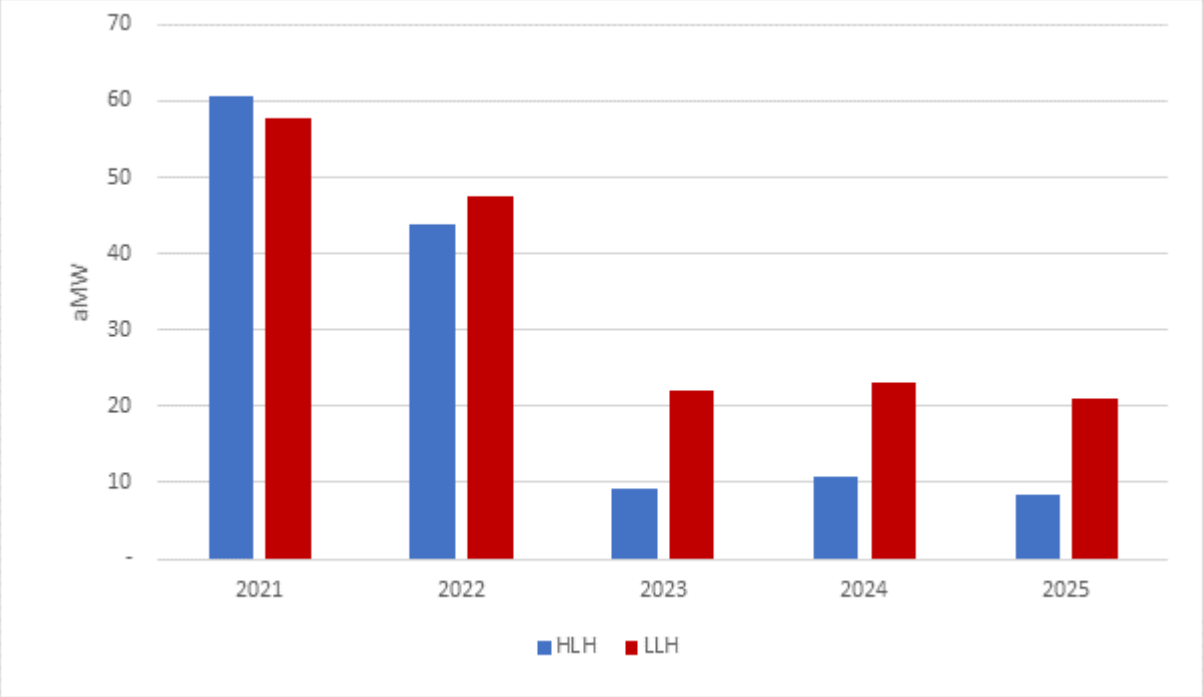


FIGURE 15: 2021-2025 ANNUAL NET POSITION, 50TH PERCENTILE SLICE, EXPECTED LOAD, FREDERICKSON ECONOMICALLY DISPATCHED

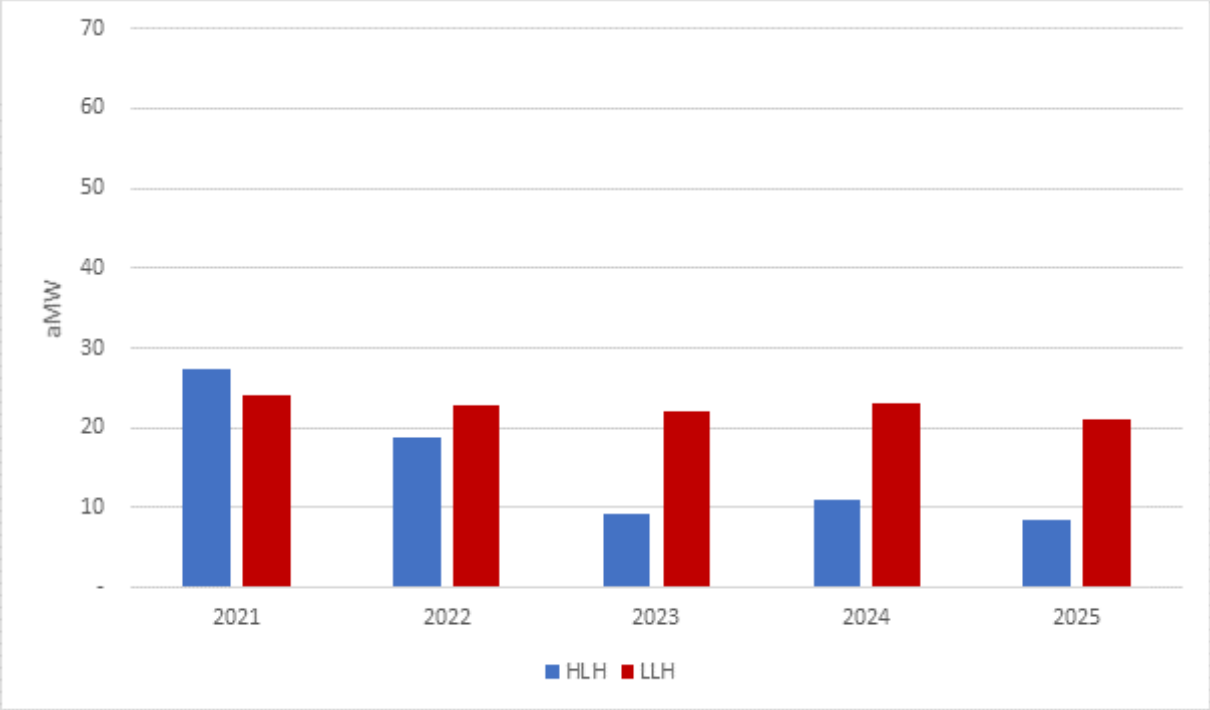


FIGURE 16: 2021-2025 ANNUAL NET POSITION, 50TH PERCENTILE SLICE, EXPECTED LOAD, FREDERICKSON EXCLUDED

## RENEWABLE LOAD/RESOURCE BALANCE: 2021-2025

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 12**, it's anticipated that the District will have sufficient renewable resources to meet EIA requirements through 2024. Once the Idaho Wind Projects contract expires in 2024 the district will become short of the requirement by 3.1 aMW.

As shown in **Table 13** 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 231.1MW of wind generating capacity in the WECC. The district is also entitled to approximately 12,000 wind RECs produced by BPA and approximately 20,000 incremental hydro RECs produced by BPA. These incremental hydro RECs must be used in the year they are generated.

