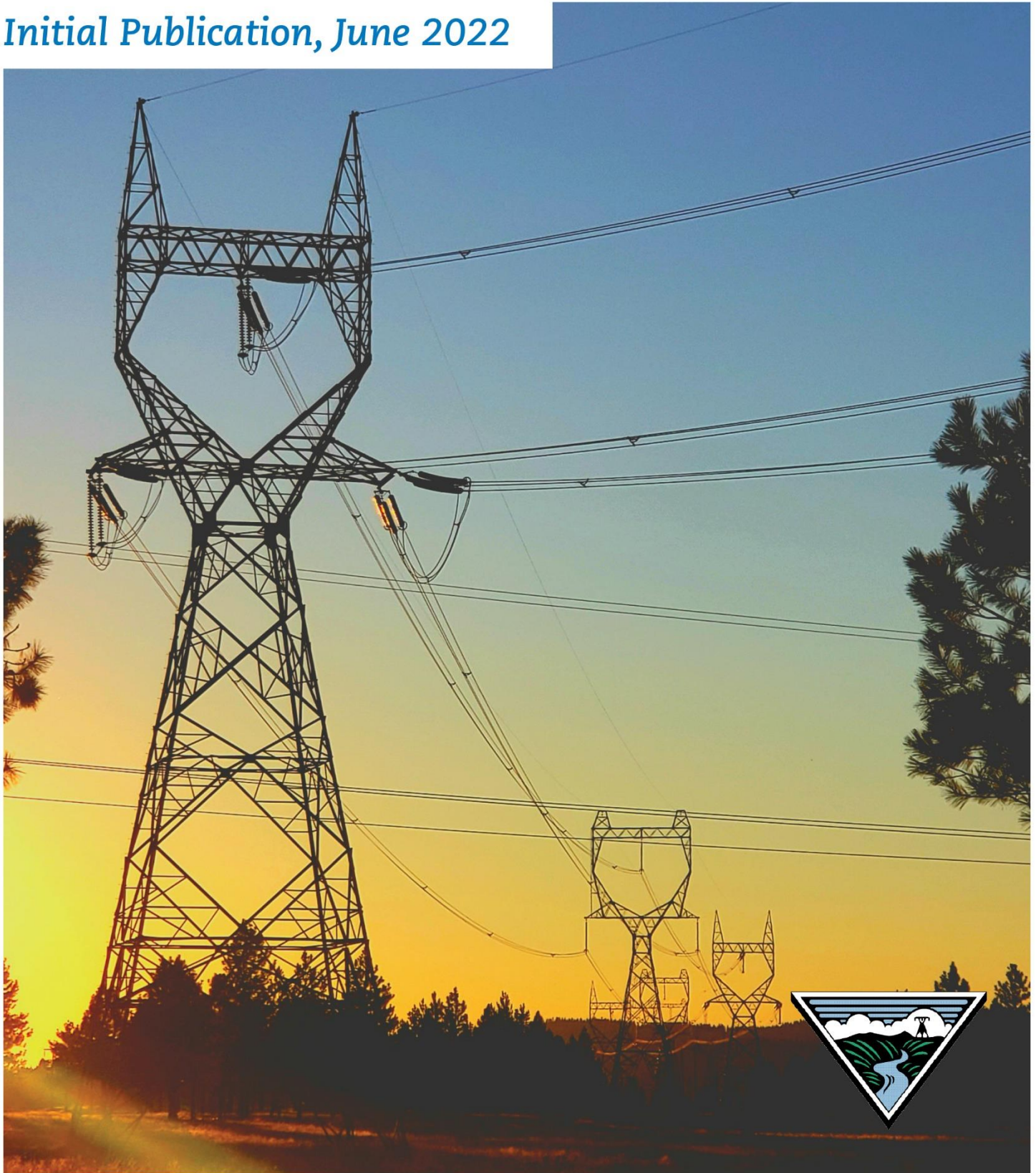


Integrated Program Review

Initial Publication, June 2022



The information in this document was made publicly available on June 9, 2022, and contains information sourced directly and not directly from BPA financial statements.

Letter from the administrator

The Bonneville Power Administration (BPA) invites you to participate in the BP-24 Integrated Program Review (IPR). Your input will help inform our decisions to set projected capital and expense costs for the next rate period, covering fiscal years 2024 and 2025.

We have made tremendous progress towards the financial objectives since implementing BPA's strategic and financial plans in 2018. Key among those objectives has been to hold the sum of program costs, by business line, at or below the rate of inflation through 2028.

Since BP-18 and through this upcoming BP-24 rate period, we have managed IPR costs below the inflationary cost management target by a cumulative total of \$372 million. This directly supported our ability to maintain competitive power and transmission rates while also delivering on our statutory obligations, which became increasingly important during the uncertainty of the pandemic. In achieving this objective, we made a number of difficult tradeoffs.

To minimize costs over the last several years, we intentionally limited discretionary investments in certain areas of the region's federal power and transmission systems, deferred information technology (IT) upgrades, and tightly managed staffing levels to minimize costs. Meanwhile, the demands in these areas have grown, and the threat of high-impact disruptive system events has increased. We are also seeing significant inflation and supply chain constraints.

BPA remains committed to meeting its statutory obligations while efficiently managing its costs, and I believe that is evident in our IPR cost forecasts. However, cost-management alone will not enable us to achieve all of our longer term strategic goals, from modernizing the grid to strategically managing the region's federal assets. Strategic investments will deliver tremendous returns, benefiting our stakeholders and partners through increasing secondary revenue opportunities that help keep rates low and support financial strength; enhancing reliability; protecting, mitigating, and enhancing fish and wildlife; and providing greater resilience in recovering from extreme weather events.

We also recognize that a healthy organizational culture and a capable, high-performing workforce is foundational to BPA's success. I established the Chief Workforce and Strategy Office in 2021 in recognition that we need to further invest in BPA's people and culture, including our ability to recruit and retain the highly-skilled, talented staff who are essential to the delivery of our public service mission and strategic goals.

The projected expense and capital costs outlined in this document support our ability to deliver on our statutory mission, advance our strategic priorities, and remain the provider of choice for our customers. For both Power Services and Transmission Services, we have worked hard to minimize the impacts of growing cost pressures and continue to strive towards our goal of maintaining competitive rates.

Through this cost-discipline, forecast cost increases for Power Services are \$98.5 million above BP-22, which is \$15 million below the inflationary target. The primary drivers for the cost increase are adequately funding our generating partners; needed investments in core IT systems and cybersecurity; supporting staffing levels in key areas; establishing the new Chief Workforce and Strategy Office; and meeting Fish and Wildlife program obligations.

Transmission Services is facing greater cost pressures and is projecting costs above BP-22 by \$80 million. That is \$34.7 million above the inflationary goal. Most of the \$34.7 million increase will support critical investments for wildfire mitigation, cybersecurity and IT systems, as well as rising hourly labor costs.

We developed capital forecasts using strategic asset management plans for each asset category. These plans serve as roadmaps for managing the health, performance, costs and risks to maximize each assets' life-cycle value. We have also taken into consideration the significant uncertainty in material availability and supply chain factors that could affect our ability to meet the capital program execution targets. The change in capital from the BP-22 rate period is an average annual increase of \$9.7 million for Power and an average annual increase of \$44.7 million for Transmission. At these levels, we will maintain reliability, minimize life-cycle costs, and support customer driven interconnection requests.

I hope you will join us for the virtual IPR kickoff on June 14, when we will begin a public dialogue around these capital and expense forecasts, and the trade-offs and risks we are balancing as we execute our strategies. This meeting will initiate a 30-day public comment period on our forecast costs.

Thank you for your engagement and support in sustaining BPA's role as the region's trusted supplier of reliable, cost-based power and transmission services, and in meeting the evolving needs of our customers in a rapidly changing industry.

Sincerely,

A handwritten signature in black ink, appearing to read "John Hairston". The signature is fluid and cursive, with a prominent initial "J" and a long, sweeping underline.

John Hairston
BPA Administrator and CEO

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1 Introduction

BPA conducts the Integrated Program Review (IPR) every two years, before each rate case, to provide an opportunity for interested parties to review and comment on the projected estimates of program expenses and capital cost forecasts.

These cost estimates are just one component of assumptions and factors that will be used to develop the power and transmission rates for fiscal years (FY) 2024 and 2025. All other costs considered in the rate-setting process are out of the scope of the IPR and are shown in Figure 1 below.

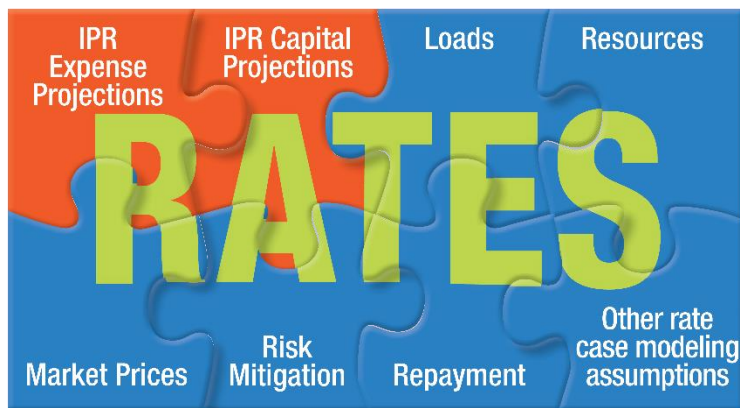


Figure 1: The Rate-Setting Process

Because both expense and capital forecasts are included in power and transmission rates, BPA’s first priority is to ensure its cost estimates are sufficient and reasonable to cover, on a forecast basis, BPA’s operations two years into the future, as well as BPA’s mission objectives and statutory obligations. Although the IPR provides a reasonable forecast of costs, as stated in Section 7, BPA retains the ability to refine and adjust costs during the actual year of operations as needed. This allows for the most efficient use of resources to meet mission objectives and the ability to adjust estimates if some costs are higher or lower than anticipated in the IPR.

1.1 Initial IPR

BPA’s expense and capital forecasts are guided by the Financial Plan objective to hold the sum of program costs, by business line, at or below the rate of inflation through 2028; and the capital objective to maximize the life-cycle value of assets based on industry-leading standards, including the use of Strategic Asset Management Plans (SAMPs) to guide rate period and longer-term capital forecasts. These objectives provide direction for managing the operating and capital costs of the business over time to maintain competitive power and transmission rates.

1.2 Expense

BPA adopted its Financial Plan in 2018. In BP-20, BPA reduced IPR costs by \$66 million per year compared to the BP-18 rate period. In BP-22, BPA held Power Services' projected IPR expenses flat while Transmission Services' business line projected expenses increased at the forecast inflation rate.

To meet its objective of holding FY 2020 through FY 2023 IPR costs nearly flat, BPA prioritized mission-critical projects while meeting its statutory and contractual obligations. Our projected costs reflect a rigorous cost-discipline to reduce the cost of certain existing activities and do not include certain new or additional activities. This level of discipline minimized the forecast cost impact of programs that have had increased demands, such as market expansion, wildfire mitigation, cybersecurity, core IT systems, and generally BPA's labor force. Given the increased need in these and other areas, such as the Fish and Wildlife program, BPA is prioritizing these and other programs in 2024 and 2025. In addition, BPA's top-down cost-management goals provided an important benchmark for BPA to carefully look at all of its major program areas.

The BP-24 forecast of program costs for the Power business line grew by 3.7% per year, slightly below the inflation target of 4.4%. The forecast of program costs for the Transmission business line is above the inflation target of 4.4%, increasing by 7.5% per year. Table 1 shows dollar amounts.

Table 1: IPR Expense Summary

(\$millions)	Average BP-22 Rate Case	Average BP-24 Initial IPR	IPR vs Rate Case Over (Under)
Power IPR Expense	1,304	1,403	99
Transmission IPR Expense	515	595	80
Total	1,819	1,998	179

For the Power business line, costs are projected to increase by \$98.5 million over BP-22, which is \$15 million below the inflationary goal target for BP-24. Projected cost increases are driven by investments in core IT systems, the Chief Workforce and Strategy Office, the Fish and Wildlife program, the labor-related cost of BPA's current workforce, including some additions in personnel in key functions, and support for generating partners.

For the Transmission business line, costs are projected to increase by \$80 million over BP-22, which is \$34.7 million above the BP-24 inflationary goal. Projected cost increases include investments in core IT systems, the labor-related cost of BPA's current workforce, wildfire mitigation, cybersecurity, Grand Coulee Dam substation assets, and support for BPA's current workforce. These items will be discussed in more detail in the sections to follow.

1.3 Capital

BPA developed capital investment forecasts for the BP-24 rate period through the SAMPs for eight asset categories (federal hydro, transmission, IT, fleet, facilities, security, environment, and fish and wildlife). The SAMPs undergo significant planning and prioritization in alignment with ISO 55000 standards, which are internationally recognized standards for life-cycle asset management. For its largest asset categories,

federal hydro and transmission, BPA has spent several years refining its planning and prioritization processes to work toward overcoming several challenges, including aging infrastructure and resource constraints to execute the planned amount of capital work. These SAMPs provide roadmaps for managing the health, performance, costs and risks of the assets owned or leased by BPA to maximize the life-cycle value.

The IPR projected capital costs are a result of the SAMPs developed for each asset category, and balance the priorities of BPA’s mission and financial plan objectives. The projected capital will allow BPA to continue to operate a reliable system while mitigating many strategic challenges. Due to projected challenges in meeting execution targets, including industry-wide uncertainty in critical areas of resources, material availability, and supply chain factors that may affect capital cost projections, the included IPR capital cost projections for the federal hydro and transmission asset categories have been reduced 10% from the SAMPs. For planning and target-setting purposes, federal hydro and transmission will use a range in which the SAMP capital cost projections will make up the high threshold of the range; a 10% reduction from the high to be used for IPR and rate-setting purposes as the midpoint; and a 20% reduction from the high to provide a lower threshold of the goal’s range, setting the minimally acceptable execution level. Detailed capital cost projections included in tables throughout this initial IPR document are the midpoint numbers for federal hydro and transmission asset categories that include the 10% reduction from the planned capital cost in their respective SAMPs. The other six smaller asset categories’ planned cost projections have not been adjusted from the SAMP cost projections.

For this initial IPR, the projected capital costs are shown in Table 2 for Power and Transmission services. The change in projected capital from the BP-22 rate period is an average annual increase of \$9.7 million for Power and an average annual increase of \$44.7 million for Transmission. This table includes capital costs for all BPA asset categories as well as Columbia Generating Station.

Table 2: IPR Capital Summary

<i>(\$millions)</i>	Average BP-22 Rate Case	Average BP-24 Initial IPR	IPR vs Rate Case Over (Under)
Power IPR Capital	445	464	19
Transmission IPR Capital	569	658	89
Total	1,013	1,122	109

2 Development of Cost Estimates

As stated above, development of the projected expense and capital cost forecasts are aligned to support BPA’s mission objectives, strategic direction and statutory obligations.

2.1 Development of Expense Estimates

2.1.1 Expense Program Priorities for FY 2024 and FY 2025

When BPA started planning this IPR process, it set organizational priorities to guide top-down cost targets and program expense estimates that enable BPA to assure its mission deliverables while meeting other priorities. BPA's cost priorities for the BP-24 IPR are:

- Investing in BPA's workforce
- Supporting the generating partners
- IT, including cybersecurity
- Environmental stewardship, including investments in the Fish and Wildlife program
- Wildfire mitigation
- Grand Coulee Dam substation assets

Investing in BPA's workforce: BPA is elevating its focus on strategic execution, organizational culture and work environment to ensure it is effectively planning and executing its strategies; retaining and attracting highly skilled employees; providing a work environment that drives employee satisfaction and productivity; and advancing efforts to become a more diverse and inclusive organization. All of these are essential to BPA's ability to perform its public service mission, meet its responsibilities and provide excellent customer service.

Supporting the generating partners: BPA works collaboratively with the U.S. Army Corps of Engineers (USACE), U.S. Bureau of Reclamation (Reclamation), and Energy Northwest to safely administer a sustainable asset management program that focuses on delivering low-cost, reliable power and supporting the multipurpose missions of each entity. Our generating partners have held their budgets flat for two IPR cycles, in part with reduced staffing. The proposed budget for BP-24 includes increases over BP-22 to support rising labor costs while still implementing efficiencies, ensuring safety and preserving the long-term reliability of the Federal Columbia River Power System (FCRPS) System.

IT, including cybersecurity: From BP-18 to BP-20, BPA's IT program reduced costs significantly and, as a result, reduced service levels in many key areas that adversely affected the performance of critical IT systems. BPA increased IT projected costs in BP-22, bringing the program back to past levels of critical infrastructure support. For BP-24, IT is a priority, with projected cost increases due to key areas like licensing fees, cybersecurity and new technologies, such as systems supporting the western Energy Imbalance Market (EIM), for increased business capabilities.

Cybersecurity is a critical component to protecting BPA's core mission of safely and reliably delivering power to its customers and the Northwest. It is imperative that BPA continues to implement a robust set of cybersecurity practices to protect the Northwest federal power system from constantly evolving cyber threats. This includes operating a 24/7 cybersecurity and analysis center that proactively identifies and mitigates vulnerabilities, and maintains plans to quickly and safely recover and restore functionality and systems.