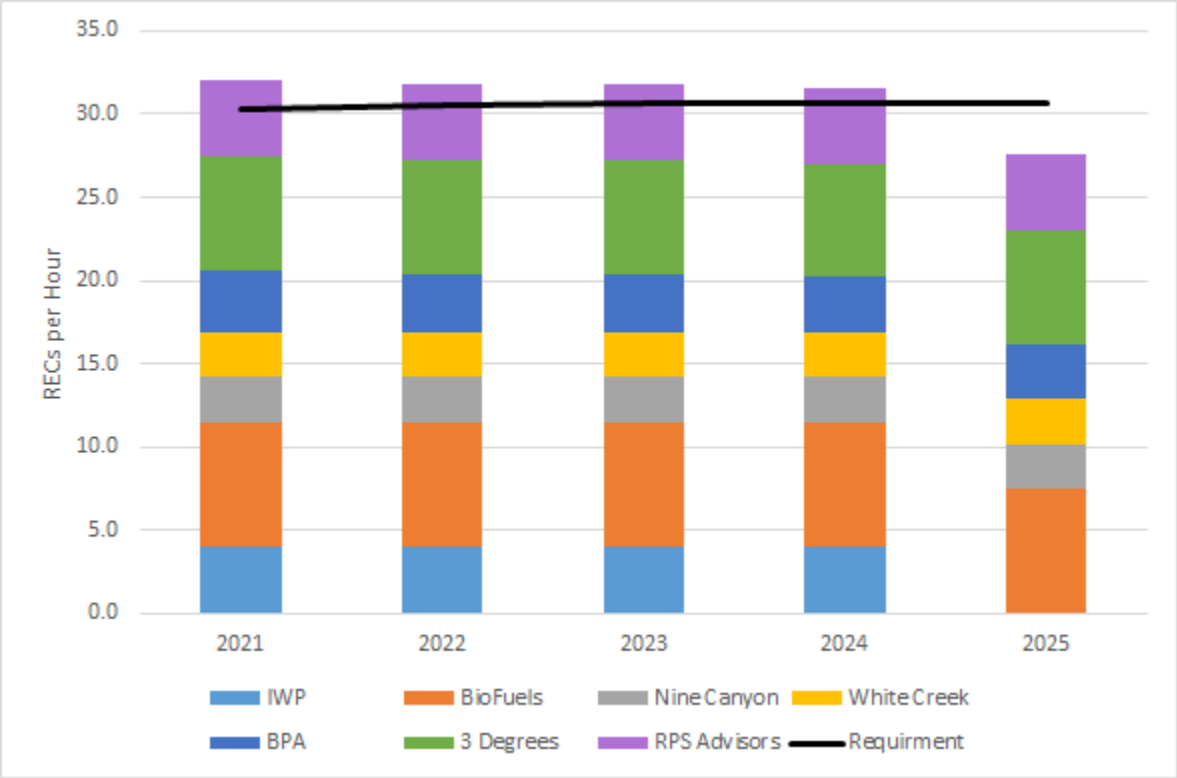


FIGURE 17: RENEWABLE RESOURCES AND RECS VS. EIA REQUIREMENT

| | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| **Requirement** | 30.3 | 30.5 | 30.6 | 30.6 | 30.7 |
| **IWP** | 4.0 | 4.0 | 4.0 | 4.0 | 0.0 |
| **BioFuels** | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 |
| **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** | 3.7 | 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** | 1.7 | 1.3 | 1.2 | 1.0 | -3.1 |

TABLE 12: 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 | IWP | BioFuels | 3 Degrees | RPS Advisors |
|---|---|---|---|---|
| **2021** | 35,003/$6.75 | 33,000/$11.08 | 60,000/$5.90 | 40,000/$6.00 |
| **2022** | 35,003/$6.75 | 33,000/$11.64 | 60,000/$5.90 | 40,000/$6.00 |
| **2023** | 35,003/$6.75 | 33,000/$12.22 | 60,000/$5.90 | 40,000/$6.00 |
| **2024** | 35,003/$6.75 | 33,000/$12.83 | 60,000/$5.90 | 40,000/$6.00 |
| **2025** | 35,003/$8.00* | 33,000/$13.47 | 60,000/$5.90 | 40,000/$6.00 |
| *** IWP Replacement, estimated cost per REC** | | | | |

TABLE 13: 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 2021-2025. 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 200.214 aMW in FY2021. The District's total retail load for FY21 is 210.563 aMW, with 200.214 aMW being served with BPA resources in critical water conditions, with an additional 9.43 aMW that the District is responsible for procuring itself. The RHWM is the limiting factor in FY2021-2025 when accounting for expected future load growth. The FY2020 TOCA is 2.85022% and the Composite Charge is $1,980,553/TOCA%/month. The Composite Charge is forecasted to increase by 4.0% in FY2022 to $2,059,775/TOCA%/month. The total Composite charge in CY2021 is expected to be $68,417,543.
- **Non-Slice Charge:** This charge is in reality is a credit. It is designed to return to customers certain BPA credits, primarily their 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 FY2021, NSTOCA is 1.48230%. The Non-Slice Rate is ($200,365)/NSTOCA %/month in FY2020. The

Non-Slice Charge is expected to be the same in FY2022. The total credit in CY 2021 is expected to be ($3,564,012).

- **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. BPA is expected to end FY2020 with $309M.
- **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. FRP may increase to $40M in BP-22 and beyond, if needed to reach 60 days. Due to PPC member relief and request, the FRP surcharge has been removed through September 2021.
- **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 does not project any future refinancing opportunities in 2021. FY2021-2025 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 rate case estimate of the Mid-C market. The charge is a credit of $485,014 in CY2021. 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 $9,484,506 in CY2021. Staff is planning for a 4% rate increase for FY2022.
- **Load Regulation Cost:** Load regulation costs increased significantly in the past several years and is forecasted to be $911,754 in CY2021. The large increase is due to a BPA decision to recover all the cost of service in this rate. There is a similar reduction in the power rates as a result. The Load Regulation rate is planning for a 4% increase in FY2022.
- **Operating Reserves – Spinning:** $585,380 in CY2021. Staff is planning for a 4% increase in FY2022. Spinning Reserves are 3% of total transmission schedules for generation and 3% of schedules for load.
- **Operating Reserves – Supplemental:** $ 511,055 in CY2021. Staff is planning for a 4% increase in FY2022. Similar to spinning reserves, supplemental reserves are 3% of total transmission schedules for generation and 3% of schedules for load.
- **Energy Imbalance/UAI: Roughly** $100,000 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, Net:** $2,817 per year.
- **Reliability Coordinator Charges:** $163,992 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 CY2021.
- **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 $11.11 per MWh resulting in $3,468,978 in CY2021. **Table 14** displays the monthly credit that the District receives.

| May | June | July | August | September |
|---|---|---|---|---|
| ($590,112) | ($835,953) | ($988,830) | ($698,185) | ($355,897) |

TABLE 14: IRRIGATION MITIGATION CREDIT AMOUNTS

- **Net Cost of Conservation:**

| Year | BPA EEI Allocation | Cost of Conservation | Net Cost of Conservation |
|---|---|---|---|
| **2021** | $(2,265,000) | $2,594,312 | $329,312 |
| **2022** | $(2,516,125) | $2,997,895 | $481,770 |
| **2023** | $(1,284,952) | $1,997,924 | $712,792 |
| **2024** | $(2,516,125) | $3,147,790 | $631,665 |
| **2025** | $(1,284,952) | $2,097,820 | $812,869 |

TABLE 15: 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:** $1,013,031 in 2021, increasing to $1,140,174 by 2025.
- **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 $1,700,590 annually is

budgeted for Scheduling and Risk Management Services in 2021. The cost is assumed to increase by 3% annually.

- An estimated charge for consulting services equal $150,600 for 2021 and $189,100 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

- **Hedging costs:** $350,000 per year is budgeted for option premiums in 2021. The amount increases to $552,000 in 2022 to account for the expiration of the Frederickson contract at the end of August and the start of the seasonal capacity contract in December. Additional purchases of call options are anticipated to make up for the reduction in generation capacity. The option premium budget increases to $2,068,000 in 2023 to account for the first full year of the seasonal capacity contract and forecasted purchases for the first full year without Frederickson.
- **Frederickson:** The monthly Frederickson fixed payment totals roughly $668,000. 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 $179,840 per month that escalates by approximately 3.0% per year, and a pipeline capacity charge of about $100,000 per month. Fixed costs are forecasted at $8,026,976 annually. Volumetric charges vary based on the plant's actual dispatch.
- **White Creek Wind 1:** $1,078,167 in 2021. Costs escalate by approximately 1.4% annually.
- **LL&P Wind:** $588,919 in 2021. Costs escalate by 2% per year.
- **Nine Canyon Wind Phases 1 & 3:** $2,002,584 in 2021 including transmission.
- **Packwood:** $472,352 in 2021 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 25$^{th}$ percentile net power cost from the Stochastic Model outputs as its annual budget in year 1 (2021), and the 50$^{th}$ percentile net power cost as the budget in years 2-5 (2022-2025). **Table 16** is the summary power cost information associated with the District's budget for 2021-2025**.**