Environmental stewardship, including investments in the Fish and Wildlife Program: BPA is projecting an 8.7% increase in fish and wildlife costs for BP-24. This is the largest percentage increase in projected Fish and Wildlife program costs since BP-10. The estimated cost increase stems from inflationary pressure on the cost of materials, equipment and staffing across the Fish and Wildlife program, new fish and wildlife

obligations, and necessary investments in existing mitigation assets. In BP-24, BPA will continue to work collaboratively with the Northwest Power and Conservation Council, states, Tribes and other partners to identify opportunities to prioritize and implement projects that directly benefit fish and wildlife in a cost-effective manner.

Wildfire mitigation: BPA's service territory continues to experience increased fire danger that can damage the operation of the transmission system. As this risk grows each year, BPA finds itself in a position where critical support is needed to mitigate growing fire risk. For this IPR, BPA is prioritizing modeling and analysis of wildfire risk to inform mitigation plans and future activities as well as investing in system reinforcements in the highest risk areas. As a result of the prioritization, BPA is forecasting a cost increase in programs that support wildfire mitigation.

Grand Coulee Dam substation assets: The Grand Coulee Switchyards are critical to the integration of the Grand Coulee Dam, the largest hydro facility in the U.S., to the Federal Transmission System. There is a significant need for capital and expense investment at the Grand Coulee switchyards due to aging or unreliable equipment.

2.1.2 Inflation Methodology

Forecast inflation rates are an important input to calculating IPR costs and allow BPA to align the economic consensus of expected inflation to BPA's financial plan IPR goal to be at or below the rate of inflation, by business line. In recent years, BPA's IPR inflation forecasts have lagged actual inflation. Inflationary pressure has increased significantly over the past several years, driven first by COVID-19 demand-related contraction, followed by supply chain disruptions and very low unemployment.

Prior to BPA executives establishing cost targets by business line, BPA analyzed inflationary drivers within its cost categories and benchmarked to industry practice. From this, BPA advanced its inflation methodology from solely using the gross domestic product implicit price deflator (GDP price deflator) for all costs, as was done in the last two IPRs, to using a cost pools approach, which separates costs between the major inflationary drivers. In addition, BPA benchmarked the utility industry and found separating costs into cost pools was the common approach. The cost pools BPA utilized are labor and non-labor. The labor cost pool included the forecast costs of federal salaried employees, federal hourly employees, BPA's contract workforce, as well as the generating partner cost pools and service contracts. The non-labor cost pool included materials, supplies and other costs such as travel and training. For the labor cost pool, BPA applied the Employee Cost Index (ECI), which is a national measure of inflation on wages and employee paid benefits. For the non-labor cost pool, BPA continues to use the GDP price deflator. For the BP-24 IPR period, the two-year average GDP price deflator rate is 2.48% and the ECI two-year average is 4.44%. Once applied to the different cost pools, the BP-24 average inflation rate is 4.39%.

2.2 Development of Capital Estimates

The FCRPS portfolio of assets provides power and transmission products and services to Idaho, Oregon, Washington, western Montana and small parts of eastern Montana, California, Nevada, Utah and Wyoming. It includes 31 federal hydroelectric plants with more than 200 generating units, 15,000 circuit-miles of high-voltage transmission lines, over 260 substations, and the facilities, fleet, telecommunications network, security and IT assets to support them.

In addition, BPA funds its capital for the operation and maintenance (O&M) of the Columbia Generating Station, a 1,207-MW nuclear generation plant; and funds Environment and Fish and Wildlife capital for fish hatchery construction, certain large-scale habitat access improvement or restoration, certain conservation land acquisitions, and pollution, prevention and abatement.

In all, BPA provides nearly a third of the power generated in the Northwest and about 75% of the high-voltage transmission. A robust asset management strategy and plan for deployment of capital is essential. BPA's assets vary in age, condition, type and geographic location. BPA makes investment decisions that are prioritized based on asset criticality to maintain reliability and support other mission, strategic and financial objectives. BPA considers these key factors and others in determining which capital projects it expects to execute over the FY 2024 and FY 2025 rate period.

2.2.1 General Capital Investment Projection and Asset Management

One of BPA's financial objectives is to administer an industry-leading asset management program, which is essential to sustaining BPA's long-term financial strength.

To support this goal, BPA has adopted asset management practices that guide cost projection development and decisions across the agency. Central to this goal, BPA is more closely aligning BPA's asset management processes with ISO 55000 Asset Management, which is an internationally recognized standard for life-cycle asset management.

BPA has provided substantial ISO 55000 asset management training to more than 100 employees and certified a large majority of them over the past several years, re-designed components of BPA's capital decision process, and significantly improved its capability to analyze individual capital projects and portfolios of capital work, all with an aim to better align to industry leading standards. Alignment across BPA allows for life-cycle economic and risk-informed asset decisions across all of the agency's asset categories: federal hydro, transmission, facilities, fleet, security, information technology, environment, and fish and wildlife.

While each of these asset categories is at a different level of maturity in adopting the ISO 55000 standards, BPA is committed to this continuous improvement process to make the best capital allocation decisions in support of BPA's mission objectives. The key building blocks necessary to achieve that alignment are development of longer-term SAMPs that guide prioritization of spending for the portfolio of assets, and short-term, tactical, asset plans that detail specific investments to be made each fiscal year in alignment with the long-term SAMPs. BPA's SAMPs guide our capital investments by:

- Enabling understanding of our assets' criticality, health and risks (CHR).
- Establishing risk-based asset performance objectives, such as lost generation and reliability, using leading analytical methods to prioritize capital investments to achieve the highest-risk informed benefit.

2.3 Strategic Challenges

BPA's mission, strategic direction, and financial plan provide the objectives and the parameters within which the asset management program functions. With our aging infrastructure, the asset management program must balance objectives and constraints to maximize the long-term operational and economic

value of power and transmission system assets. This is accomplished by maintaining and investing in the system so that:

- Existing assets operate efficiently and effectively and provide the capacity and capabilities needed to meet reliability, availability, environmental, health and safety, security and other standards.
- New investments are risk-informed and consider the entire asset portfolio. Analysis should include the total life-cycle cost of that investment with current information on the criticality, health and risk (CHR) of the proposed investment in context of the whole asset category portfolio.

All this must be accomplished while navigating a number of strategic challenges described below.

Managing the Risks of Aging Infrastructure

To manage the risk of aging infrastructure, BPA has adopted a standardized, systematic asset management program, which focuses on criticality, health and risk of its assets, as opposed to asset age.

Our strategic challenge is to develop and implement the programs and processes needed, consistent with BPA's mission and statutory and contractual obligations, while striving to achieve our strategic direction and financial plan goals. BPA is making progress every year to:

- Continue to analyze and mature our risk portfolio by asset category.
- Enhance our ability to make risk-informed decisions for prioritizing capital projects.
- Change our maintenance practices to focus on assets based on criticality, health and risk.
- Optimize asset value and manage asset life-cycle costs.
- Reinforce the foundation to strategically plan for the future.

Managing Technological Change

BPA's assets need to be compatible with emerging markets and advanced technologies. For some classes of equipment, such as telecommunications and control systems equipment, technological obsolescence remains a major risk in meeting operational demands, maintaining long-term system reliability and managing costs. Technological advances are instrumental to the success of many industry-wide initiatives occurring in the Pacific Northwest and throughout the West, such as integrating variable energy resources, and enhancing the reliability, security and efficiency of system operations. Nearly every facet of technological change in the generation and transmission of power now includes some form of IT. These capabilities must be considered in the overall IT enterprise architecture with a specific emphasis on availability, reliability and cybersecurity.

Managing Environmental Factors

Understanding of climate science, seismic behavior and risks to the bulk electric system continue to evolve, particularly in the Pacific Northwest for extreme weather events such as heavy winter storms, seasonal wildfires and a Cascadia Subduction Zone earthquake. BPA must invest to strengthen, replace or enhance transmission, federal hydro, and supporting facilities' infrastructure to provide resilience and safety when extreme events occur. BPA's ability to be resilient through these types of events depends on ensuring the continued operation of the IT infrastructure that underlies all power generation and transmission activities.

Managing Increasing Demands on the Power and Transmission System

In recent years, demands on the transmission and power system to integrate variable energy resources and data centers has been significant and has led to new transmission and federal hydro system infrastructure to provide the balancing reserves for renewable energy while maintaining operations for fish passage.

Meet Evolving Compliance Requirements

The Energy Policy Act of 2005 subjects BPA and most electric utilities to a wide range of North American Electric Reliability Corporation reliability standards enforced by the Western Electricity Coordinating Council. The challenge that BPA and similar entities face is the amount and rate of change in reliability standards since their inception. A larger share of BPA's investment in transmission is now being driven by reliability and other regulatory requirements.

Growth in security and continuity of operations requirements to protect critical infrastructure has been rapid. BPA's information technology systems must conform to evolving federal and industry-mandated laws and regulations.

3 Power Services

Power Services is responsible for marketing federal power and, in particular, firm power sold under the long-term Regional Dialogue power sales contracts. Power's costs include the cost of federal and nonfederal power, fish and wildlife mitigation, and energy efficiency. BPA is the designated marketer of power produced by the FCRPS. In addition, BPA has acquired and markets power produced by several nonfederal resources, including the Columbia Generating Station nuclear plant, and small hydro and wind projects. In combination with the FCRPS, this portfolio of resources is known as the Federal Base System.

Power Services is focused on improving its cost-competitiveness while maintaining the reliability and flexibility of its carbon-free generating resources, modernizing its operations and delivering other regional benefits. The sustained economic impacts of the COVID-19 pandemic further drive BPA's desire to actively manage the cost of its wholesale products to support our customers and the communities they serve.

In line with these considerations, Power Services is continuing to ramp up the federal hydro capital program to reach \$300 million annually to continue essential investments in long-term generation reliability and increased capacity. The Power Service expense projection is a 3.7% annual inflationary increase for BP-24 IPR. The increases address inflationary pressures, high priority non-routine maintenance, and backlog activities, and support efforts to maintain equipment condition for continued reliability. IPR cost projections were reduced in BP-20, and then held flat in BP-22. Power expects to address cost pressures and manage risks for each of its major program areas, which are highlighted below.

Reclamation and USACE Operations and Maintenance (O&M): Both Reclamation and the USACE are demonstrating their commitment to cost-management while continuing to provide safe, reliable operations with modest increases in projected costs from BP-22 of 2% for the rate period for Reclamation and 4.7% for the USACE. The program has absorbed roughly \$25 million in inflation annually. The projected increase will apply mainly to increasing personnel costs. The ability to hold costs low continues to be achieved through reprioritization or deferral of planned and non-routine maintenance. While every effort is made to maintain reliability at our key generating facilities, deferring maintenance potentially risks incurring larger repair costs in future rate periods.

Columbia Generating Station O&M: BPA is projecting an increase in O&M expenses for the Columbia Generating Station of 11.8% compared to the BP-22 rate case. This results in a 5.77% annual increase over the two-year rate period. The increased projected costs are to cover actual increases in labor and material costs, and are essential to maintain reliability and efficiency of the station.

Energy Efficiency: BPA expects its Energy Efficiency Program's costs of conservation acquisitions to rise as the most cost-effective opportunities are exhausted. Energy Efficiency Program costs reflect a 2.4% increase for the rate period to help offset rising cost of conservation acquisitions and meet energy savings called for in BPA's Resource Program and the Northwest Power and Conservation Council's Power Plan.

Fish and Wildlife: BPA is projecting an increase in Fish and Wildlife program costs of approximately 9% for the rate period. These projected costs are expected to allow BPA to be able to continue to meet legal compliance obligations under applicable laws, the Columbia River System Operations Environmental Impact Statement Record of Decision and associated Endangered Species Act consultations, and other biological opinions and agreements. In BP-24, BPA will continue to work collaboratively with the Council,

states, Tribes and other partners to identify opportunities to prioritize and implement projects that directly benefit fish and wildlife in a cost-effective manner. This collaboration will continue in areas of mutual focus, such as asset management to maintain the effectiveness of past mitigation efforts.

Enterprise Services: As described in more detail in Section 5, BPA is projecting a 24% increase in Enterprise Services costs for the rate period. The projected increase for Enterprise Services is largely driven increases in core Information Technology systems, including additional investments in cyber security and to fund current staffing levels across corporate organizations, including some additions in key functional areas. Also contributing to the increase is setup of the Chief Workforce and Strategy Office.

Other IPR Costs: Projected costs for the other programs in Power Services collectively are slightly higher than those set in the BP-22 rate case, including expenditures for Renewables, Non-Generation Operations (Power Internal Support), and Post-Retirement Benefits. These projections reflect reprioritization of workload while continuing to manage expenditures in all categories, including federal staffing, service contracts and supplemental labor.

Figure 2 shows each program category within Power Services and its percent of total average projected costs. Table 3 lists detailed costs within each category.



Figure 2: Power Services Expense Summary by Program

Table 3: Power Services Summary, IPR costs

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Columbia Generating Station	260,962	311,753	278,643	304,748	299,246	355,133	291,695	327,189
Corps Of Engineers	240,298	236,477	252,557	252,557	259,391	269,392	252,557	264,392
Fish & Wildlife	226,236	241,109	247,508	247,196	269,235	268,865	247,352	269,050
Bureau Of Reclamation	152,612	150,170	152,269	152,963	154,364	157,218	152,616	155,791
Lower Snake Hatcheries	31,852	30,749	33,000	29,000	32,265	32,265	31,000	32,265
COE CRFM Studies	-	-	7,266	3,619	5,255	5,255	5,442	5,255
Asset Management Total	911,960	970,258	971,242	990,082	1,019,755	1,088,128	980,662	1,053,942
Conservation Purchases	63,929	68,293	67,357	67,357	69,027	69,027	67,357	69,027
Commercial Activities Total	63,929	68,293	67,357	67,357	69,027	69,027	67,357	69,027
Renewables	34,227	30,326	34,418	29,467	25,967	26,767	31,943	26,367
Conservation Infrastructure	20,152	25,275	27,300	27,300	26,044	26,106	27,300	26,075
Market Transformation	11,857	11,773	11,800	11,800	11,800	11,800	11,800	11,800
Low-Income and Tribal Weatherization	3,268	5,204	6,005	6,005	6,005	6,005	6,005	6,005
Distributed Energy Resources	252	186	215	215	215	215	215	215
NW Power & Conservation Council	11,180	10,985	11,942	12,431	11,942	11,942	12,187	11,942
Operations Total	80,936	83,750	91,680	87,218	81,973	82,835	89,449	82,404
Asset Management	6,110	6,513	8,162	8,239	6,955	7,184	8,200	7,070
Commercial Activities	27,210	25,710	27,485	28,193	30,557	31,900	27,839	31,228
Operations	44,658	44,559	48,700	50,421	53,933	53,958	49,560	53,946
Non-Generation Operations Total	77,977	76,782	84,347	86,853	91,445	93,042	85,600	92,244
Enterprise Services' G&A Allocations	62,125	65,839	64,937	65,336	84,220	86,819	65,136	85,520
Post-retirement benefits	13,496	15,736	18,666	19,354	19,310	19,844	19,010	19,577
Enterprise Services G&A Total	75,620	81,575	83,602	84,689	103,530	106,663	84,146	105,096
Undistributed reduction	-	-	(2,971)	(2,971)	-	-	(2,971)	-
Costs Described in IPR Total	1,210,422	1,280,658	1,295,257	1,313,228	1,365,730	1,439,696	1,304,242	1,402,713

Table 4 shows Power Services' recent, current, and proposed capital requirements, while Table 5 shows the forecast capital for FY 2026 through FY 2033.

Table 4: Power Services, Capital

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Corps of Engineers	135,668	159,944	216,296	229,286	201,075	228,060	222,791	214,568
Columbia Generating Station	78,800	116,600	115,377	113,780	111,517	164,156	114,578	137,837
Bureau of Reclamation	29,446	31,689	47,824	51,974	68,925	47,615	49,899	58,270
Fish and Wildlife	40,185	41,897	43,000	43,000	41,335	41,300	43,000	41,318
AFUDC	13,150	9,947	10,823	11,286	10,500	10,500	11,055	10,500
Power IT	-	704	4,300	2,600	2,500	1,000	3,450	1,750
Capital Total	297,249	360,781	437,620	451,926	435,852	492,631	444,773	464,241

Table 5: Power Services Capital Outyear Summary

(\$thousands)	Capital Outyears							
	2026	2027	2028	2029	2030	2031	2032	2033
Corps of Engineers	258,612	267,935	276,193	271,473	273,260	277,453	266,986	264,237
Columbia Generating Station	109,663	113,763	91,873	130,998	136,370	188,507	111,570	136,375
Bureau of Reclamation	23,008	20,066	18,601	30,360	35,821	38,828	56,546	66,684
Fish and Wildlife	29,000	15,700	15,000	15,000	15,000	15,000	15,000	15,000
AFUDC	10,500	10,500	10,500	10,500	10,500	10,500	10,500	10,500
Power IT	1,700	1,700	1,700	1,761	1,802	1,843	1,884	1,927
Total	432,483	429,664	413,867	460,092	472,753	532,131	462,486	494,723

3.1 Asset Management

Asset Management represents 75% of Power IPR program costs. Figure 3 provides an overview of these expenses, while Table 6 presents them in more detail.

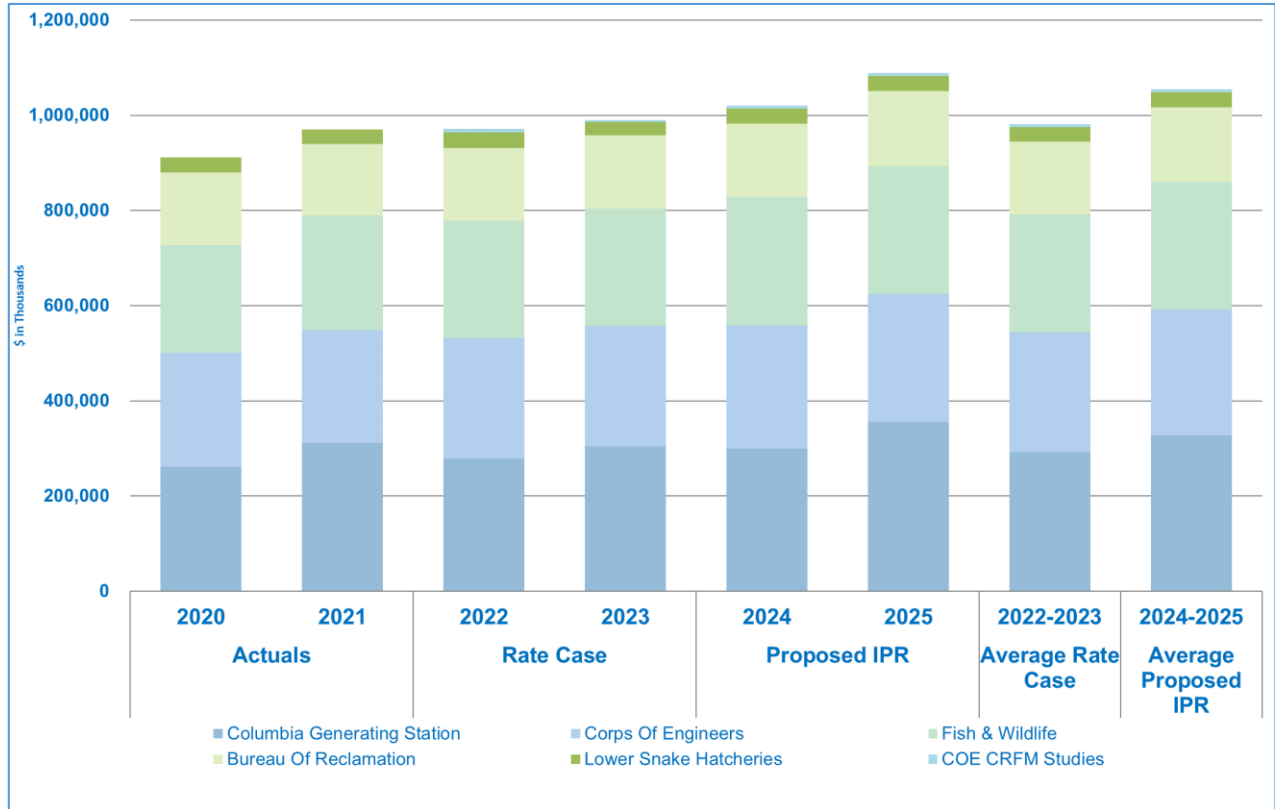


Figure 2: Power Asset Management, Expense Overview

Table 6: Power Asset Management, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Columbia Generating Station	260,962	311,753	278,643	304,748	299,246	355,133	291,695	327,189
Corps Of Engineers	240,298	236,477	252,557	252,557	259,391	269,392	252,557	264,392
Fish & Wildlife	226,236	241,109	247,508	247,196	269,235	268,865	247,352	269,050
Bureau Of Reclamation	152,612	150,170	152,269	152,963	154,364	157,218	152,616	155,791
Lower Snake Hatcheries	31,852	30,749	33,000	29,000	32,265	32,265	31,000	32,265
COE CRFM Studies	-	-	7,266	3,619	5,255	5,255	5,442	5,255
Total	911,960	970,258	971,242	990,082	1,019,755	1,088,128	980,662	1,053,942

Table 7 lists Power Asset Management’s forecast capital requirements through FY 2033.

Table 7: Power Asset Management, Capital Detail

(\$thousands)	Proposed IPR		Capital Outyears							
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Corps of Engineers	201,075	228,060	258,612	267,935	276,193	271,473	273,260	277,453	266,986	264,237
Columbia Generating Station	111,517	164,156	109,663	113,763	91,873	130,998	136,370	188,507	111,570	136,375
Bureau of Reclamation	68,925	47,615	23,008	20,066	18,601	30,360	35,821	38,828	56,546	66,684
Fish and Wildlife	41,335	41,300	29,000	15,700	15,000	15,000	15,000	15,000	15,000	15,000
AFUDC	10,500	10,500	10,500	10,500	10,500	10,500	10,500	10,500	10,500	10,500
Power IT	2,500	1,000	1,700	1,700	1,700	1,761	1,802	1,843	1,884	1,927
Capital Total	435,852	492,631	432,483	429,664	413,867	460,092	472,753	532,131	462,486	494,723

3.1.1 Federal Hydro Expense & Capital Program

As the largest hydropower system in the U.S., the FCRPS supplies low-cost, carbon-free power products and services to customers in the Pacific Northwest that, in turn, serve retail consumers of electricity. As a multipurpose system, FCRPS dams also provide flood risk management, navigation, irrigation, municipal and industrial water supply, and recreation opportunities for the region. The USACE and Reclamation operate and maintain FCRPS dams. BPA directly funds USACE and Reclamation’s operations, maintenance, and capital programs for power assets as well as a share of multipurpose assets in combination with federal appropriations.

The USACE, Reclamation and BPA work collaboratively to safely administer a sustainable asset management program that focuses on delivering low-cost, reliable power and supporting the multipurpose missions of the FCRPS. As trusted stewards, the three agencies must cost-effectively balance the multiple uses of FCRPS physical assets and natural resources while mitigating the environmental and cultural impacts of the system.

3.1.1.1 Current Asset Condition

FCRPS equipment condition is assessed using the hydroAMP condition assessment framework, a methodology used throughout the world and which aligns with ISO 55000 standards. In total, the condition of more than 10,000 pieces of FCRPS equipment and equipment systems is tracked using the hydroAMP application. Condition ratings for each asset type are based on a set of objective condition indicators related to operational performance, maintenance history, physical inspection and age. Condition indicators are weighted and summed to derive a condition score between 0 and 10. Numeric scores are further categorized qualitatively as follows:

Table 8: hydroAMP Condition Scores

Condition Score	Condition Description
8.0-10.0	Good
6.0-7.9	Fair
3.0-5.9	Marginal
0.0-2.9	Poor

Across the system, 46% of the assets are in good condition, 26% are in fair condition, 21% are in marginal condition, and 8% are in poor condition. Of particular importance to power generation is the high percentage of critical powertrain asset types in either marginal or poor condition. Turbine runners and generator windings represent more than 45% of the estimated replacement cost of each unit, on average. They also tend to result in the longest outage durations in the event of equipment failure.

Figure 4 illustrates equipment condition for a selection of powertrain asset types that tend to have the largest impacts on availability. It shows that 50% of Kaplan turbine runners and over 60% of generator windings in the system are in either marginal or poor condition. These two asset types are major drivers in the FCRPS capital investment program due to their current condition and related risks of failure. A high percentage of excitation systems are also showing degraded condition. With spare parts becoming harder to procure, outage consequences for these assets are expected to increase. This concern is the primary driver for a number of upcoming excitation system replacement projects.

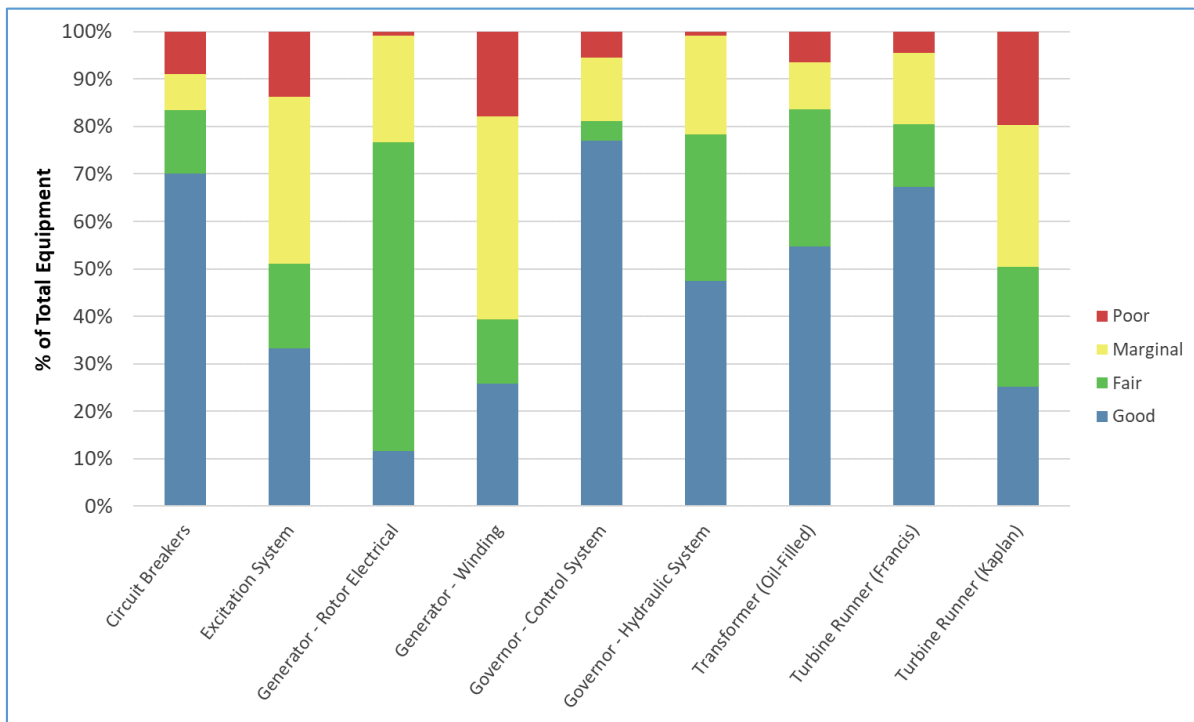


Figure 4: Current Asset Condition by Select Powertrain Asset Types

Figure 5 shows condition across all equipment categories. Note that powertrain equipment as a whole is primarily in good and fair condition. However, as previously explained, the equipment in marginal and poor condition are among the most costly to replace and have the greatest outage consequences. Besides assets that directly affect energy production, the Central Controls, Fish Protection, Infrastructure and Water Control equipment categories each has a significant number of assets with degraded condition. Asset types in marginal and poor condition are:

Central Controls: SCADA/GDACS, station control boards, main consoles and annunciation systems

Fish Protection: Fish screens

Infrastructure: Communications hardware, elevators, and HVAC

Water Control: Gates (emergency and non-emergency closure) and emergency closure valves

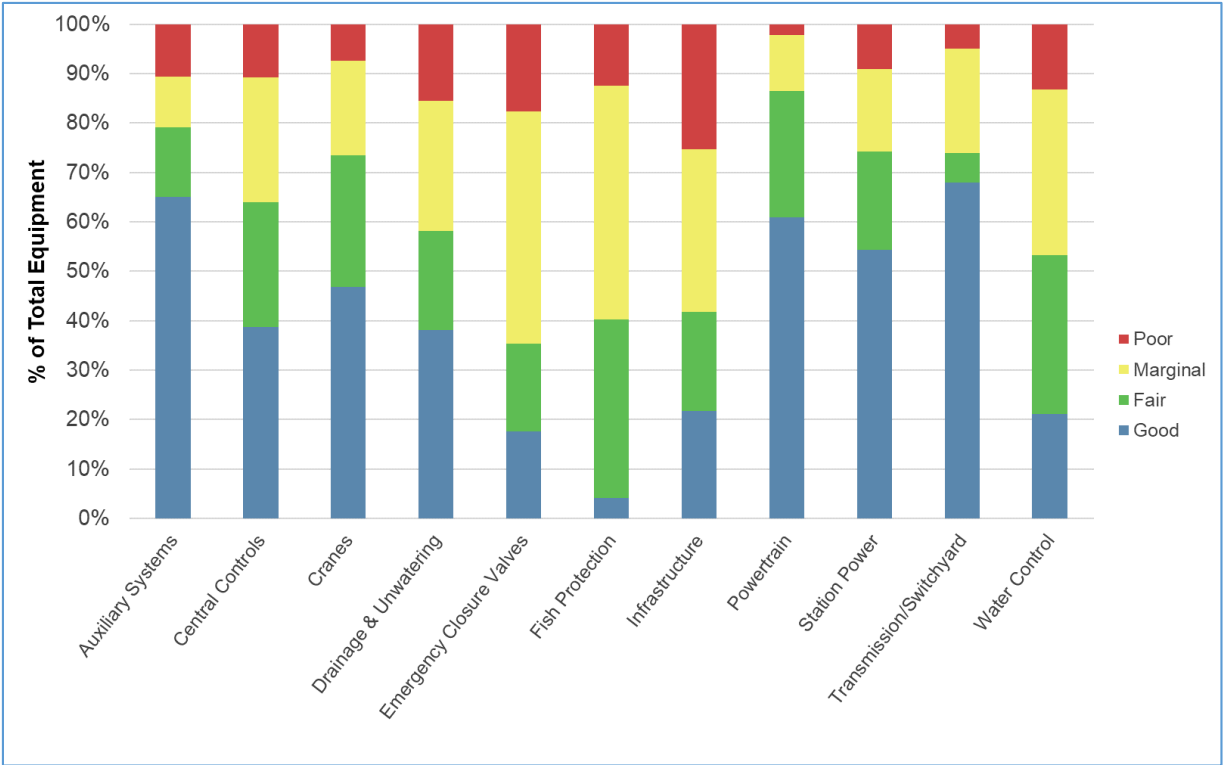


Figure 5: Current Asset Condition by Equipment Category

Reinvestment in these assets drives much of the non-powertrain portion of the FCRPS capital investment program. This can be seen in Figure 5.

3.1.1.2 Federal Hydro O&M Expense Program

Historical Program Execution

The O&M program reflects the projected costs of USACE and Reclamation routine hydropower O&M activities, non-routine maintenance projects, and mitigation-related activities to benefit fish and wildlife and protect cultural resources at FCRPS facilities. Other USACE and Reclamation O&M programs include:

- Dam safety
- Personnel safety
- Engineering
- Contracting
- Physical and cybersecurity
- Water management
- Reliability compliance

From 2012 to 2018, FCRPS total expense forecasts increased about 4% per year, on average. Expense forecasts were flat in 2018 and 2019. Then for the 2020-2021 rate period, USACE and Reclamation reduced their expense forecasts by 1.4% and 6.7%, respectively, to support BPA's cost-management objectives and mitigate upward pressure on Power rates. Projected expense in 2022-2023 were level with the 2020-2021 amounts. See Figure 6.

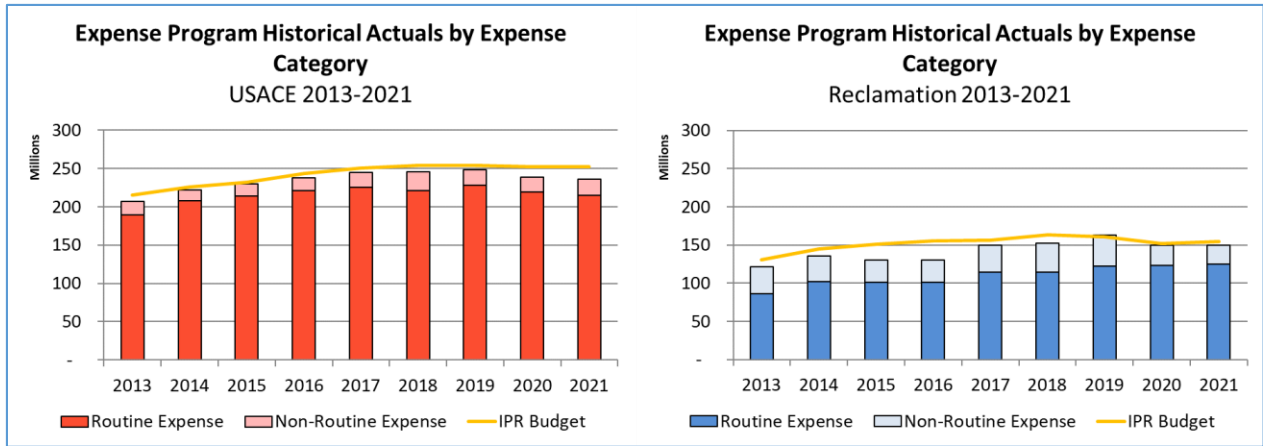


Figure 6: Expense Program Historical Actuals by Expense Category

Past O&M cost increases were driven by mandated increases in wage rates, rising regulatory and mitigation requirements, and non-routine activities, e.g., Grand Coulee’s G22-24 mechanical overhaul. These cost pressures have not subsided, but USACE and Reclamation have implemented cost management initiatives.

Both USACE and Reclamation have taken steps over the last six years to improve O&M efficiencies to reduce costs. They have done this by deferring non-routine maintenance projects, managing labor costs, evaluating work schedules, consolidating functions, and evaluating new O&M strategies that may accept reduced levels of performance based on asset criticality and risk to each agency’s respective mission.