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

| **Benton PUD**<br>**Financial Model** | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| I. FIXED COSTS | | | | | |
| BPA COSTS | | | | | |
| Tier 1 | | | | | |
| Composite | $68,417,543 | $70,449,747 | $71,154,244 | $73,267,737 | $74,183,583 |
| Non-Slice | ($3,564,012) | ($3,564,012) | ($3,564,012) | ($3,564,012) | ($3,564,012) |
| Slice True-up/CRAC | $205,875 | $823,500 | $617,625 | $0 | $0 |
| Load Shaping | ($485,014) | ($687,736) | ($660,156) | ($611,418) | ($683,517) |
| 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 | ($3,468,978) | ($3,468,978) | ($3,468,978) | ($3,468,978) | ($3,468,978) |
| Conservation | ($2,265,000) | ($2,516,125) | ($1,284,952) | ($2,516,125) | ($1,284,951) |
| Transmission | | | | | |
| Long-Term PTP | $9,484,506 | $9,766,224 | $9,863,886 | $10,156,873 | $10,410,795 |
| Short-Term PTP | $77,976 | $77,976 | $77,976 | $77,976 | $77,976 |
| Load Regulation | $911,754 | $940,908 | $952,277 | $985,053 | $1,006,781 |
| Operating Reserves -- Spinning | $585,380 | $604,695 | $575,604 | $597,284 | $611,912 |
| Operating Reserves -- Supplemental | $511,055 | $527,918 | $502,521 | $521,448 | $534,220 |
| Energy Imbalance UAI | $99,996 | $99,996 | $99,996 | $99,996 | $99,996 |
| GTA Delivery Charge | $2,817 | $2,739 | $2,675 | $48,369 | $48,334 |
| Non-BPA Transmission Purchases; | | | | | |
| WECC/Peak Fees | $163,992 | $163,992 | $163,992 | $163,992 | $163,992 |
| PTP Resales | ($900,000) | ($900,000) | ($900,000) | ($900,000) | ($900,000) |
| NON BPA RESOURCE COSTS | | | | | |
| Frederickson | $8,026,976 | $5,381,955 | $0 | $0 | $0 |
| White Creek | $1,667,086 | $1,693,858 | $1,721,278 | $1,749,460 | $1,776,845 |
| Nine Canyon | $2,002,584 | $1,877,944 | $1,734,598 | $1,715,893 | $1,715,893 |
| Packwood | $472,352 | $486,522 | $501,118 | $516,151 | $531,636 |
| OTHER POWER COSTS | | | | | |
| Internal Costs and WECC fees | $1,013,031 | $1,043,422 | $1,074,724 | $1,106,965 | $1,140,174 |
| TEA Scheduling & Risk Management | $1,700,590 | $1,751,608 | $1,804,156 | $1,858,280 | $1,909,280 |
| TEA Consulting | $150,600 | $189,100 | $109,800 | $150,700 | $116,500 |
| Cost of Conservation | $2,594,312 | $2,997,895 | $1,997,924 | $3,147,790 | $2,097,820 |
| Option Premium | $350,000 | $552,000 | $2,068,000 | $2,068,000 | $2,164,000 |
| REC PPAs | $ 1,176,910 | $ 1,195,390 | $ 1,214,530 | $ 1,234,660 | $ 1,299,534 |
| II. VARIABLE COSTS | | | | | |
| RESOURCE VARIABLE COSTS | | | | | |
| Frederickson | | | | | |
| Volumetric Charges | $1,529,278 | $1,131,607 | $0 | $0 | $0 |
| Spot Gas | $2,081,511 | $3,455,949 | $0 | $0 | $0 |
| Forward Gas Purchases | $4,030,424 | $499,320 | $0 | $0 | $0 |
| Forward Gas Sales | ($621,770) | $0 | $0 | $0 | $0 |
| Forward Power Purchases | $835,172 | $0 | $0 | $0 | $0 |
| Forward Power Sales | ($7,484,247) | ($1,114,607) | $0 | $0 | $0 |
| Spot Power HLH | ($2,410,680) | ($3,698,656) | $0 | $0 | $0 |
| Spot Power LLH | ($1,953,336) | ($2,260,788) | $0 | $0 | $0 |
| BALANCING MARKET | | | | | |
| HLH Sales | ($3,147,388) | ($3,679,260) | ($3,213,649) | ($3,332,757) | ($3,258,579) |
| HLH Purchases | $266,750 | $579,853 | $2,171,671 | $2,148,459 | $2,070,196 |
| LLH Sales | ($1,353,947) | ($2,420,181) | ($2,412,197) | ($2,303,424) | ($2,475,038) |
| LLH Purchases | $388,711 | $167,536 | $277,649 | $184,285 | $133,016 |
| FORWARD MARKET | | | | | |
| Sales HLH | ($1,099,400) | ($199,120) | $0 | $0 | $0 |
| Sales LLH | ($472,756) | ($127,305) | $0 | $0 | $0 |
| Purchases HLH | $3,849,556 | $1,908,676 | $0 | $0 | $0 |
| Purchases LLH | $94,248 | $0 | $0 | $0 | $0 |
| **NET POWER COST** | **$83,303,201** | **$83,572,304** | **$83,021,043** | **$84,941,400** | **$86,296,153** |

TABLE 16: FIVE YEAR BUDGET PROPOSAL

## 2020 VS. 2021 BUDGET VARIANCE

The 2021 net power supply budget are reduced slightly relative to the 2020 budget, which is summarized in **Table 17**. The largest year-over-year changes are expected purchased power and sales for resale.

**Table 18** shows the change in the cost per MWh from BPA.

| | 2020 Budget | 2021 Budget | % Change |
|---|---|---|---|
| **BPA Purchased Power** | $60,759,098 | $60,944,158 | 0% |
| **Other Purchased Power** | $25,276,523 | $26,149,788 | 3% |
| **Net Conservation** | $343,793 | $329,312 | -4% |
| **Purchased Transmission and Ancillaries** | $13,567,045 | $13,801,697 | 2% |
| **Gross Power Supply** | $99,946,459 | $101,224,954 | 1% |
| **Less: Sales for Resale** | ($15,927,755) | ($17,921,753) | 13% |
| **Net Power Supply** | $84,018,704 | $83,303,201 | -1% |

TABLE 17: POWER SUPPLY BUDGET VARIANCE SUMMARY

| | 2020 Budget | 2021 Budget | % Change |
|---|---|---|---|
| **BPA Power Cost** | $60,759,098 | $60,944,158 | 0% |
| **BPA Transmission Cost** | $10,857,697 | $10,937,475 | 1% |
| **MWh from BPA** | 1,884,735 | 1,857,333 | -2% |
| **BPA Power Cost per MWh** | $32.24 | $32.81 | 2% |
| **Transmission Cost per MWh** | $5.76 | $5.89 | 2% |

TABLE 18: COST PER MWH FROM BPA

**Table 19** compares the detailed 2021 power supply budget to the 2020 budget.

| **Benton PUD**<br>**Financial Model** | 2020 Budget | 2021 Budget | $ Change | % Change |
|---|---|---|---|---|
| I. FIXED COSTS | | | | |
| BPA COSTS | | | | |
| Tier 1 | | | | |
| Composite | $67,740,141 | $68,417,543 | $677,401 | 1.0% |
| Non-Slice | ($3,562,257) | ($3,564,012) | ($1,755) | 0.0% |
| Slice True-up/CRAC | $639,458 | $205,875 | ($433,583) | -67.8% |
| Load Shaping | ($428,011) | ($485,014) | ($57,003) | 13.3% |
| Other BPA | | | | |
| REP Refund | $0 | $0 | $0 | NO CHANGE |
| BPA Power Prepay Credit | ($161,256) | ($161,256) | $0 | 0.0% |
| Irrigation Mitigation | ($3,468,978) | ($3,468,978) | $0 | 0.0% |
| Conservation | ($2,516,125) | ($2,265,000) | $251,125 | -10.0% |
| Transmission | | | | |
| Long-Term PTP | $9,390,600 | $9,484,506 | $93,906 | 1.0% |
| Short-Term PTP | $77,976 | $77,976 | $0 | 0.0% |
| Load Regulation | $900,784 | $911,754 | $10,969 | 1.2% |
| Operating Reserves -- Spinning | $598,742 | $585,380 | ($13,363) | -2.2% |
| Operating Reserves -- Supplemental | $522,722 | $511,055 | ($11,666) | -2.2% |
| Energy Imbalance UAI | $99,996 | $99,996 | $0 | 0.0% |
| GTA Delivery Charge | $2,885 | $2,817 | ($68) | -2.4% |
| Non-BPA Transmission Purchases; | | | | |
| WECC/Peak Fees | $163,992 | $163,992 | $0 | 0.0% |
| PTP Resales | ($900,000) | ($900,000) | $0 | 0.0% |
| NON BPA RESOURCE COSTS | | | | |
| Frederickson | $7,968,083 | $8,026,976 | $58,893 | 0.7% |
| White Creek | $1,677,347 | $1,667,086 | ($10,261) | -0.6% |
| Nine Canyon | $2,002,584 | $2,002,584 | $0 | 0.0% |
| Packwood | $403,718 | $472,352 | $68,633 | 17.0% |
| OTHER POWER COSTS | | | | |
| Internal Costs and WECC fees | $880,058 | $1,013,031 | $132,973 | 15.1% |
| TEA Scheduling & Risk Management | $1,651,058 | $1,700,590 | $49,532 | 3.0% |
| TEA Consulting | $178,231 | $150,600 | ($27,631) | -15.5% |
| Cost of Conservation | $2,859,918 | $2,594,312 | ($265,606) | -9.3% |
| Option Premium | $350,000 | $350,000 | $0 | 0.0% |
| REC PPAs | $1,152,400 | $1,176,910 | $24,510 | 2.1% |
| II. VARIABLE COSTS | | | | |
| RESOURCE VARIABLE COSTS | | | | |
| Frederickson | | | | |
| Volumetric Charges | $1,941,383 | $1,529,278 | ($412,105) | -21.2% |
| Spot Gas | $2,351,213 | $2,081,511 | ($269,702) | -11.5% |
| Forward Gas Purchases | $4,760,646 | $4,030,424 | ($730,222) | -15.3% |
| Forward Gas Sales | ($970,060) | ($621,770) | $348,290 | -35.9% |
| Forward Power Purchases | $1,181,134 | $835,172 | ($345,962) | -29.3% |
| Forward Power Sales | ($7,929,891) | ($7,484,247) | $445,644 | -5.6% |
| Spot Power HLH | ($2,370,640) | ($2,410,680) | ($40,040) | 1.7% |
| Spot Power LLH | ($1,651,484) | ($1,953,336) | ($301,852) | 18.3% |
| BALANCING MARKET | | | | |
| HLH Sales | ($2,007,418) | ($3,147,388) | ($1,139,970) | 56.8% |
| HLH Purchases | $1,579,544 | $266,750 | ($1,312,794) | -83.1% |
| LLH Sales | ($1,022,537) | ($1,353,947) | ($331,409) | 32.4% |
| LLH Purchases | $247,747 | $388,711 | $140,964 | 56.9% |
| FORWARD MARKET | | | | |
| Sales HLH | ($314,160) | ($1,099,400) | ($785,240) | 249.9% |
| Sales LLH | ($631,625) | ($472,756) | $158,869 | -25.2% |
| Purchases HLH | $630,784 | $3,849,556 | $3,218,772 | 510.3% |
| Purchases LLH | $0 | $94,248 | $94,248 | NA |
| **NET POWER COST** | $84,018,704 | $83,303,201 | ($715,503) | -0.9% |

TABLE 19: 2021 AND 2020 DETAILED POWER SUPPLY COST COMPARISON

| Budget Item | | Notes |
|---|---|---|
| 1. | Composite Charge | 1.0% increase in 2021 costs from 2020 due to expected BPA Power BP-22 rate change, beginning October 2021 |
| 2. | Non-Slice Charge | No change in 2021 costs from 2020 |
| 3. | Slice True-up/CRAC | 67.8% decrease in 2021 costs from 2020 due to expected changes in the Financial Reserve Policy (FRP) Surcharge |
| 4. | Load Shaping Charge | 13.3% increase in 2021 credit vs 2020 credit due to large reduction in T1SC (8 aMW to BPUD) |
| 5. | Conservation Credit | Conservation Credit reduced by 10.0% from 2020. District adjusted biennium spending (2020-2021) due to COVID impacts on conservation projects. Adjustments in 2020 impacted 2021 directly. |
| 6. | Long-Term PTP | 1.0% increase in 2021 costs over 2020 due to expected BPA Power BP-22 rate change, beginning October 2021 |
| 7. | Cost of Conservation | Cost of Conservation increased to $2,594,312. Conservation budgets typically follow the cycle of conservation credits: greater in even years, less in odd years. This was changed in the current biennium 2020-2021 due to the impact of COVID on outreach and projects for Conservation Net Cost of Conservation is forecasted to be $329,312. |
| 8. | Frederickson | Power sales margins from Frederickson operations are forecasted to be $3,952,393, an increase of 49% from the 2020 budget. This is due to an increase in projected Frederickson dispatch and active Delta Hedging of the plant. |
| 9. | Balancing Market | The Slice generation assumption for 2021 is lower relative to the 2020 budget. |

| Year | Avg. Slice Generation |
|---|---|
| **2020 Budget** | 110.4 |
| **2021 Budget** | 107.4 |
| **Delta** | -3.0 |

| | | |
|---|---|---|
| 10. | Forward Market | The District has approximately 48% of its net Slice length hedged with forward contracts for calendar year 2021. |