Non-routine maintenance projects are being regularly reprioritized, with only the most critical projects moving forward and others being deferred into future rate periods. Non-routine maintenance projects include a wide variety of work, including unplanned repairs of failed equipment and planned large-scale rehabilitation and acquisition of spare equipment. Cessation of this work will delay these equipment renewal efforts and may have a negative long-term effect on the condition of assets. Numerous projects have been deferred in previous rate periods, causing the backlog of needs to grow. Any emerging work or failed components will require reprioritization and deferral of existing projects after risk-based evaluation of impacts.

Program Objectives in 2024 and 2025

To meet program requirements and ensure continued reliability, the USACE and Reclamation are requesting an increase in projected costs. The increases reflect inflationary pressures, high priority non-routine backlog activities, and efforts to maintain equipment condition for continued reliability.

Efforts are underway at the USACE and Reclamation to find efficiencies in O&M programs. The agencies continue to analyze and evaluate the value and importance of assets to optimize operations, maintenance, and investment strategies. The value and importance of the assets will be determined by assessing the mission-essential purposes of the facility. Current demands to provide water quality, fish passage/attraction, power generation, water delivery for irrigation and municipal water, recreation, and ancillary services at each facility will be evaluated. Once the value of the facilities/assets for all mission-essential purposes has been established, it will be used to develop optimized operations and maintenance activities to align the level of effort of O&M to the value of each facility or asset. This

approach is aligned with asset management life-cycle’s purpose of ensuring that the assets continue to meet the needs of the organization and that the levels of effort (O&M) are optimized to ensure that those efforts are performed as cost-effectively as possible.

The ongoing effort to find efficiencies in the O&M program come at a time when the hydropower industry is facing rising cost pressures from aging infrastructure, wage increases, and increasing regulations, including National Pollution Discharge Elimination System (NPDES) permits, 401 certifications, and the temperature Total Maximum Daily Load (TMDL) requirements. Cost-management efforts will continue and resources will be prioritized to support mission-critical efforts while also implementing strategic reductions in other program areas.

The USACE and Reclamation have supported BPA’s commitment to disciplined cost-management by reducing projected costs from BP-18 to BP-20 by \$15 million annually, and holding costs at that reduced level in BP-22. This involved rebalancing and reprioritizing projects, as well as implementing efficiencies to reduce labor costs for needed work and identifying work that could be omitted. Aggressive reductions in the labor force were realized by the USACE – 86 employees during 2018-2021 – as 60% to 70% of expense costs reflect employee salaries and benefits. Non-routine maintenance projects were prioritized resulting in work deferred to future rate periods.

Deferring or slowing projects creates an increased risk of outages that negatively impacts unit availability and available generation. Historically the forced outage factor for the USACE is 5% to 7%; it increased from 4.8 to 5.2% from March 2020 to March 2022. John Day and The Dalles continue to experience high forced outage rates of 9.9% and 10.2%, respectively. Other facilities are experiencing elevated forced outage rates with Little Goose at 7%, and Chief Joseph at 5.4% in March 2022. Reclamation’s forced outage factor is historically less than 1% but is currently at 4% due to extended unit outages in the Left, Right, and Washington Power Plants at Grand Coulee. Figure 7 shows the current forced outage factor vs. 10-year averages by location.

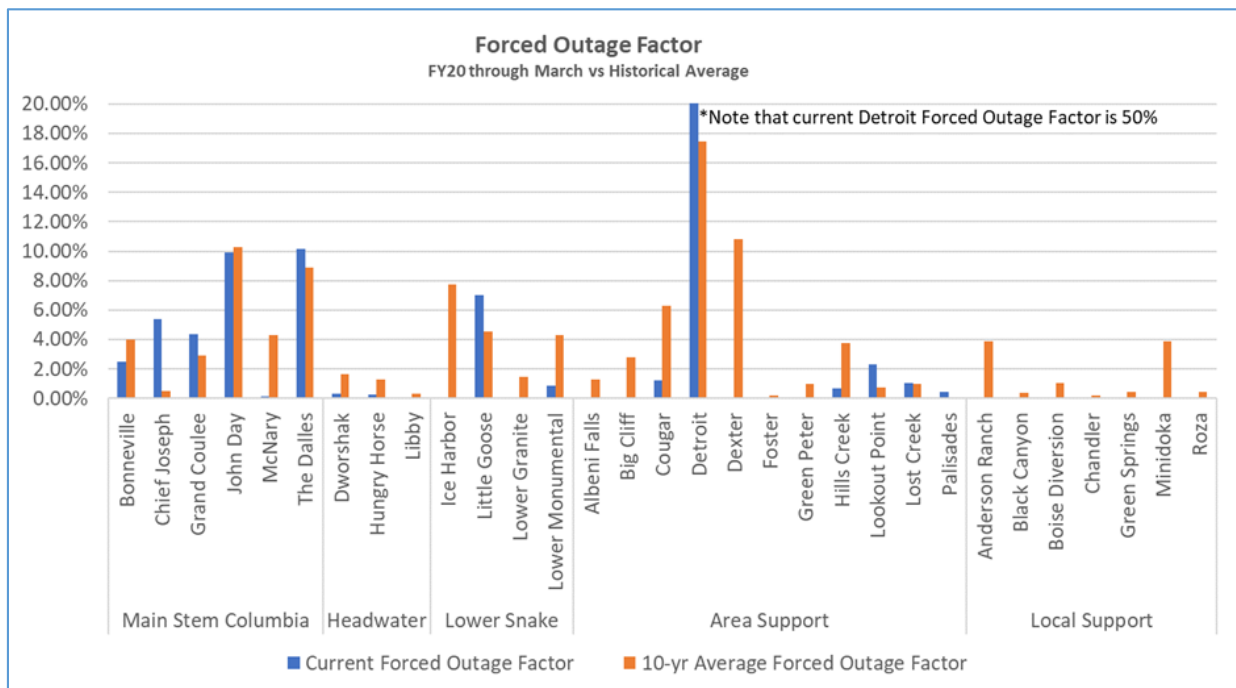


Figure 7: Forced Outage Factor

Overall, the majority of the forced outages contributing to the high FCRPS forced outage factor are from the mainstem Columbia and lower Snake strategic classes. These strategic classes account for 89% of the FCRPS average annual generation. Chief Joseph, Grand Coulee, The Dalles and Little Goose all currently have forced outage factors higher than their 10-year averages.

The increased projected costs reflect reducing the deferral of work and easing pressure on staffing reductions. These projected costs support increasing the expected reliability of the power generation system and further addressing our environmental commitments. The projected costs address high priority non-routine backlog activities and reducing deferral of work that supports equipment condition will reduce risk in these areas.

3.1.1.3 Federal Hydro Capital Investment Program

The Federal Hydro program develops capital investment forecasts for the SAMP by calculating the optimal time to replace equipment such that asset life-cycle costs (risk, opportunity and replacement costs) are minimized. This optimal scenario sets the baseline to which other scenarios are compared. Various levels of capital investment are modeled to determine the incremental differences in net present value compared to the optimal scenario. The goal is to identify a level of projected investment that is achievable for BPA and its generating partners, is informed by BPA's cost-management goals, and captures as much of the value of the optimal scenario as possible. This analysis informs the strategic direction and general timing for when and where capital investments should be made based on asset condition, criticality and risk. BPA and its generating partners use this information to collaboratively develop the FCRPS System Asset Plan. The System Asset Plan builds on the analysis produced for the SAMP by identifying specific investments to address the replacement needs identified in the SAMP as well as incorporating input directly for the USACE, Reclamation and their respective facilities. Priorities are reassessed on an annual basis when BPA and its generating partners optimize the System Asset Plan based on the costs and benefits of each investment.

Historical Program Execution

Capital investments have varied between \$150 million and \$200 million over the last 10 years (see Figure 8). Although analyses have supported higher levels of capital investment for many years, the FCRPS has not yet ramped up to the levels identified in previous IPRs.

The ability to ramp up the program relies on several large powertrain investments, specifically at Grand Coulee, McNary and Chief Joseph dams. These investments have taken longer to plan, design, and execute than expected but are core to the business case for a higher level of investment. Advancing projects to fill in the spending gaps caused by delays in large investments is not always possible or optimal. A critical piece of the FCRPS investment strategy is optimizing the timing of investment. Investments are moved forward if analysis shows that it is both optimal and logistically possible. If the investment has a higher value in the future, it will not be moved forward to fill a gap.

Investment in powertrain components declined between 2012 and 2021 with more investment devoted to the Station Power, Infrastructure, and Cranes equipment categories. Many of these investments were made in anticipation of major powertrain investments in the 2020s. As powertrain investments reach the execution phase at Grand Coulee, McNary and Chief Joseph dams in the next 10 years, we expect that the share of investments dedicated to powertrain equipment will rise and the rate of execution will increase.

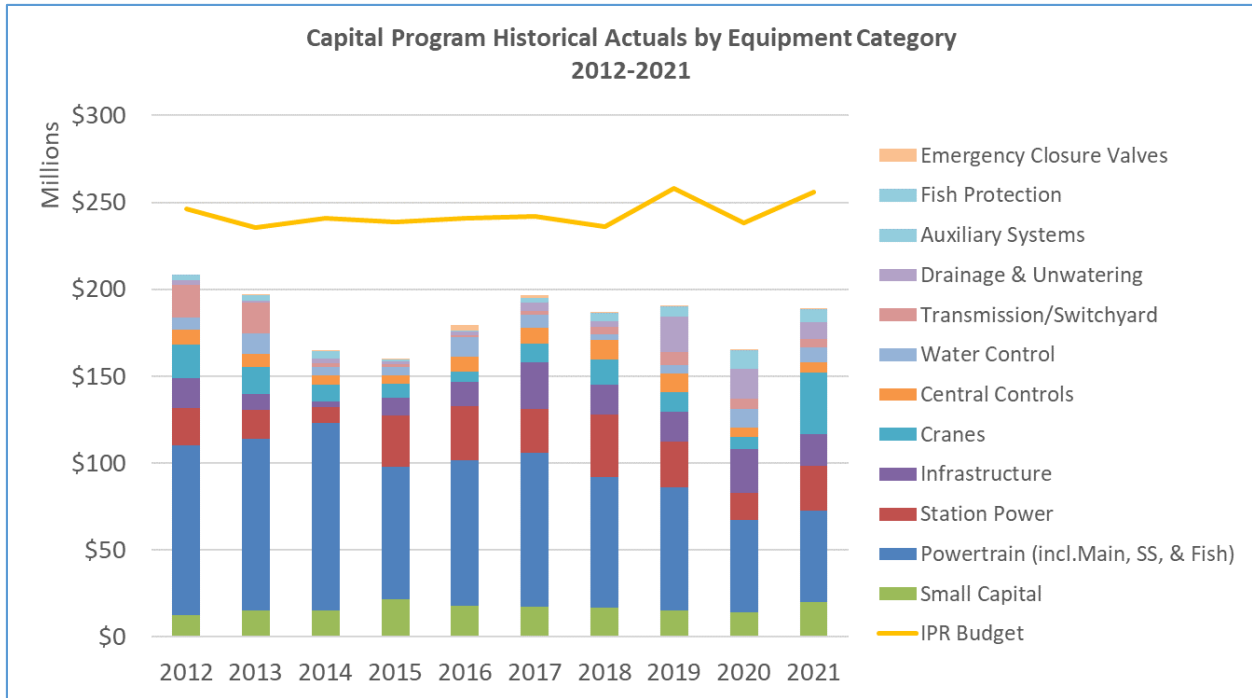


Figure 8: Capital Program Historical Actuals by Equipment Category 2012-2021

BPA, the USACE, and Reclamation are investigating using new, advanced statistical tools, i.e., machine learning, to better understand the uncertainty associated with execution of capital investments based on their respective characteristics. These tools could be used in the future to inform planning targets and increase the likelihood of execution relative to IPR projected costs.

Capital Program Strategy

The FCRPS long-term strategy is to make coordinated operations, maintenance and investment decisions that maximize the value of FCRPS assets by reducing costs, mitigating risk, improving efficiency and producing incremental value. A cornerstone of the strategy is decision-making that is risk-informed and considers asset condition, probability of failure, and impacts to each of the three agencies' missions. A key component in building the FCRPS strategy and projecting costs is determining the optimal time to reinvest in FCRPS assets. FCRPS staff use Copperleaf's C55, an asset investment planning and management tool, to develop the capital investment strategy and plan. C55 tracks the benefits, costs and assets associated with investments and provides tools for future investment identification as well as investment decision optimization. Using asset condition, failure characteristics and investment information, C55 can calculate the optimal time to invest in an asset, optimize the timing of investments in an investment portfolio, and illustrate the costs and benefits of different investment strategies. This type of optimization and analysis is a key part of ISO 55000 standards for Asset Management Decision-Making.

Arriving at recommended investments to include in projected costs involves performing sensitivity analyses to understand the cost and risk tradeoffs of different levels of capital investment. For BP-24, five levels of investment were studied, ranging from \$250 million per year to \$350 million per year, escalating at the rate of inflation. The model seeks to replace equipment at the point at which life-cycle costs are

minimized. It identifies investments at the projected cost. However, safety, environmental, compliance and public perception risks are tracked qualitatively, and the model will recommend intervention to increase projected costs if an asset is expected to cross into a high-risk category from a combination of its likelihood of failure and its consequence of failure.

Analysis Results

Compared to a no-investment alternative, all projected costs analyzed produced risk mitigation and efficiency benefits with net present values (NPVs) between \$12.2 billion and \$13.4 billion (see Figure 9). Higher levels of investment over the recommended strategy produce incrementally smaller benefits and are less logistically feasible to execute. Lower levels of investment are significantly more costly from a risk perspective. The recommended investment level is expected to deliver a \$13.1 billion NPV over the 50-year period of study. It also achieves 94% of the net benefits associated with the hypothetically ideal scenario in which all assets are replaced exactly at their optimal replacement dates that minimize life-cycle costs.

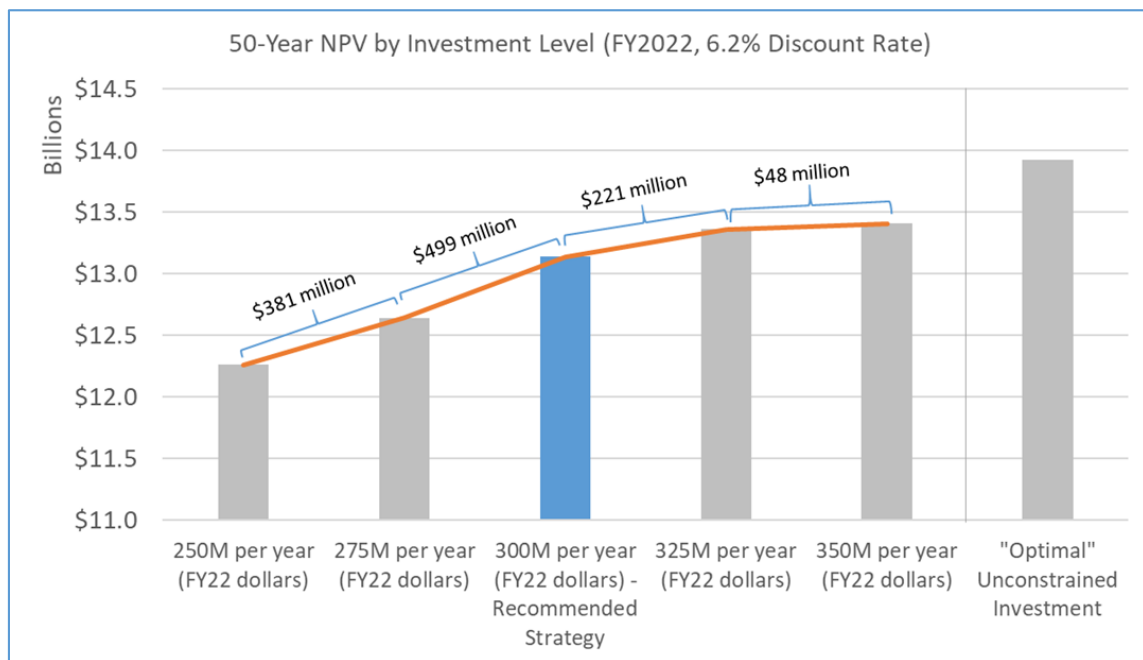


Figure 9: 50-Year Net Present Value of Strategy Alternatives (FY 2022)

Capital program value is primarily derived from reductions in the risk of direct costs and lost generation associated with equipment failure. The recommended strategy, included in our projected costs, is expected to reduce lost generation risk by 50% over the next 20 years as high-risk assets at McNary, Grand Coulee, Chief Joseph and John Day are replaced. Direct cost risk, the risk associated with the incremental cost of replacing assets that have failed, is expected to be reduced by 11%. Further benefits of the recommended strategy include reductions in safety and environmental risk as well as critical replacement of joint assets that support the various missions of the three agencies.

Recommended Strategy

Investment in powertrain equipment is expected to represent roughly half of the annual capital projected cost over the 10-year period beginning in 2024 (see Figure 10). Crane replacements and modernizations, which have been quite common in the recent years ahead of powertrain projects, are expected to decline from 2024 to 2033. Investment in infrastructure, station power, auxiliary system and water control assets increase slightly over this period as a result.