# 2021 PURCHASED MWHS BY MONTH

| Purchased MWhs | | | January | February | March | April | May | June | July | August | September | October | November | December | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | BPA | | | | | | | | | | | | | | |
| | | Slice HLH | 54,883 | 51,069 | 59,216 | 45,293 | 45,312 | 49,251 | 48,270 | 43,243 | 40,423 | 38,917 | 49,385 | 55,717 | 580,979 |
| | | Slice LLH | 39,700 | 31,634 | 35,209 | 26,130 | 31,392 | 28,821 | 30,752 | 26,875 | 25,496 | 24,398 | 32,666 | 36,408 | 369,481 |
| | | Block HLH | 43,323 | 34,534 | 34,606 | 37,034 | 43,323 | 54,493 | 63,999 | 55,295 | 36,627 | 31,791 | 33,484 | 39,616 | 508,125 |
| | | Block LLH | 37,257 | 25,901 | 24,913 | 27,063 | 37,257 | 39,822 | 50,461 | 43,598 | 29,302 | 25,066 | 26,871 | 31,236 | 398,747 |
| | **Total BPA Purchases** | | **175,163** | **143,138** | **153,944** | **135,520** | **157,284** | **172,387** | **193,483** | **169,012** | **131,847** | **120,171** | **142,406** | **162,977** | **1,857,333** |
| | Other Power | | | | | | | | | | | | | | |
| | | Frederickson HLH | 20,000 | 19,200 | - | - | - | - | 20,800 | 20,800 | 20,000 | 20,800 | 20,000 | 20,800 | 162,400 |
| | | Frederickson LLH | 17,200 | 14,400 | - | - | - | - | 16,400 | 16,400 | 16,000 | 16,400 | 16,050 | 16,400 | 129,250 |
| | | White Creek Wind HLH | 1,200 | 1,152 | 1,296 | 1,248 | 1,200 | 1,248 | 1,248 | 1,248 | 1,200 | 1,248 | 1,200 | 1,248 | 14,736 |
| | | White Creek Wind LLH | 1,032 | 864 | 933 | 912 | 1,032 | 912 | 984 | 984 | 960 | 984 | 963 | 984 | 11,544 |
| | | Nine Canyon Wind HLH | 1,134 | 1,017 | 1,329 | 1,125 | 1,089 | 1,097 | 1,023 | 987 | 942 | 1,089 | 1,133 | 1,182 | 13,146 |
| | | Nine Canyon Wind LLH | 975 | 763 | 956 | 822 | 936 | 801 | 807 | 778 | 754 | 859 | 909 | 932 | 10,292 |
| | | Packwood HLH | 575 | 473 | 537 | 602 | 970 | 1,076 | 907 | 452 | 551 | 27 | 741 | 664 | 7,574 |
| | | Packwood LLH | 495 | 355 | 386 | 440 | 834 | 787 | 715 | 356 | 441 | 21 | 594 | 524 | 5,947 |
| | | Balancing Market HLH | - | - | 1,336 | 2,071 | 4,889 | 12,078 | - | - | - | - | - | - | 20,375 |
| | | Balancing Market LLH | - | - | 3,026 | - | - | 5,471 | 4,191 | - | - | - | - | - | 12,687 |
| | | Interruptible Purchases HLH | 6,400 | 5,760 | 3,024 | 7,904 | 6,000 | 3,744 | 1,664 | 5,408 | 3,600 | 3,328 | 6,000 | 7,904 | 60,736 |
| | | Interruptible Purchases LLH | 5,504 | 4,320 | 2,177 | 5,776 | 5,160 | 2,736 | 1,312 | 4,264 | 2,880 | 2,624 | 4,815 | 6,232 | 47,800 |
| | | Swaps HLH - Slice | - | - | - | 4,160 | 4,000 | 14,560 | 27,040 | 27,040 | 26,000 | - | - | - | 102,800 |
| | | Swaps LLH - Slice | - | - | - | 3,040 | 3,440 | 3,040 | - | - | - | - | - | - | 9,520 |
| | | Swaps HLH - Thermal | 4,000 | 3,840 | 4,320 | 4,160 | 4,000 | 4,160 | - | - | - | - | - | - | 24,480 |
| | | Swaps LLH - Thermal | - | - | - | 6,080 | 6,880 | 6,080 | - | - | - | - | - | - | 19,040 |
| | | Options HLH (delta volume) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | | Options LLH (delta volume) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | **Total Other Power Purchases** | | **58,514** | **52,144** | **19,320** | **38,340** | **40,430** | **57,790** | **77,089** | **78,717** | **73,328** | **47,379** | **52,405** | **56,870** | **652,327** |
| **TOTAL PURCHASES** | | | **233,678** | **195,282** | **173,265** | **173,860** | **197,714** | **230,177** | **270,572** | **247,729** | **205,175** | **167,550** | **194,811** | **219,847** | **2,509,660** |
| | | | | | | | | | | | | | | | |
| Less | | | | | | | | | | | | | | | |
| | Sales for Resale | | | | | | | | | | | | | | |
| | | Balancing Market HLH | 13,320 | 11,216 | - | - | - | - | 12,232 | 8,101 | 27,790 | 13,938 | 28,721 | 26,422 | 141,740 |
| | | Balancing Market LLH | 14,861 | 9,296 | - | 9,427 | 5,562 | - | - | 5,637 | 11,034 | 17,025 | 21,862 | 18,366 | 113,070 |
| | | Interruptible Sales HLH | 6,400 | 5,760 | 3,024 | 7,904 | 6,000 | 3,744 | 1,664 | 5,408 | 3,600 | 3,328 | 6,000 | 7,904 | 60,736 |
| | | Interruptible Sales LLH | 5,504 | 4,320 | 2,177 | 5,776 | 5,160 | 2,736 | 1,312 | 4,264 | 2,880 | 2,624 | 4,815 | 6,232 | 47,800 |
| | | Swaps HLH - Slice | 8,000 | 7,680 | 8,640 | 10,400 | - | - | - | - | - | - | - | - | 34,720 |
| | | Swaps LLH - Slice | 5,160 | 4,320 | 7,775 | - | - | - | - | - | - | - | - | - | 17,255 |
| | | Swaps HLH - Thermal | 16,000 | 15,360 | 17,280 | 8,320 | 8,000 | 8,320 | 16,640 | 16,640 | 16,000 | 4,160 | 4,000 | 4,160 | 134,880 |
| | | Swaps LLH - Thermal | 10,320 | 8,640 | 9,330 | 6,080 | 6,880 | 6,080 | 9,840 | 9,840 | 9,600 | 3,280 | 3,210 | 3,280 | 86,380 |
| | | Options HLH (delta volume) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | | Options LLH (delta volume) | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | **Total Sales for Resale** | | **79,565** | **66,592** | **48,226** | **47,907** | **31,602** | **20,880** | **41,688** | **49,890** | **70,904** | **44,355** | **68,608** | **66,364** | **636,581** |
| | | | | | | | | | | | | | | | |
| | Losses/Imbalance | | | | | | | | | | | | | | |
| | | Losses HLH | 1,765 | 1,629 | 1,601 | 1,096 | 923 | 1,001 | 1,373 | 1,268 | 1,199 | 1,180 | 1,650 | 1,731 | 16,415 |
| | | Losses LLH | 1,405 | 1,082 | 999 | 790 | 837 | 653 | 943 | 862 | 935 | 902 | 1,166 | 1,172 | 11,746 |
| | **Total Losses** | | **3,170** | **2,712** | **2,599** | **1,886** | **1,759** | **1,654** | **2,316** | **2,130** | **2,134** | **2,081** | **2,816** | **2,903** | **28,160** |
| **TOTAL SALES/LOSSES** | | | **82,735** | **69,304** | **50,825** | **49,793** | **33,361** | **22,534** | **44,004** | **52,020** | **73,039** | **46,436** | **71,423** | **69,267** | **664,741** |
| | | | | | | | | | | | | | | | |
| **NET PURCHASES** | | | **150,943** | **125,979** | **122,439** | **124,067** | **164,353** | **207,643** | **226,568** | **195,709** | **132,136** | **121,114** | **123,388** | **150,580** | **1,844,918** |
| | | | | | | | | | | | | | | | |
| WA $/MWh Secondary Sales | | | January | February | March | April | May | June | July | August | September | October | November | December | Total |
| | ATC | | $ 36.92 | $ 35.13 | $ 43.72 | $ 19.97 | $ 17.14 | $ 22.36 | $ 46.65 | $ 42.88 | $ 40.01 | $ 32.61 | $ 32.60 | $ 38.78 | $ 35.39 |

TABLE 20: 2021 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: 2021-2025

| Percentile | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|
| **5%** | $87,784,752 | $89,918,294 | $90,754,119 | $93,148,847 | $94,054,128 |
| **10%** | $85,752,609 | $88,507,870 | $88,422,709 | $91,017,329 | $91,878,272 |
| **15%** | $84,798,204 | $87,282,165 | $87,420,185 | $90,054,449 | $90,799,412 |
| **20%** | $83,844,714 | $86,563,753 | $86,568,633 | $88,939,394 | $89,996,991 |
| **25%** | $83,303,201 | $85,804,385 | $85,822,789 | $88,075,581 | $89,132,208 |
| **30%** | $82,685,777 | $85,197,580 | $85,198,791 | $87,358,668 | $88,481,350 |
| **35%** | $82,137,294 | $84,658,360 | $84,651,231 | $86,842,284 | $87,886,207 |
| **40%** | $81,679,999 | $84,322,863 | $83,969,706 | $86,246,837 | $87,324,146 |
| **45%** | $81,231,610 | $84,005,811 | $83,475,172 | $85,652,938 | $86,787,093 |
| **50%** | $80,664,440 | $83,572,304 | $83,021,043 | $84,941,400 | $86,296,153 |
| **55%** | $80,214,972 | $83,164,622 | $82,622,311 | $84,444,965 | $85,778,977 |
| **60%** | $79,768,553 | $82,752,228 | $82,217,513 | $84,012,224 | $85,292,309 |
| **65%** | $79,223,138 | $82,377,621 | $81,761,601 | $83,616,101 | $84,790,519 |
| **70%** | $78,698,581 | $81,907,229 | $81,273,369 | $83,201,326 | $84,360,200 |
| **75%** | $78,181,880 | $81,336,041 | $80,887,732 | $82,774,334 | $83,810,099 |
| **80%** | $77,547,530 | $80,729,712 | $80,336,644 | $82,305,500 | $83,284,414 |
| **85%** | $76,959,106 | $80,034,964 | $79,720,676 | $81,674,836 | $82,599,478 |
| **90%** | $75,938,888 | $79,352,616 | $79,003,802 | $81,019,722 | $81,856,710 |
| **95%** | $74,651,307 | $77,746,225 | $78,059,159 | $79,812,664 | $80,731,814 |

TABLE 21: ANNUAL NET POWER COST PERCENTILES

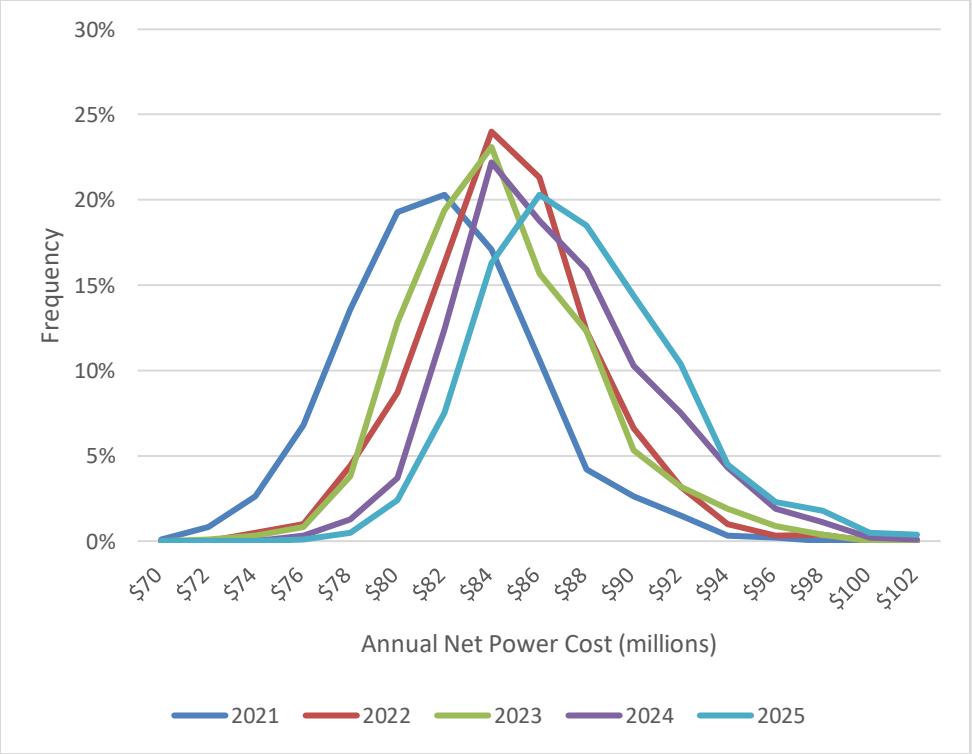


FIGURE 18: NET POWER COST DISTRIBUTION

## 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.

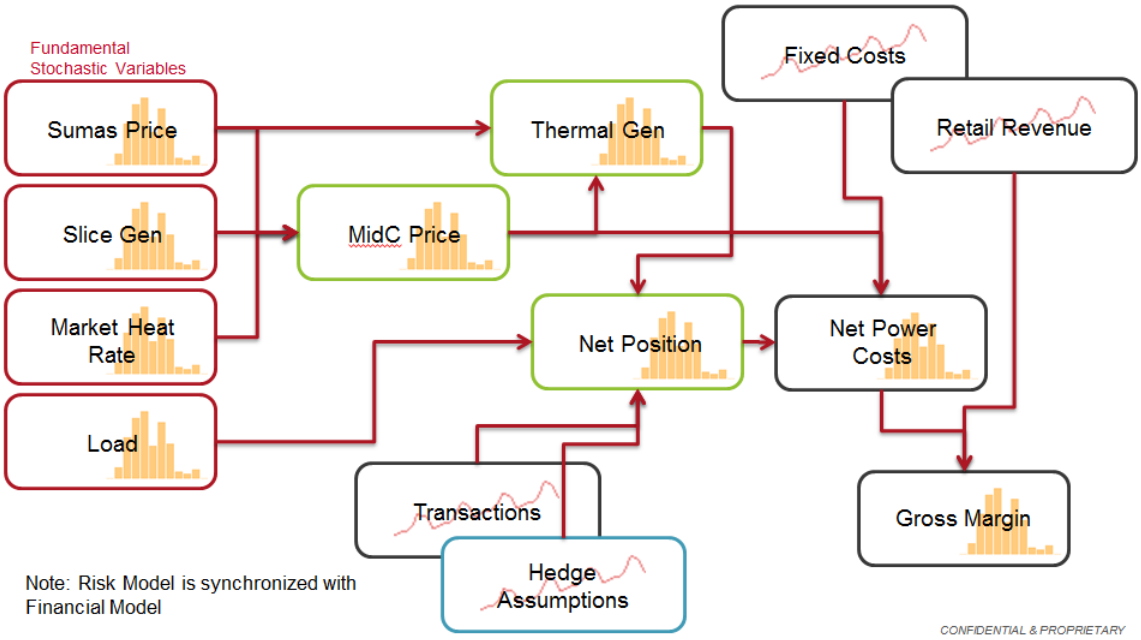


FIGURE 19: RISK MODEL COMPONENTS FLOW-CHART

## 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 10$^{th}$ and 90$^{th}$ percentile (i.e., 90% and 10% likelihood of greater loads) HLH load outputs relative to the HLH load forecast used to develop the 2021 budget. **Figure 21** shows the 10$^{th}$ and 90$^{th}$ percentile LLH load outputs relative to the LLH load forecast used to develop the 2021 budget.