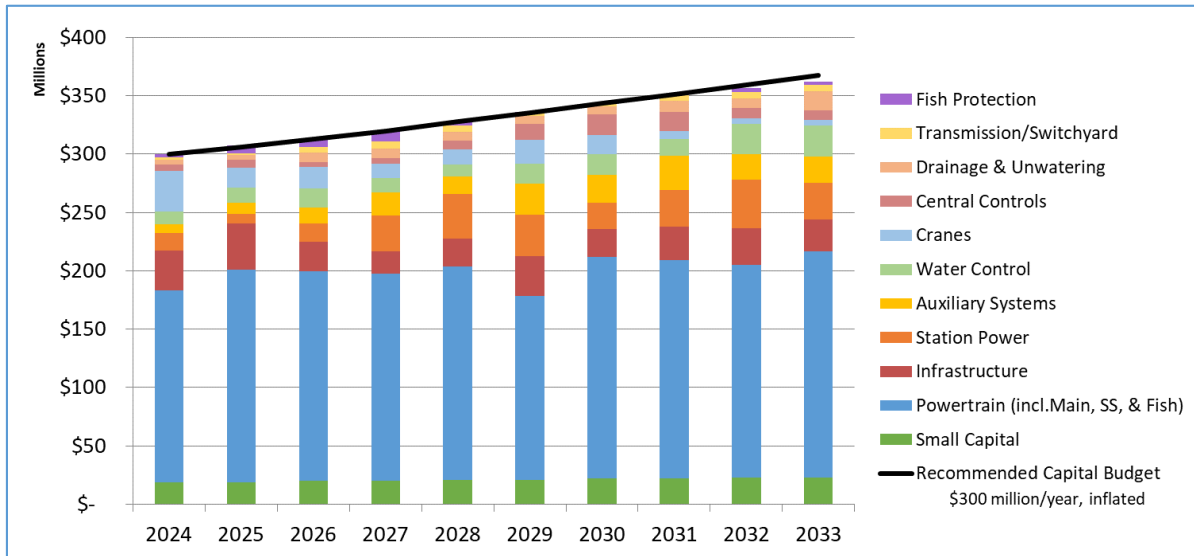


Figure 30: 10-Year Capital Program Forecast by Equipment Category 2024-2033

Figure 11 shows the average annual capital investment forecast at each plant from 2024-2033 versus the current level of lost generation risk.

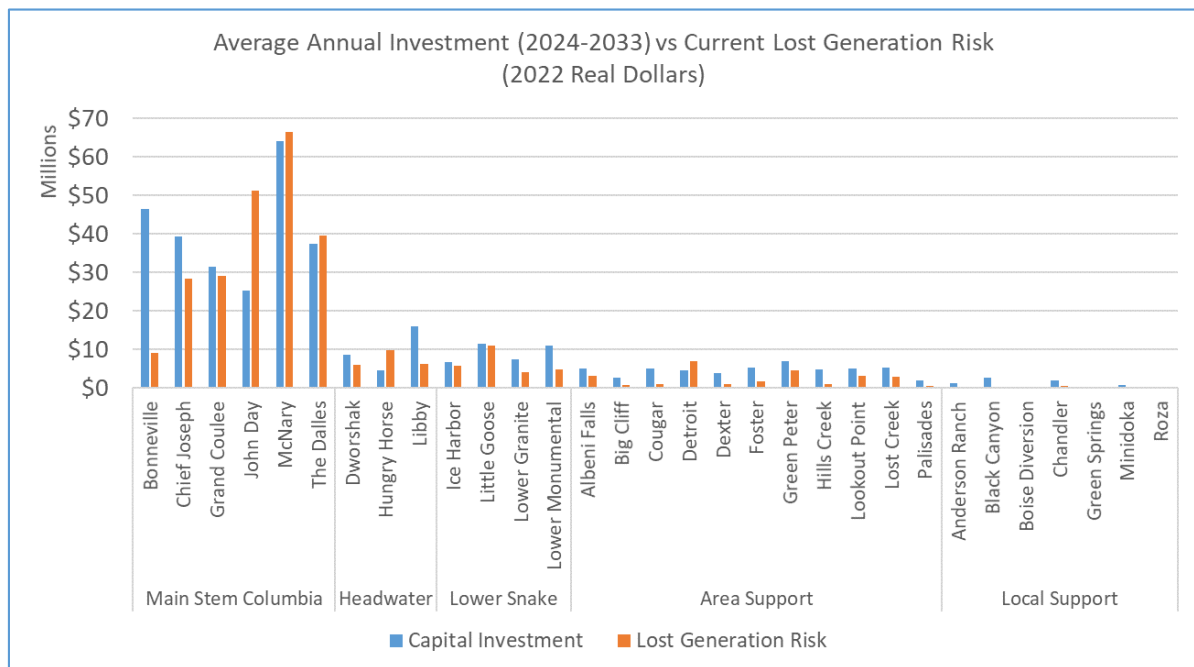


Figure 41: Avg. Annual Capital Investment Forecast vs. Lost Generation Risk by Plant, 2024-2033

Blue bars represent planned projects that are in scoping, design or construction. Orange bars show the current level of lost generation risk based on asset condition, probability of failure and failure consequences. As lost generation risk is the primary driver for replacement in most powertrain assets, the FCRPS strategic approach tends to drive investments to be roughly proportional to their current lost generation risk. However, there are some plants where investment in multipurpose assets is a higher priority at this time.

3.1.1.4 Federal Hydro Program Summary

The forecast level of capital and expense spending over the next 50 years is closely tied to the amount of generation produced by each strategic class. It should be recognized that generation is just one of the various missions that FCRPS facilities support, so exact alignment is not expected.

More than 60% of the capital and expense programs are forecast for the mainstem Columbia, which represents 77% of average annual FCRPS generation (see Table 9). The main stem is also the most cost-effective of the strategic classes with a 50-year incremental cost of generation (direct capital and expense) of \$8.08/megawatt-hour and a 50-year fully-loaded cost (all USACE/Reclamation/BPA costs attributable to the hydro system) of \$19.46/MWh. As a system, the capital and expense programs presented in this IPR are expected to have a 50-year cost of generation of \$10.14/MWh and a 50-year fully-loaded cost of \$22.13/MWh. Both metrics are highly competitive with recent market prices and BPA’s expectations for market prices in the future.

Table 9: Long-Term Capital and Expense Program Summary

Strategic Class	% of FCRPS Average Annual Generation	% of 50-Year Capital Forecast	% of 50-Year Expense Forecast	50-Year Cost of Generation (\$/MWh)	50-Year Fully Loaded Cost (\$/MWh)
Main Stem Columbia	77%	63%	66%	\$8.08	\$19.46
Lower Snake	12%	12%	13%	\$12.50	\$27.22
Headwater	6%	9%	8%	\$13.15	\$24.97
Area Support	4%	12%	9%	\$32.77	\$47.87
Local Support	1%	4%	4%	\$42.24	\$55.17
FCRPS	100%	100%	100%	\$10.14	\$22.13

3.1.2 Columbia Generating Station

The Columbia Generating Station (Columbia) is a 1,207 (gross) megawatt boiling water nuclear reactor located on the Department of Energy (DOE) Hanford Reservation in Richland, Washington. Columbia began operating in 1984 and is licensed by the Nuclear Regulatory Commission (NRC) to operate through 2043. Columbia is owned and operated by Energy Northwest, a joint operating agency under Washington State law, created by and in support of aggregate public power needs. Columbia’s output, along with FCRPS power, is used to supply and meet the BPA administrator’s long-term firm power sales contract obligations.

Columbia’s operating costs are included in Power Services’ rates and cover the O&M of the nuclear plant. BPA acquires 100% of Columbia’s generation and funds 100% of its costs. BPA also directly funds Columbia’s Decommissioning Trust Fund, Independent Spent Fuel Storage Decommissioning Trust Fund and Nuclear Electric Insurance Limited (NEIL) insurance premiums.

Energy Northwest has worked for over a decade to improve and sustain excellent technical performance while significantly reducing costs to provide competitively priced reliable power.

Columbia continues to benefit from the megawatt-electric (MWe) gained with the installation of the Leading Edge Flow Meter Project and valve work completed in the spring 2015 through 2019 refueling outages. Through this effort, Columbia has been able to deliver approximately 25 additional MWe to the grid. During Columbia's refueling outage in the spring of 2017, the NRC granted Energy Northwest permission to proceed with a measurement uncertainty recapture power uprate. This allowed Columbia to increase its licensed output from 3,486 megawatts thermal to 3,544 megawatts thermal. The reactor power uprate also resulted in additional electrical output of approximately 19 MWe for the station.

Columbia continues to break generation records, demonstrating high levels of reliability while also increasing flexibility for the region. During 2018, Columbia produced 9.7 million megawatt-hours (MWh). This is more than any other year in its 34-year history. Columbia's previous generation record was set in 2016 with 9.6 million MWh. In 2019, Columbia produced 8.9 million MWh of electricity, setting a new generation record for a refueling outage year. Also, in 2019, Energy Northwest and BPA worked jointly to revise the existing load-shaping protocol to better support the region's needs during times of high spring runoff. In 2020, Columbia produced approximately 9.6 million MWh to reach its third highest generation. In 2021, a refueling outage year, Columbia produced approximately 8.8 million MWh.

Columbia and BPA have also worked jointly to increase Columbia's flexibility over the past few years. This has created a better system response to changing system needs, such as reducing Columbia power to account for high water flows or scheduling planned maintenance so the plant is online during extreme hot and cold weather patterns. These efforts to ensure Columbia's reliable output support sustaining BPA's financial strength and provide competitive power products and services.

Program Objectives in 2024 and 2025

Projection of costs for FY 2024 and FY 2025 will support continued O&M of Columbia and are consistent with the cost forecast provided by Energy Northwest. Higher costs in 2025 are attributed to Columbia's refueling and maintenance outage in addition to accumulated impacts of inflation.

Columbia has held its costs consistent with the BP-18 O&M forecasts through BP-22. This has been accomplished primarily by reducing or removing discretionary related spending, scrubbing department and program cost projections while making significant tradeoffs, and reducing overall headcount. Columbia has been diligent in living within its commitments made over the last several rate periods by making internal changes throughout the year to account for unknowns. Columbia's projected costs reflect planning for several reductions to hedge actual inflation and support the increased outage duration related to the implementation of the Moisture Separator Reheater life-cycle replacement. Beyond BP-24, Energy Northwest's goal is to manage costs as low as reasonably achievable, with a forecast 3% inflationary increase in costs within their long-range plan. Energy Northwest is committed to staying at or below the inflation rate and supplying BPA and the region's ratepayers with firm, carbon-free power.

Forecast O&M costs are based on Energy Northwest's Columbia Long Range Plan (LRP). The LRP is established through a rigorous internal process that looks at challenges and constraints needing to be overcome to meet Columbia's mission and support continued operation. O&M and capital projects are reviewed and ranked prior to inclusion in the LRP. Highest priority projects are included in the projected costs, whereas lower priority projects may be deferred to future years or dropped from the list. The LRP is

systematically monitored and updated annually to account for the needs of the plant based on defined life-cycle management requirements.

Energy Northwest identifies, funds and completes major projects each year. One example of a major expense project anticipated for FY 2024 through FY 2026 is the in-service inspection and non-destructive examination project required by the NRC. Others include the inspection, repair and refurbishment of valves in the plant, vessel services during the outage, and main turbine inspections. Noteworthy capital projects include:

- High pressure turbine rotor replacement
- Moisture separator reheater internal retrofit
- Control rod drive repair/replacement
- Plant processing computer phase 1
- Main turbine valve maintenance

In 2012, the NRC approved the extension of Columbia's operating license to 2043. This extension of the licensing period to a total of 60 years has allowed contributions to the Columbia Decommissioning Trust Fund to be made over a longer period of time. However, Decommissioning Trust Fund returns and projected future costs of decommissioning are evaluated periodically, which may impact the future contribution schedule.

In May 2012, DOE, the Tennessee Valley Authority, the U.S. Enrichment Corporation, and Energy Northwest signed agreements to pursue a depleted uranium program to provide nuclear fuel for Columbia, a program similar to the one conducted in 2005. Under the program, DOE provides depleted uranium hexafluoride (DUF6) that can be cost-effectively enriched to provide enough uranium fuel for Columbia operations through at least 2028. This agreement generated savings of approximately \$20 million per year from FY 2014 through FY 2019 and is projected to continue to achieve savings through 2028. With markets signaling future cost increases, Energy Northwest executed a long-term supply contract with Orano for uranium and enrichment purchases through 2030. In addition, Energy Northwest purchased additional enriched uranium, which was placed into inventory in the fall of calendar year 2020. These purchases, combined with existing inventory and contracts, secured uranium and enrichment to meet Columbia's needs through 2035. Columbia's significant uranium inventory and the long-term enrichment contracts in place continue to minimize the impact of volatility in the market price of nuclear fuel.

Several potential factors could influence Columbia's ability to operate at the projected cost. These include:

- Any emergent equipment reliability issues.
- Any additional days needed for the refueling and maintenance outage.
- Any change in regulatory fees.
- Any forced outages if the plant needs to be taken offline for repairs.
- Unexpected changes by the state of Washington that would affect retirement costs.
- Any unexpected increases in employee benefits and/or labor contracts.
- Undefined and/or unknown regulatory mandates from the NRC.
- Any significant deviation from planning assumptions.

As part of its adaptive management process, Columbia looks for opportunities to maintain flexibility to address emergent challenges.

Fish and Wildlife

The narrative for the Fish and Wildlife program, which is a part of Power's Asset Management program, can be found in Section 6.

3.2 Operations

Operations comprise 6% of Power IPR program costs. Figure 12 provides an overview of these expenses, while Table 10 presents them in more detail.

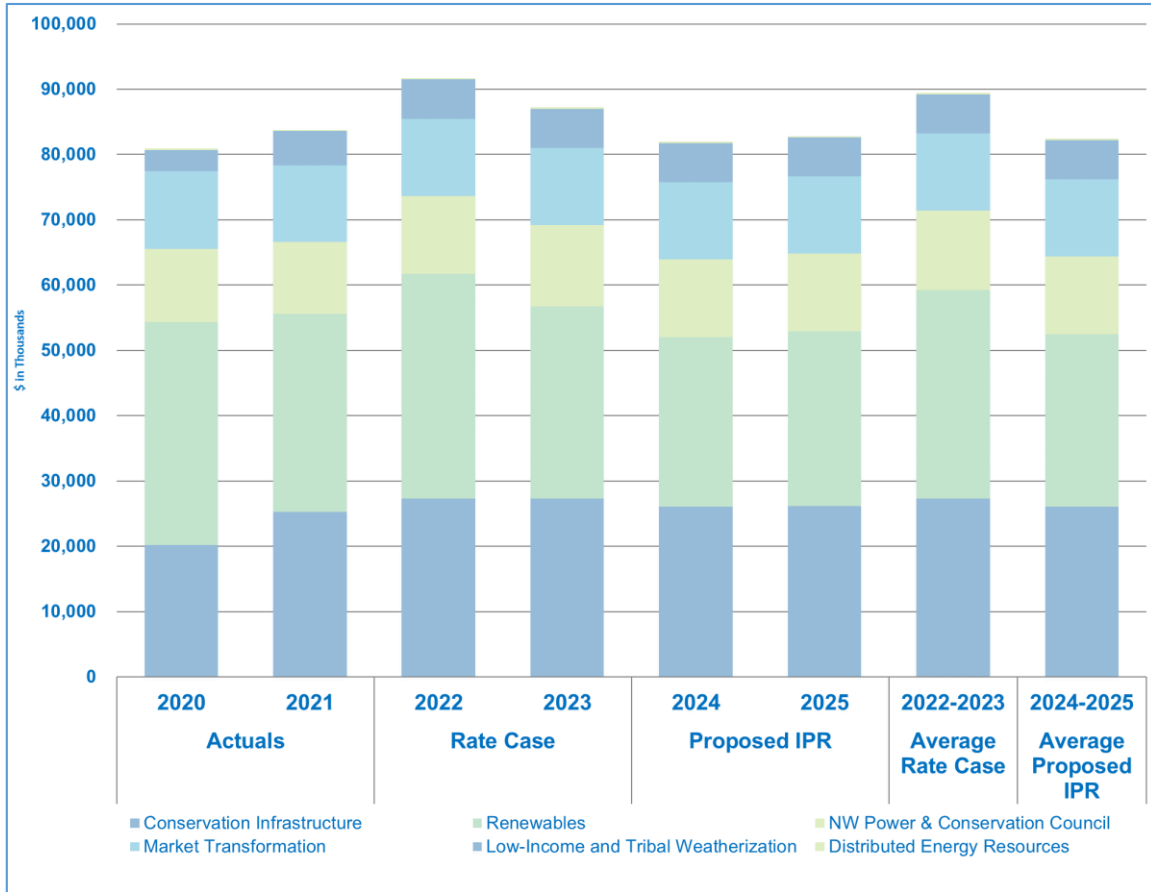


Figure 5: Power Operations, Expense Overview

Table 10: Power Operations Program, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Renewables	34,227	30,326	34,418	29,467	25,967	26,767	31,943	26,367
Conservation Infrastructure	20,152	25,275	27,300	27,300	26,044	26,106	27,300	26,075
Market Transformation	11,857	11,773	11,800	11,800	11,800	11,800	11,800	11,800
Low-Income and Tribal Weatherization	3,268	5,204	6,005	6,005	6,005	6,005	6,005	6,005
Distributed Energy Resources	252	186	215	215	215	215	215	215
NW Power & Conservation Council	11,180	10,985	11,942	12,431	11,942	11,942	12,187	11,942
Total	80,936	83,750	91,680	87,218	81,973	82,835	89,449	82,404

3.2.1 Renewables

The Renewables program covers renewable resources acquired by the administrator to meet firm power contract obligations. The program seeks opportunities to reduce costs and maintain existing program functions. BPA purchases energy from two wind projects currently under contract. Projected costs also include maintaining the solar monitoring networks and management costs of Tier 1 Renewable Energy Certificates.

The Renewables program projects its costs will remain at or below the rate of inflation through 2028. As contracts expire over the next five years, the cost of the program will steadily decrease.

The Renewables program costs are composed of 99.99% long-term power purchase contracts costs and 0.01% program support costs. The power purchase contracts' costs cover existing obligations at an annual average cost of approximately \$26 million for the rate period, which is a decrease of \$5.6 million compared to BP-22.

Expenses for the wind project contracts are forecast using the updated contract costs and conservative wind energy output forecasts. There is a possibility that the energy output will be greater than forecast leading to that generation used to serve load or marketed as surplus.

3.2.2 NW Power and Conservation Council

Under the Northwest Power Act, BPA funds the Northwest Power and Conservation Council according to a funding formula based on BPA's forecast annual firm power sales. Such forecast sales are coordinated and reflected within BPA's rate cases. After each rate case, BPA updates the funding range for the Council, which then runs an annual public budgeting process to determine its funding needs in a particular year. Monthly requests for funds from the Council are coordinated through BPA's Intergovernmental Affairs office.

It should be noted that the Council operates on a two-year budget timeline. The forecast in the IPR for 2025 is a preliminary estimate; the Council has not fully developed its projected costs for 2025.

3.2.3 Energy Efficiency

Through its Energy Efficiency (Conservation) program, BPA meets its obligation to acquire and encourage the development of energy savings to maximize the value of the FCRPS and lessen BPA's need to acquire other resources to supply firm power to its customers. Projected costs for the Energy Efficiency program include:

- Regional program delivery infrastructure, which includes program implementation, emerging technology, market research and market support services.
- A grant to the Northwest Energy Efficiency Alliance for market transformation and regional infrastructure support.
- Low-income weatherization grants to states and Tribes.
- Distributed energy resources.
- Conservation Purchases.

Program objectives in 2024 and 2025

BPA’s Energy Efficiency program focuses on developing cost-effective energy savings to meet the agency’s power resource needs. The evolving energy landscape and customer needs drive BPA to continuously evaluate and refine the scale, scope and composition of its energy conservation program portfolio and to ensure reliable resources are acquired.

Projected costs support conservation acquisitions and program implementation for FY 2024 and FY 2025. Conservation acquisitions are informed by the needs of BPA’s customers, the Council’s 2021 Power Plan, BPA’s 2022 Resource Program and the 2022-2027 Energy Efficiency Action Plan, currently under development. Adjustments to the scale and type of efficiency measures needed to best meet BPA’s resource needs will be reflected in the final Action Plan.

The portion of projected Energy Efficiency costs included in the Operations Program Plan are listed in Table 11. Conservation Purchases are included in the Commercial Activities Program Plan.

Table 8: Power Operations: Energy Efficiency, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Conservation Infrastructure	20,152	25,275	27,300	27,300	26,044	26,106	27,300	26,075
Market Transformation	11,857	11,773	11,800	11,800	11,800	11,800	11,800	11,800
Low-Income and Tribal Weatherization	3,268	5,204	6,005	6,005	6,005	6,005	6,005	6,005
Distributed Energy Resources	252	186	215	215	215	215	215	215
Total	35,529	42,439	45,320	45,320	44,064	44,126	45,320	44,095

The FY 2024 and FY 2025 projected Energy Efficiency costs under the Operations program supports:

Conservation Infrastructure: Provides support for BPA’s regional programmatic infrastructure, momentum savings and emerging technology. It also measures maintenance and regional end use load research, program evaluation, and contract staffing. A portion of these projected costs reflect a continued focus on achieving heating, ventilation and air conditioning (HVAC) and weatherization savings in support of acquiring savings during BPA’s times of highest energy needs. Increased conservation acquisition costs may limit BPA’s ability to take part in new regionally funded research initiatives (e.g., stock assessments, field studies), market research and evaluation of programs, or to provide data and conduct analysis for BPA’s Resource Program.

Market Transformation: BPA is one of 15 regional members of the Northwest Energy Efficiency Alliance (NEEA). BPA’s funding, based on load share, helps enable transformations of targeted markets to more efficient products. Market transformation is a well-established channel for low-cost, long-term savings and is highly effective in markets that are challenging for traditional utility programs to reach. Verified savings from NEEA’s intervention strategies and activities are counted toward BPA’s annual savings accomplishments. NEEA’s approach identifies opportunities and impediments, removes barriers, and accelerates market adoption.

Low Income and Tribal Weatherization: BPA provides grants to the four Northwest states and recognized Tribes within the region to improve efficiency levels for qualified low-income residences. Grants to states are allocated on a proportional basis using the most current census data for households with incomes below federal poverty guidelines. Grants to Tribes for low-income services are made on an application basis and take a variety of factors into consideration including geographic dispersion, prior participation and local needs.

Distributed Energy Resources: This program category includes projected costs of service contracts for analyzing Distributed Energy Resource market trends, feasibility, availability and cost data, as it applies to resource planning and other power requirements. BPA will evaluate the development of products that can be physically located close to loads and review opportunities to acquire them when supply needs arise and it is cost-effective to do so.

If implementation conditions in FY 2024 and FY 2025 vary from planning assumptions, including factors such as higher-than-expected costs of conservation acquisitions or further market disruptions created by the COVID-19 pandemic, BPA may need to enhance program support services to achieve energy savings goals. Additionally, projected cost levels do not include mitigation for smaller volume or lagging pace of market adoption, or slow energy efficiency measure development.

3.3 Commercial Activities

Commercial activities comprise 5% of Power IPR program costs. Figure 13 provides an overview of these expenses, while Table 12 presents them in more detail.

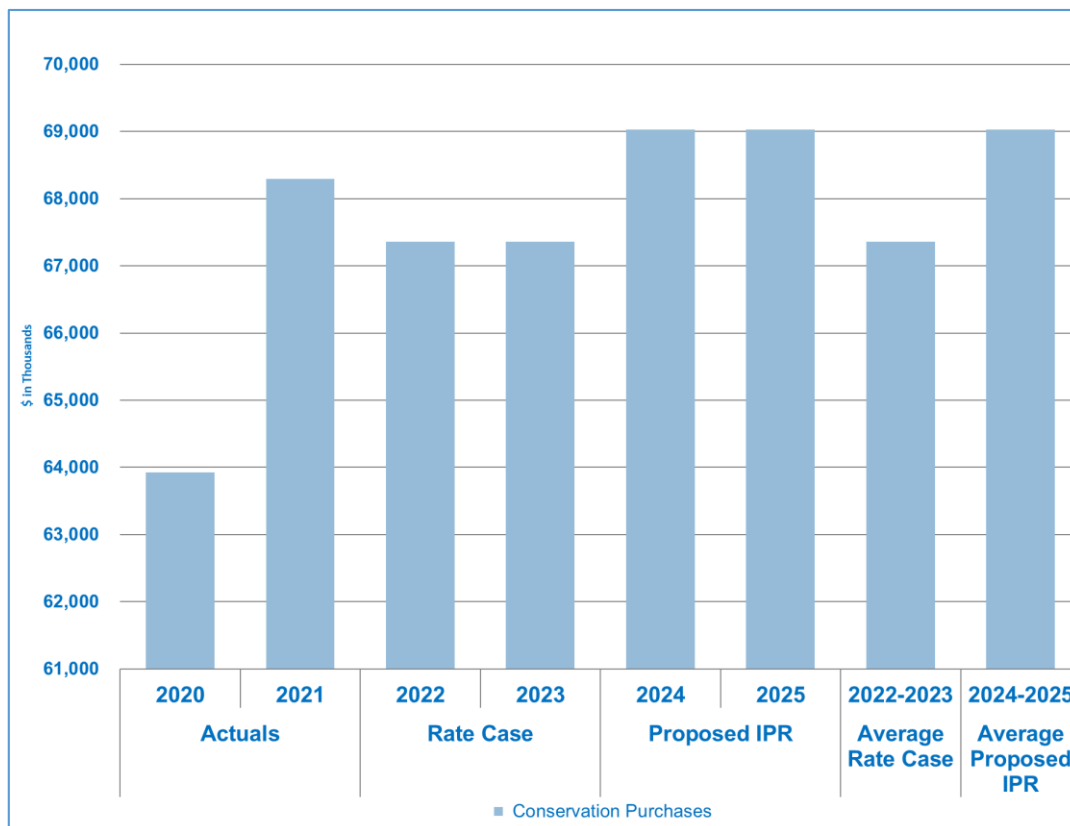


Figure 6: Power Commercial Activities, Expense Overview

Table 9 Power Commercial Activities: Energy Efficiency, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Conservation Purchases	63,929	68,293	67,357	67,357	69,027	69,027	67,357	69,027
Total	63,929	68,293	67,357	67,357	69,027	69,027	67,357	69,027

The Commercial Activities program includes all resource acquisitions and sales of power, including bulk trading activities, long-term requirements power sales, and energy efficiency acquisitions. The internal costs associated with this program are included in Section 3.4.

When acquiring resources to meet its firm power load obligations, such as the Regional Dialogue power sales contract, the Northwest Power Act requires BPA's administrator to first consider and acquire all cost-effective energy efficiency, consistent with the Northwest Power and Conservation Council's Power

Plan. Preliminary results from BPA's 2022 Resource Program suggest BPA should acquire 112 aMW of cost-effective conservation over the FY 2024 and FY 2025 timeframe in its least-cost portfolio.

Conservation Purchases

The projected cost of conservation purchases includes the cost of Energy Efficiency Incentives (EEI) and Energy Smart Reserved Power (ESRP). BPA customers locally develop a broad array of energy saving measures and programs to serve their needs and those of their consumers. Under the Energy Conservation Agreements, BPA acquires energy savings from customers through EEI payments based on utility-reported energy conservation. We project a small increase to the EEI costs. Changes in portfolio composition (e.g., the loss of inexpensive lighting measures) and a need to acquire a larger proportion of higher-cost savings (e.g., HVAC and weatherization) create some risk in BPA's ability to achieve forecast energy savings.

BPA's ESRP program provides funds for energy efficiency resource development through efficiency projects at federal agency facilities, such as fish hatcheries, transmission substations, or Reclamation irrigation projects that draw power directly from the federal dams. By improving efficiencies at these facilities, BPA increases the amount of power available to supply its utility customers. We project lower costs compared to the prior rate period to better reflect program potential and to support augmentation of EEI funding.

BPA will work collaboratively with its customers to administer its existing Energy Conservation Agreements as well as continue to obtain input from the public and the Council regarding BPA's resource needs and conservation acquisition strategies.

3.4 Non-Generation Operations

Non-generation operations comprise 7% of Power IPR program costs. Figure 14 provides an overview of these expenses, while Table 13 presents them in more detail.

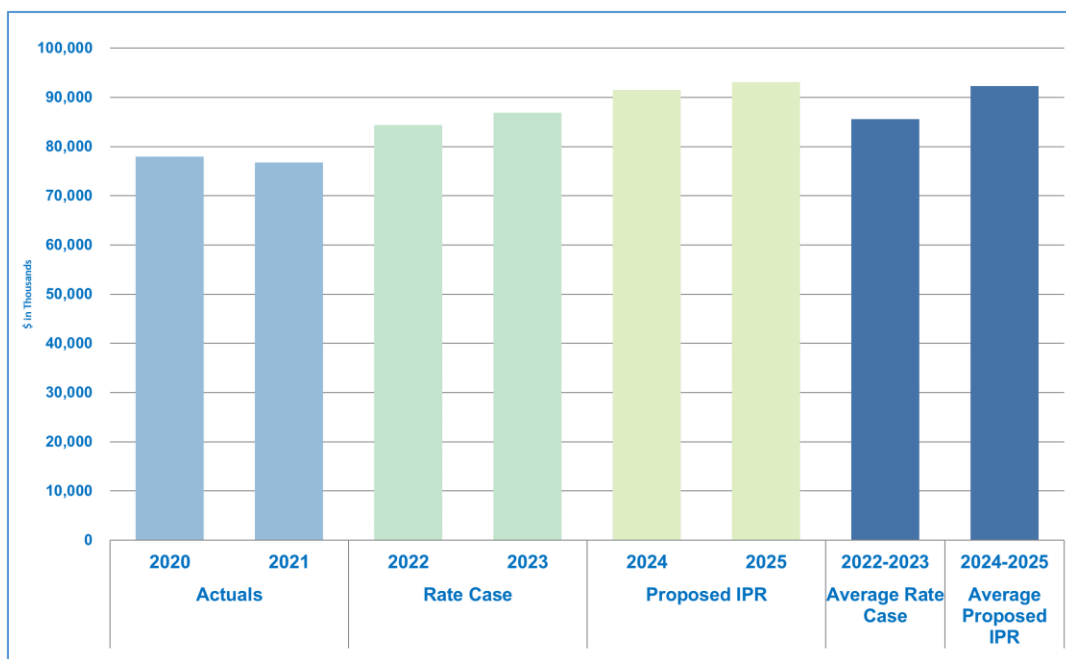


Figure 7: Power Non-Generation Operations, Expense Overview

Table 10: Power Non-Generation Operations, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Asset Management	5,587	5,211	4,038	4,129	4,579	4,711	4,083	4,645
Commercial Activities	22,857	21,407	14,956	15,436	26,209	27,383	15,196	26,796
Operations	33,908	34,849	38,826	40,338	43,278	43,026	39,582	43,152
Non-Generation Operations (Power Internal)	62,352	61,467	57,819	59,903	74,066	75,121	58,861	74,594
Asset Management	522	1,302	4,124	4,111	2,376	2,473	4,117	2,425
Commercial Activities	4,352	4,303	12,529	12,757	4,348	4,516	12,643	4,432
Operations	10,750	9,710	9,875	10,083	10,655	10,932	9,979	10,793
Non-Generation Operations (Enterprise Services)	15,624	15,314	26,528	26,950	17,378	17,921	26,739	17,650
Grand Total	77,977	76,782	84,347	86,853	91,445	93,042	85,600	92,244

Delivering on Power Services' mission requires internal support. Non-Generation Operations (Power internal) includes the salaries and benefits for approximately 300 Power Services employees responsible for all aspects of the business activities and processes performed by Power Services. This includes Power Services' costs for professional services, supplemental labor, travel, training and awards. Power internal support's projected costs include essential staffing and training required to fulfill BPA's commitment to provide competitive products and services along with the continued modernization of assets and system operations.

Non-Generation Operations (Enterprise Services) includes direct support received from Enterprise Services, such as IT, Finance, and Legal.

After several years of flat projected costs, managing Power Internal support costs requires continued reprioritization of workload across all aspects of this program, including staffing levels, service contracts and supplemental labor. Power staffing levels remain near all-time lows and will remain near current levels through FY 2023 in support of cost-management efforts. Projected costs for FY 2024 and FY 2025 reflect an expected small net increase in staff, consistent with BPA's workforce strategy, to support regional market developments and timely execution of post-2028 power contracts.

Consistent with the agency's strategic direction, Power will focus on initiatives and work that support BPA's efforts to provide competitive products and services, and modernization of its assets and system operations. Work will continue on the modification of the Columbia River Treaty, implementation of the CRSO EIS, marketing of surplus capacity and other products, and the constant pursuit of efficiencies in programs and processes.

3.5 Enterprise Services G&A*

Enterprise Services General and Administrative (G&A) costs make up 7% of Power IPR program costs. Figure 15 provides an overview of these expenses, while Table 14 presents them in more detail. For a description of Enterprise Services, its cost projections and drivers, see Section 5 of this document.