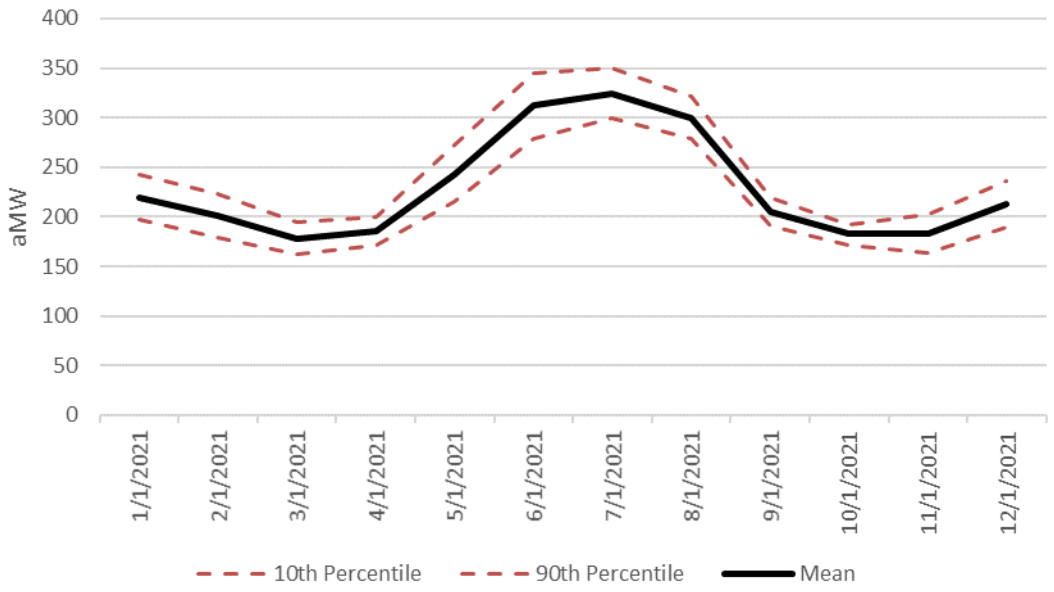


FIGURE 20: STOCHASTIC MODEL OUTPUT: 2021 HLH LOADS

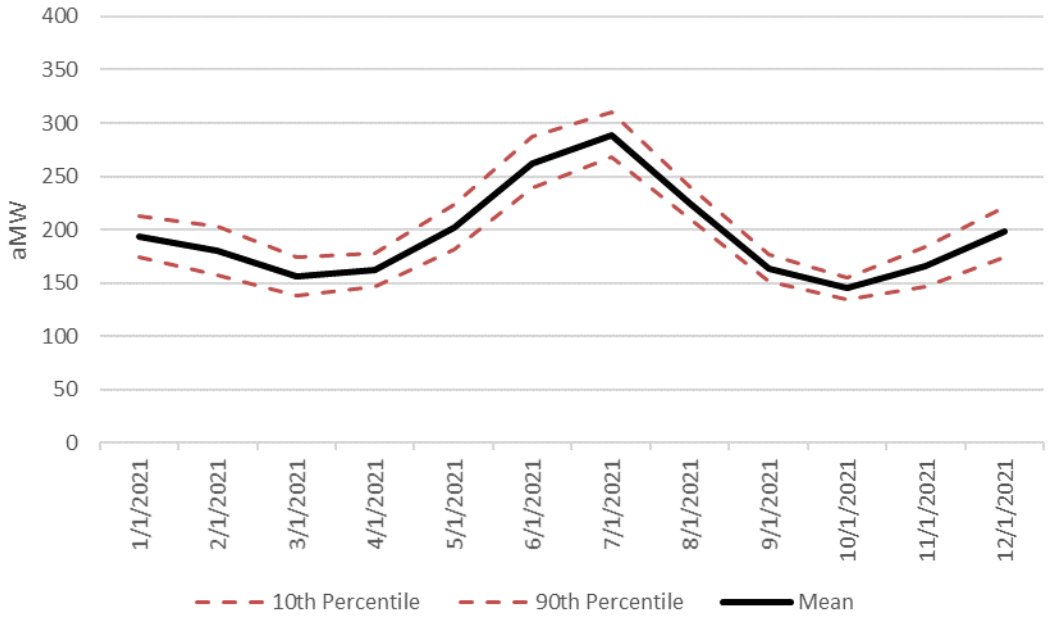


FIGURE 21: STOCHASTIC MODEL OUTPUT: 2021 LLH LOADS

## 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 70 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.

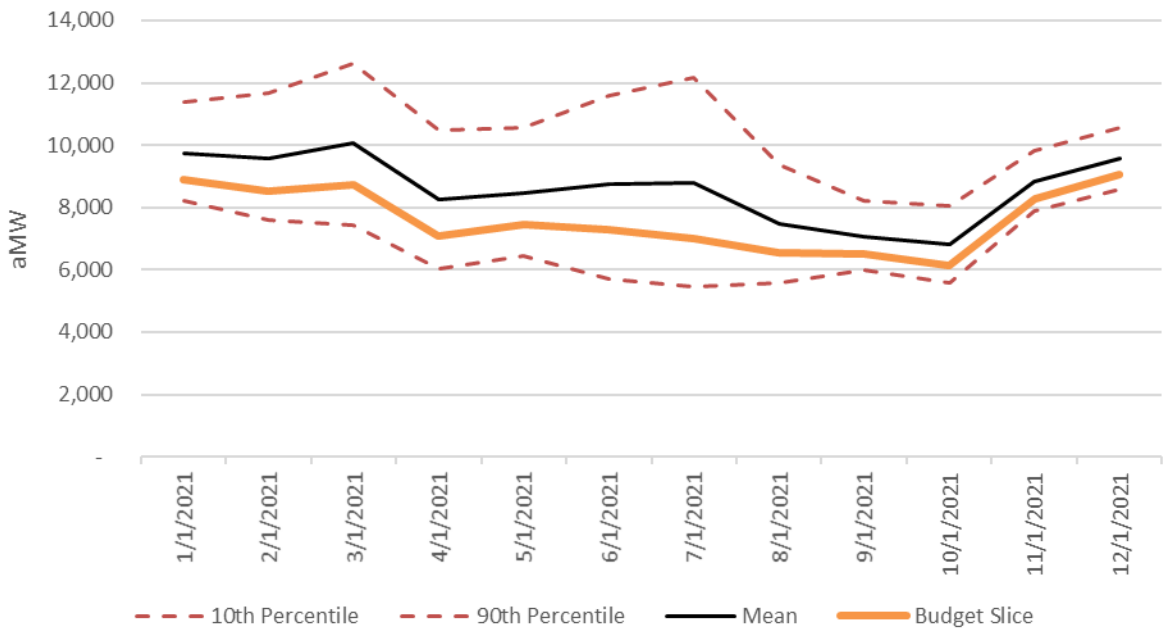


FIGURE 22: STOCHASTIC MODEL OUTPUT: 2021 SLICE GENERATION

## 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 2021 budget.

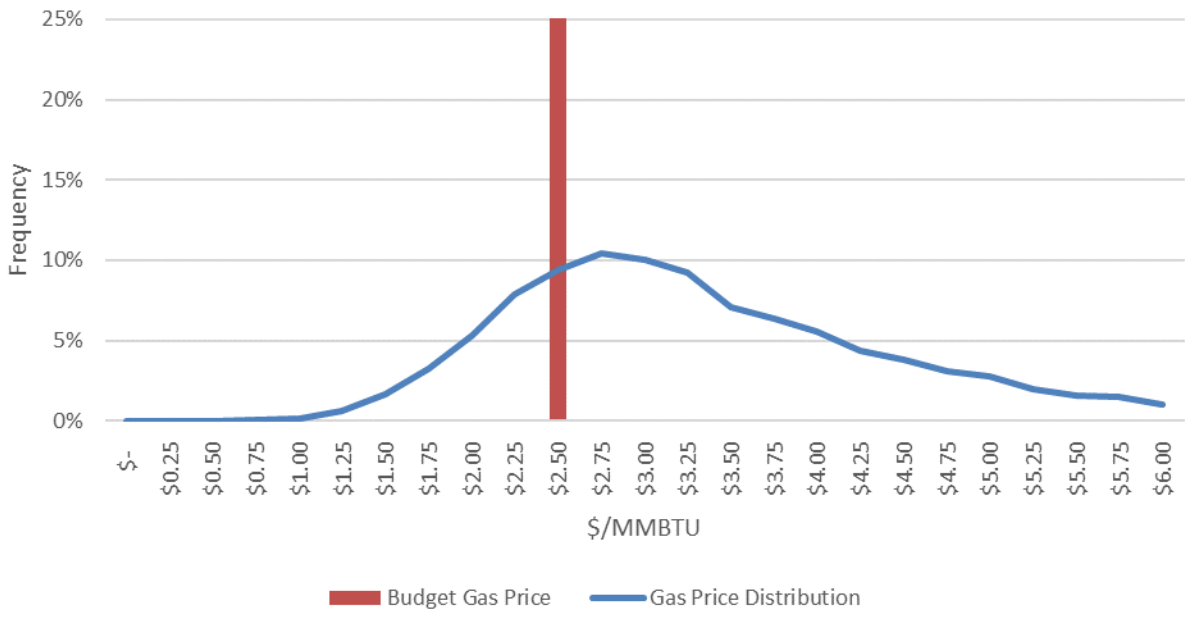


FIGURE 23: STOCHASTIC MODEL OUTPUT: 2021 GAS PRICE DISTRIBUTION