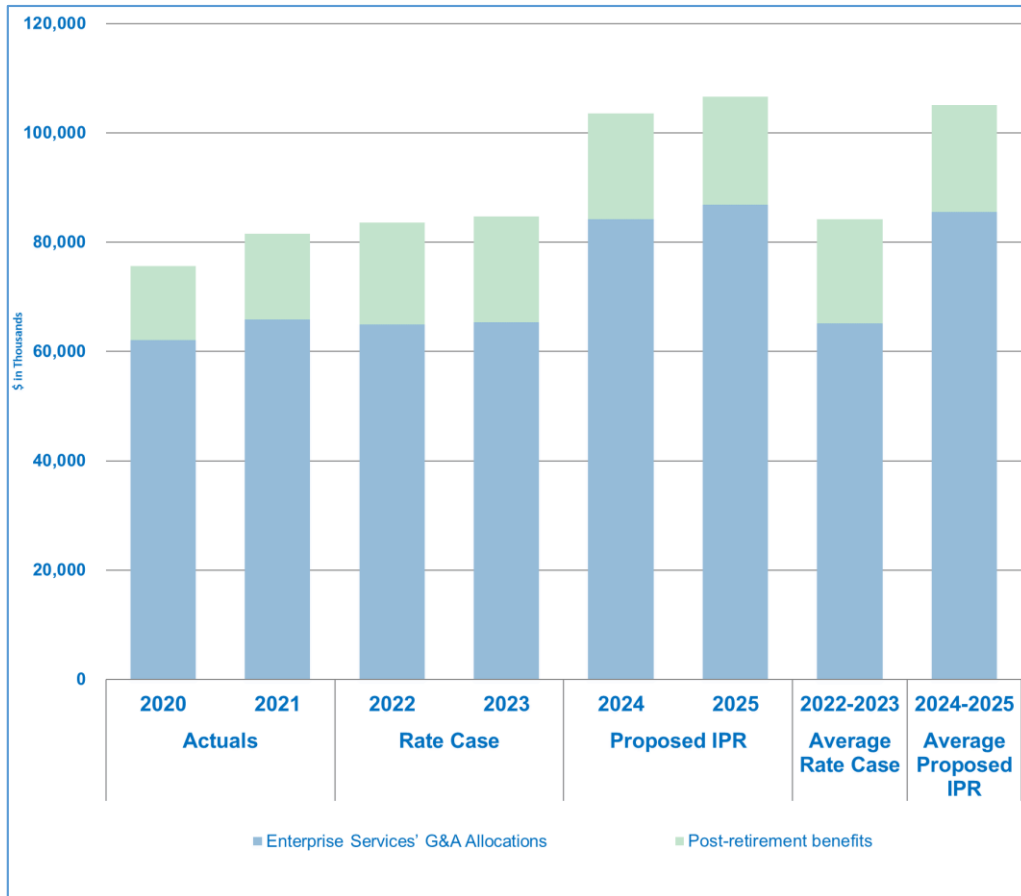


Figure 8 Power Enterprise Services G&A, Expense Overview

Table 11: Power Enterprise Services G&A, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Enterprise Services' Allocated G&A	62,125	65,839	64,937	65,336	84,220	86,819	65,137	85,520
Post-Retirement Benefits	13,496	15,736	18,666	19,354	19,310	19,844	19,010	19,577
Total	75,621	81,575	83,603	84,690	103,530	106,663	84,147	105,097

4 Transmission Services

Transmission Services is responsible for planning, designing, constructing, marketing, operating and maintaining more than 15,000 circuit miles of transmission assets in the Pacific Northwest. The projected Transmission Services costs for FY 2024 and FY 2025 supports BPA's strategic direction and builds on BPA's legacy of transmission system reliability and builds on a foundation of safety, regulatory and statutory compliance to meet Transmission customer needs efficiently and responsively.

The average age of BPA's transmission assets is approaching 50 years, and many are well past the end of their expected economic life. Transmission Services operates in an increasingly dynamic, uncertain and quickly changing environment. The organization is facing capital and expense pressures while the transmission system is aging and becoming more constrained. These conditions demand a responsive and modern approach to the way BPA positions itself commercially and how the Transmission organization aligns to deliver and capture value. BPA is adopting a more flexible, scalable, economical and operationally efficient approach to managing its transmission system to remain a competitive transmission provider. This work will ensure Transmission maintains financial strength while continuing to meet multiple statutory responsibilities and delivering the public benefits that are so valuable to the region.

Transmission Services creates value by operating a high-performance grid, enabling economic growth in the region, and providing access to federal and nonfederal resources and markets. As a dependable and responsive business partner for BPA's customers, Transmission meets compliance requirements while ensuring the continuing safe, reliable and economic operation of the transmission grid consistent with sound business principles. Enabling economic growth and providing grid access means that Transmission provides flexible products and services to meet evolving demand forecasts, impacts to energy markets, generation choices and policies.

Transmission Services applied three main goals from BPA's strategic direction to prioritize forecast spending in the FY 2024 and FY 2025 rate period: strengthen financial health; modernize assets and system operations; and meet Transmission customer needs efficiently and responsively. The agency's strategy is realized through the three major programs: Asset Management, Operations, and Commercial Activities. The Transmission programs allocate forecast costs and align resources to business outcomes that achieve objectives supporting BPA's strategy. Financial health is supported by balancing upward cost pressures against efficiencies and trade-offs. Upward pressures include price and wage inflation, and additional workload to increase customer responsiveness, maintain our asset base, modernize systems, cyber security and wildfire mitigation. Balancing factors include carefully evaluating and prioritizing hires, projects, and consolidating support workload.

Careful stewardship of Transmission's expense funds results in projected program costs that allow Transmission to accomplish its established objectives and priorities, with a goal of limiting increases to the rate of inflation. The projected costs support safety, compliance, reliability, and market transformation activities. Improvements to Transmission's asset management practices will continue.

Transmission continues to align its replacement and maintenance work streams by using processes and analytics to converge an integrated best value strategy at all levels of the organization.

Current state is interval-based maintenance with correctives initiated by internal standards and guides to drive a maintenance action. The future vision is based on more efficient gathering and use of maintenance data and equipment reliability estimations to inform risk-based planning processes.

Transmission Services will develop strategy, policies and implementation plans to enable customers' and BPA's continued participation in the Western EIM, and evaluate and potentially enable participation in other emerging markets that involve the use of BPA's transmission system.

Finally, the Transmission capital cost projection reflects the transition from a period of large system expansion to one dominated by smaller, sustain projects. As noted in the introduction, capital cost projections included in tables throughout this initial IPR document are the midpoint numbers for the transmission asset category, which include the 10% reduction from the planned capital cost in their SAMP. The other asset categories within Transmission cost projections have not been adjusted from their SAMP levels. Projected capital execution for this rate period is approximately \$400 million direct spend per year. There is a growing volume of projects funded by customers in advance (PFIA) reflecting developer and utility demand on project resources, which can compete with other capital work.

Figure 16 shows each program within Transmission, and its percent of the total average.

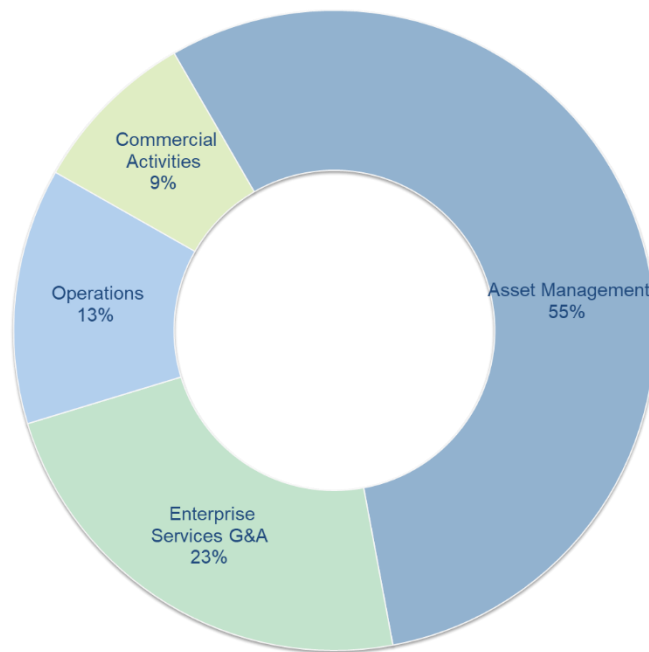


Figure 9: Transmission Services Expense Summary by Program

Table 15 shows the IPR costs by major program, capital costs, and other costs estimated in IPR but not described in detail. The table reflects the actuals for FY 2020 and FY 2021, the projected costs for the BP-22 rate period, and the projected costs for the BP-24 rate period. Table 16 shows forecast capital spending for 2026 through 2033.

Table 12: Transmission Services Summary

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Asset Management	261,109	277,367	286,951	290,281	324,988	333,897	288,616	329,443
Commercial Activities	59,457	50,406	56,470	57,541	49,549	50,854	57,005	50,201
Operations	68,600	66,219	64,284	65,598	75,118	78,595	64,941	76,857
Enterprise Services G&A	99,671	109,165	103,195	104,681	136,034	139,965	103,938	137,999
Costs Described in IPR Total	488,838	503,157	510,899	518,101	585,690	603,310	514,500	594,500
Transmission Asset Category	206,737	258,722	312,000	327,000	344,700	346,500	319,500	345,600
PFIA	15,626	10,916	45,000	50,000	37,800	45,000	47,500	41,400
Other Asset Categories Within Transmission	25,969	20,000	84,780	86,990	148,000	130,610	85,885	139,305
Transmission Indirects	61,400	61,283	53,390	54,072	59,432	59,788	53,731	59,610
Corporate Indirects	47,564	47,701	46,042	46,337	54,815	56,563	46,189	55,689
AFUDC	13,704	14,040	15,937	15,845	16,500	16,500	15,891	16,500
Capital Total	370,999	412,662	557,149	580,244	661,247	654,961	568,696	658,104

Table 13: Transmission Services Capital Outyear Summary

(\$thousands)	Capital Outyears							
	2026	2027	2028	2029	2030	2031	2032	2033
Transmission Asset Category	355,500	360,000	363,375	353,475	356,850	353,700	354,600	355,707
PFIA	45,000	45,000	45,000	45,000	45,000	31,275	29,700	28,215
Other Asset Categories Within Transmission	95,194	68,556	74,693	72,350	71,074	71,881	71,797	74,227
Transmission Indirects	60,147	60,508	60,871	61,236	61,604	61,973	62,345	62,719
Corporate Indirects	57,919	59,269	60,614	61,947	63,252	64,540	65,800	67,066
AFUDC	16,500	16,500	16,500	16,500	16,500	16,500	16,500	16,500
Capital Total	630,260	609,833	621,053	610,508	614,280	599,869	600,742	604,434

4.1 Asset Management

Asset management makes up 55% of Transmission IPR program costs. Figure 17 provides an overview of these expenses, while Table 17 presents them in more detail.

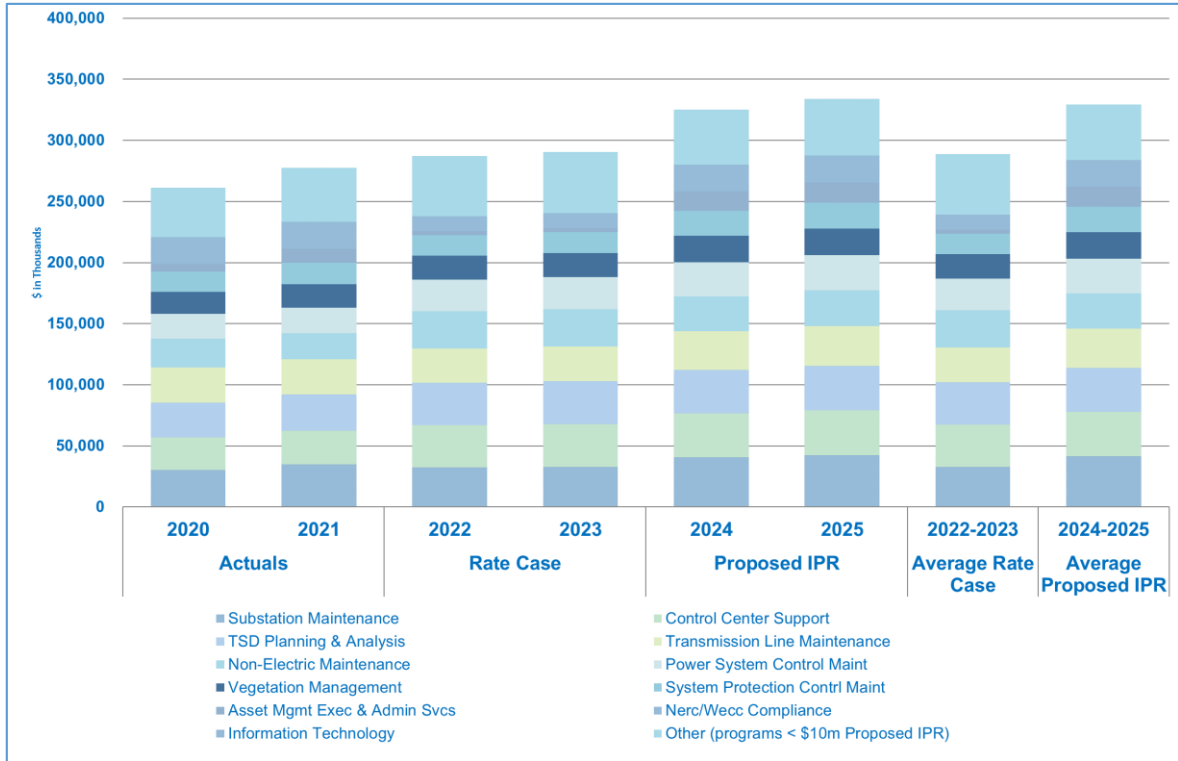


Figure 10: Transmission Asset Management, Expense Overview

Table 14: Transmission Asset Management, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Substation Maintenance	30,145	34,969	32,355	32,926	40,491	42,490	32,640	41,490
Control Center Support	26,935	27,212	34,588	34,882	36,279	36,802	34,735	36,541
TSD Planning & Analysis	28,109	29,940	34,694	35,022	35,499	36,100	34,858	35,799
Transmission Line Maintenance	29,053	28,636	27,868	28,279	31,412	32,703	28,074	32,058
Non-Electric Maintenance	23,319	21,546	30,708	30,880	28,578	29,059	30,794	28,819
Power System Control Maint	20,384	20,903	25,696	26,076	27,850	28,791	25,886	28,321
Vegetation Management	17,964	18,864	19,796	19,846	21,820	21,921	19,821	21,871
System Protection Control Maint	16,811	17,646	16,548	16,916	20,493	21,107	16,732	20,800
Asset Mgmt Exec & Admin Svcs	5,934	11,520	3,454	3,482	16,010	16,586	3,468	16,298
Nerc/Wecc Compliance	11,429	10,708	8,096	8,140	10,921	11,104	8,118	11,013
Information Technology	10,528	11,102	3,972	4,037	10,517	10,927	4,004	10,722

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
System Maintenance Management	8,417	10,095	8,641	8,760	7,807	8,071	8,700	7,939
Capital To Expense Transfer	3,178	6,101	5,846	5,846	6,468	6,492	5,846	6,480
Row Maintenance	6,507	4,617	8,208	8,275	6,102	6,175	8,241	6,139
Pollution Prevention & Abatement	4,000	4,124	4,779	4,896	5,636	5,796	4,838	5,716
Logistics Services	6,289	7,244	5,847	5,902	5,381	5,771	5,874	5,576
Environmental Policy/Planning	1,629	1,638	2,838	2,935	3,235	3,341	2,887	3,288
Technical Training	2,658	2,628	2,915	2,960	2,890	2,977	2,938	2,933
Security Enhancements Expense	620	664	3,031	3,031	2,581	2,591	3,031	2,586
Eng Line Rating	2,459	2,571	2,343	2,356	2,377	2,402	2,350	2,390
Research & Development	2,632	2,639	2,752	2,794	1,731	1,756	2,773	1,743
Aircraft Services	968	813	948	962	774	792	955	783
Joint Cost Maintenance	116	176	46	47	132	141	47	136
Asset Mgmt Enterprise Svcs	544	659	910	958	4	4	934	4
Heavy Mobile Equipment Maint	199	219						
KSI Asset Management Exp	281	131	71	72	-	-	71	-
Total	261,109	277,367	286,951	290,281	324,988	333,897	288,616	329,443

Table 18 lists Transmission Asset Management’s forecast capital requirements through FY 2033

Table 15: Transmission Asset Management, Capital Detail

(\$thousands)	Proposed IPR		Capital Outyears							
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Transmission Asset Category	344,700	346,500	355,500	360,000	363,375	353,475	356,850	353,700	354,600	355,707
PFIA	37,800	45,000	45,000	45,000	45,000	45,000	45,000	31,275	29,700	28,215
Supporting Asset Categories Within Transmission	148,000	130,610	95,194	68,556	74,693	72,350	71,074	71,881	71,797	74,227
Transmission Indirects	59,432	59,788	60,147	60,508	60,871	61,236	61,604	61,973	62,345	62,719
Corporate Indirects	54,815	56,563	57,919	59,269	60,614	61,947	63,252	64,540	65,800	67,066
AFUDC	16,500	16,500	16,500	16,500	16,500	16,500	16,500	16,500	16,500	16,500
Capital Total	661,247	654,961	630,260	609,833	621,053	610,508	614,280	599,869	600,742	604,434

4.1.1 Capital

Figure 18 provides an overview of Transmission’s recent, current and forecast capital expenses. Table 19 presents forecast capital expenses in more detail.