## 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 2021 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.

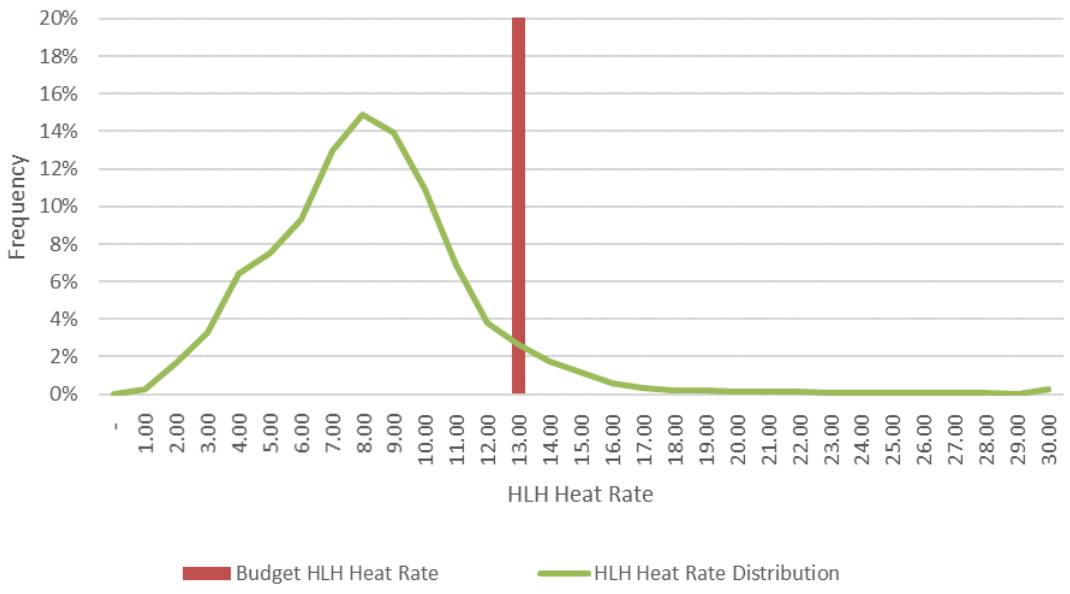


FIGURE 24: STOCHASTIC MODEL OUTPUT: 2021 HLH HEAT RATE DISTRIBUTION

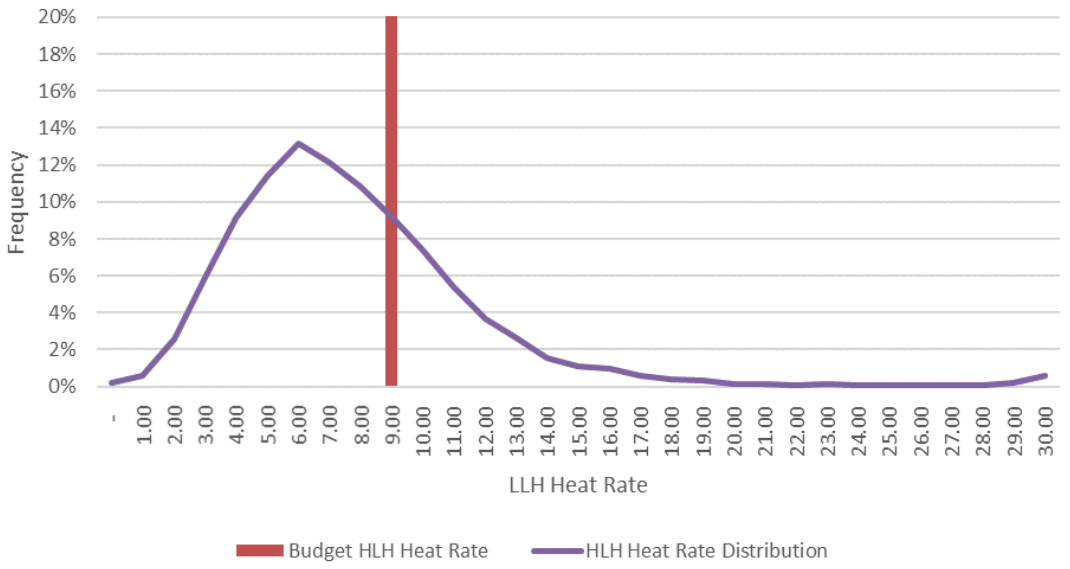


FIGURE 25: STOCHASTIC MODEL OUTPUT: 2021 LLH HEAT RATE DISTRIBUTION

## 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 2021 HLH and LLH budget price assumptions.

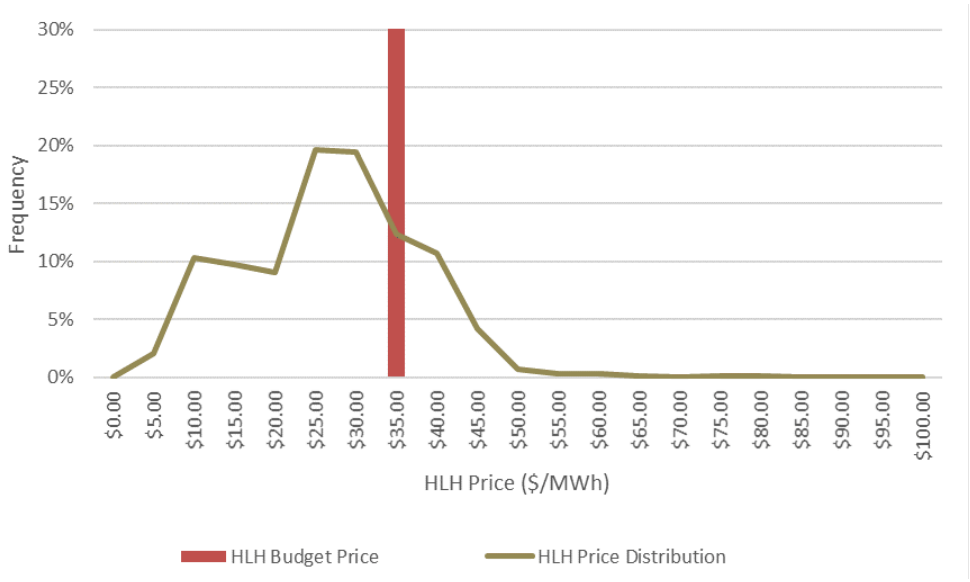


FIGURE 26: STOCHASTIC MODEL OUTPUT: 2021 HLH POWER PRICE DISTRIBUTION

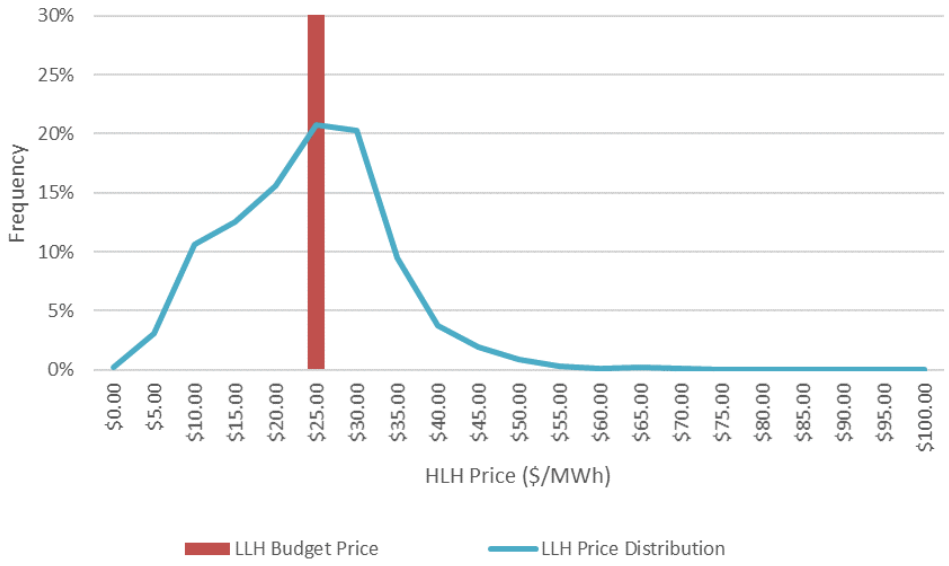


FIGURE 27: STOCHASTIC MODEL OUTPUT: 2021 LLH POWER PRICE DISTRIBUTION