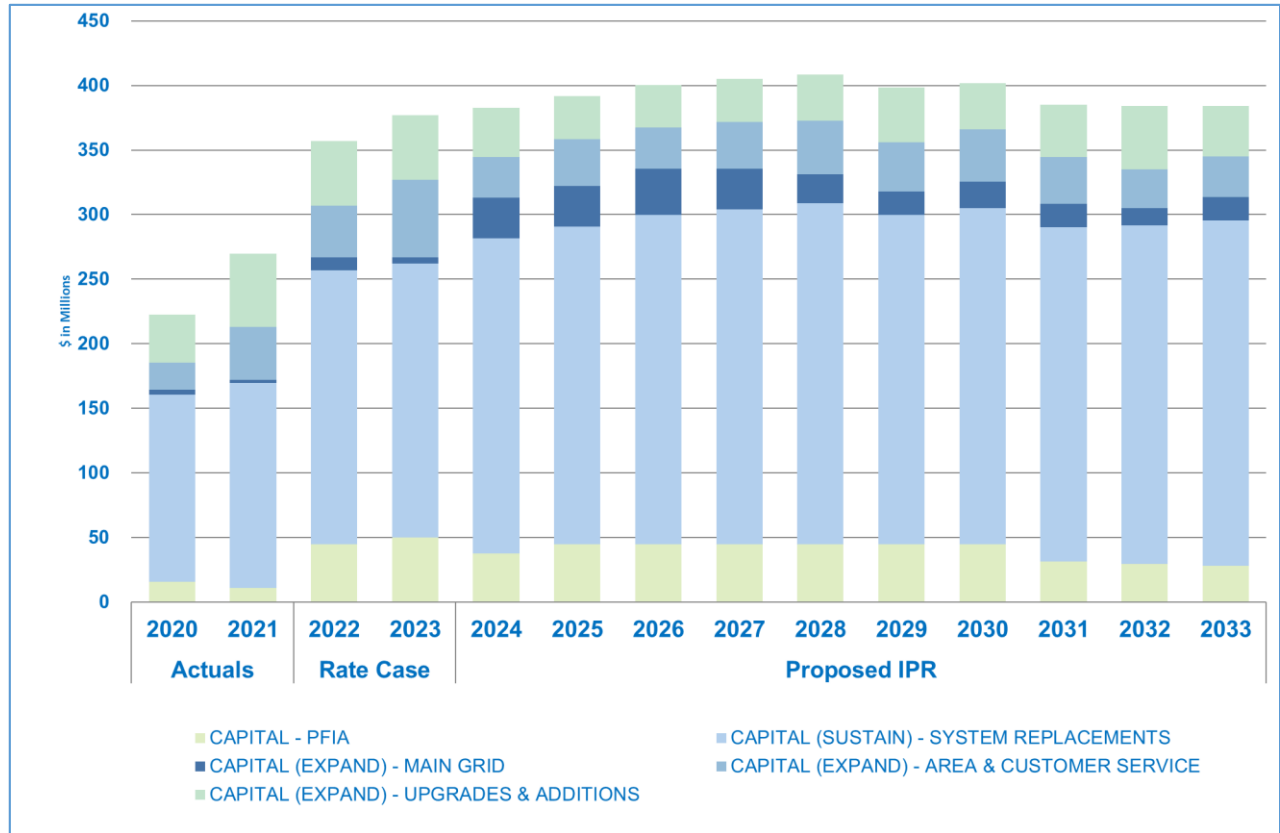


Figure 11: Transmission Capital Summary

Table 16: Transmission Capital Detail

(\$thousands)	Proposed IPR		Future Fiscal Years							
Capital Expand (CapEx)	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Main Grid	31,500	31,500	36,000	31,500	22,500	18,000	20,250	18,225	13,500	18,000
PFIA	37,800	45,000	45,000	45,000	45,000	45,000	45,000	31,275	29,700	28,215
Area and Customer Service	31,500	36,000	31,500	36,000	41,400	38,475	40,500	36,000	29,700	31,500
Upgrades & Additions	37,800	33,300	33,300	33,300	35,888	42,300	36,000	40,500	49,500	38,907
Total Capital Expand	138,600	145,800	145,800	145,800	144,788	143,775	141,750	126,000	122,400	116,622
Capital Sustain										
System Replacements	243,900	245,700	254,700	259,200	263,587	254,700	260,100	258,975	261,900	267,300
Total Capital Sustain	243,900	245,700	254,700	259,200	263,587	254,700	260,100	258,975	261,900	267,300
Total Capital	382,500	391,500	400,500	405,000	408,375	398,475	401,850	384,975	384,300	383,922

Transmission Services manages nearly \$5 billion in net book value of assets for substation, transmission line, and communication and control center infrastructure that is critical to the Northwest economy. This remarkable engine of the Northwest economy spans approximately 300,000 square miles and includes more than 15,000 circuit miles of transmission lines, 3,500 miles of fiber, over 260 substations, 732 telecommunication facilities and two control centers. These assets deliver electric power, directly or indirectly, to a population of more than 12 million through four main product categories:

- Transmission service to regional utilities and merchant entities.
- Generation and line & load interconnections.
- Interregional transfers of capacity and energy.
- Ancillary services, such as regulation and load following services.

Due to compliance needs and customer-driven interconnections that serve renewable generation and large load requests (e.g., data centers), transmission system expansion is on the horizon to ensure system reinforcement needs are met. When feasible, Transmission partners with local utilities to implement non-wires solutions to mitigate these demands through technology alternatives such as power flow control devices, capacitor banks and other tools.

BPA's Transmission business continues to develop and mature Criticality, Health and Risk (CHR) methodologies and capabilities. CHR has advanced in its analytics for substation and line assets, with comprehensive health scoring and the ability to apply the Reliability and Safety criticality dimensions at an asset level. The CHR data is utilized to inform Transmission's SAMPs and Transmission continues to refine CHR data to improve decision-making.

Transmission also continues to refine its 10-year capital forecast by further maturing its asset management program; business capabilities; and decision-making across the asset life cycle to bring efficiencies and opportunities for greater savings. Transmission mitigates challenges (both internal and external) to respond and adapt to an evolving industry and changing environment, while providing transparency to capital investment plans and methodologies throughout the IPR process documented in Transmission's SAMP.

Program Objectives in 2024 and 2025

Long-Term Objectives

Objective 1: Risk-Based Planning & Prioritization

Transmission continues to support the agency's strategic plan objective to administer an industry-leading asset management program. Understanding and applying asset CHR is the widely accepted best practice for capital planning and prioritizing investments, including maintenance.

CHR is primarily applied in decision-making around a subset of sustain assets. The subset is based on assets data currently in Cascade, an industry-standard application, with the most mature data. Ultimately, CHR will be an additional support tool to be used in prioritization decisions across expand and sustain. This includes robust implementation of each of the three components – Criticality, Health and Risk – for each program area (with any exceptions documented).

Objective 2: Financial Effectiveness

Managing the life-cycle costs of federal assets is in direct alignment with BPA's strategic direction. This is central to maintaining the long-term value and reliability of the power and transmission systems.

Transmission is continuing to expand its execution capability through the Secondary Capacity Model (SCM) to support replacement of aging assets and expanding the system to meet current and future needs of the region. Transmission is also embarking on efforts to align asset information throughout the information life cycle, so that decisions are based on current and complete asset information data. This alignment would also allow Transmission to perform life-cycle costing.

Programs for 2024-2025

FY 2024 and FY 2025 projected costs reflect investment in the Vancouver Control Center (VCC) and the Grand Coulee Switchyard Asset Transfer (GCSAT).

Vancouver Control Center

The Vancouver Control Center (VCC) will enable BPA to improve operational resiliency through a facility that will incorporate modern building codes and seismic performance standards. The new facility will improve physical security and regulatory compliance through the implementation of Interagency Security Committee guidelines. More efficient workflow and better coordination resulting in faster response time and improved employee productivity will be accomplished by co-locating dispersed Transmission Operations and Transmission Technology Services staffing and functions. Benefits include the direct oversight of control center management in an operations-focused environment; aligning system grid control capabilities with emerging markets, advanced technologies, and regulations; and the integration of modern audio visual systems to improve operational visibility and real-time grid response and control. The VCC capital cost forecasts for the Transmission Asset Category included in this IPR are spread across multiple fiscal years – FY 2024 through FY 2029.

Grand Coulee Switchyard Asset Transfer

For 45 years, the possibility of transferring ownership of Grand Coulee Switchyard equipment from Reclamation to BPA Transmission has been considered. BPA is pursuing the potential of ownership transfer through the Grand Coulee Switchyard Assets Transfer (GCSAT) Program. The acquisition would consist of three substations (Grand Coulee 500, 230, and 115/11.95 kV). Reclamation would retain all land, but would grant BPA the land rights to own, operate and access the switchyards and associated equipment.

The GCSAT would enable BPA to have direct operational control for the assets and would eliminate existing compliance and reliability risks. BPA would be able to directly assign capital dollars to spend on Grand Coulee assets depending upon Transmission's SAMP. Reduction in Reclamation's overhead costs is expected; prioritization and execution of projects would be fully contained inside Transmission's portfolio of work; and total projected costs of maintaining the assets would decrease. BPA Transmission would have the ability to improve reliability by having direct control of maintenance, operations and replacements as necessary.

In closing, the projected Transmission capital costs reflect the transition from a period of large system expansion to one dominated by smaller, sustain projects, with the exception of the VCC and customer integration projects. Transmission continues to mature the asset management program to execute the right work, at the right cost, at the right time.

4.1.2 Expenses

A robust asset management strategy and a system maintenance plan are essential for BPA to meet its responsibility to serve the majority of the Northwest region's high-voltage needs. The assets contained within the asset management strategy and the system maintenance plan deliver electric power to more than 12 million people through transmission service; regional utilities; generation; line and load interconnections; interregional transfers of capacity and energy; and ancillary services, such as regulation and load-following services.

O&M Strategy

Transmission continues to align its replacement and maintenance work streams by using processes and analytics to converge an integrated best value strategy at all levels of the organization.

The current state is interval-based maintenance with correctives initiated by internal standards and guides that drive a maintenance action. The future vision is based on more efficient gathering and use of maintenance data and equipment reliability estimations to inform risk-based planning processes.

Program Objectives in 2024 and 2025

Transmission Services' asset management program objectives continue to align with BPA's direction, with cost projections focused on sustaining optimal asset performance and right-sizing program forecast costs to ensure reliability and meet customer needs. Improvements in Transmission's asset management capabilities allows for optimization of maintenance intervals and inform best value decision-making across the asset life cycle based upon a designed level of reliability and asset value. In addition, by allowing for new ways of looking at BPA investments and how best to mitigate risk(s) across the system, integration between capital and maintenance decisions continue to be developed for financial effectiveness.

Transmission Services' asset management maintenance programs continue to prioritize safety and occupational health to empower employees and contractors to recognize and address safety issues. Emergency maintenance ensures continued overall system reliability requirements and public safety. Preventative maintenance on the BPA transmission system provides reliable and sustainable assets that meet current and future agency needs, ensuring that performance condition standards comply with applicable regulations while minimizing life cycle costs.

BPA projection of costs include increases in Transmission asset management expense above BP-22 levels, which are expected to provide sufficient resources to perform core maintenance, workplace safety and strategy-driven process improvements. The increases will also help minimize forecast cost gaps that would have reduced BPA's capacity to perform preventative maintenance and process improvements for programs such as: mission critical information technology, telecommunications strategy, cybersecurity, compliance and wildfire mitigation.

4.2 Commercial Activities

Commercial activities comprise 9% of Transmission IPR program costs. Figure 19 provides an overview of these expenses, while Table 20 presents them in more detail.

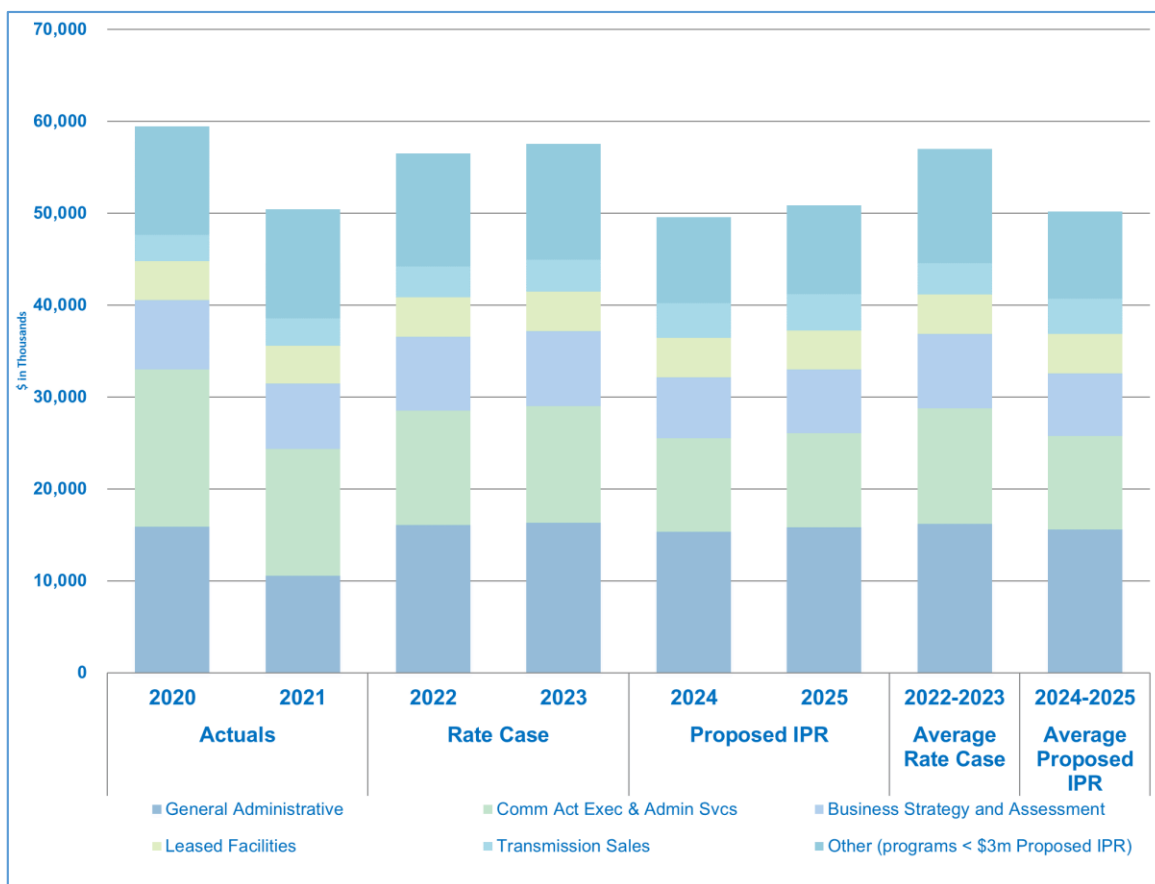


Figure 19: Transmission Commercial Activities, Expense Overview

Table 20: Transmission Commercial Activities, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
General Administrative	15,885	10,504	16,069	16,314	15,326	15,806	16,192	15,566
Comm Act Exec & Admin Svcs	17,114	13,860	12,429	12,670	10,165	10,238	12,549	10,201
Business Strategy & Assessment	7,550	7,088	8,043	8,175	6,671	6,924	8,109	6,798
Leased Facilities	4,232	4,107	4,296	4,296	4,278	4,278	4,296	4,278
Transmission Sales	2,874	3,043	3,402	3,483	3,793	3,946	3,443	3,869
Legal support	2,675	3,064	2,638	2,783	2,797	2,913	2,711	2,855
Contract Management	2,359	2,133	2,139	2,182	2,745	2,849	2,161	2,797
Comm Actvts Entrprse Svcs	4,721	4,527	5,045	5,171	2,686	2,789	5,108	2,738
Sched-Reservations	731	692	934	954	769	791	944	780

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Non-Between Business Line Ancillary Services	145	203	268	268	268	268	268	268
Reliability Demand Response/Redispatch	152	6	298	305	50	50	301	50
Settlement Agreements	291	484	1	1	1	1	1	1
Transmission Billing	728	695	907	939	-	-	923	-
Total	59,457	50,406	56,470	57,541	49,549	50,854	57,005	50,201

The Transmission Commercial Activities Program provides direction to standardize and streamline products, rules and strategies to satisfy BPA’s commercial objectives and customer needs. The program strives to optimize current and future opportunities and efficiencies to support more than 300 customers, resulting in average annual revenues of \$1.2 billion.

The Commercial Activities Program has four objectives, described below, that outline a broad set of activities and targets that encompass all aspects of the commercial function. These objectives cover three types of work:

- Core work, such as contract administration, billing, and rate and tariff development.
- Efficiency work, such as initiatives to improve the quality or speed of transactions.
- Strategy work, which includes work to support grid modernization and participation in the Western EIM, such as the EIM settlements function.

The Commercial Activities Program also funds a broad range of administrative activities that support the internal operations of the Transmission business line, such as:

- The Student Training Program.
- Hourly firm, short-term available transfer capability, and general and administrative costs.
- Chief of Staff staffing.
- Non-between business line ancillary costs that support the balancing reserves purchased through a third party.

Program Objectives in 2024 and 2025

The Commercial Activities Program’s four objectives are:

Design and Offer High Quality Services. This objective focuses on using market analysis and customer input to develop, define and deploy improvements to BPA’s product and service offering. This program considers opportunities across both long-term and short-term transmission service as well as interconnection service, including line and load requests.

Align Service Performance Expectations. This objective focuses on the performance of BPA’s commercial processes and systems. Not only should the commercial processes and systems be clear and transparent to customers, but they must also align with BPA’s open access transmission tariff, its rate schedule and any other regulatory guidance, such as that from NAESB, NERC, WECC and CAISO.

Capture Revenue and Mitigate Commercial Risk. This objective focuses on a few different areas that tie together. Improvements to short-term and long-term market inventory calculations as well as improved forecasting of existing long-term rights will inform the development of updated revenue targets, which will then be captured through accurate billing. Transmission's current average annual revenues are around \$1.2 billion, with monthly billing of just over \$80 million. BPA recognizes the importance of effective contract administration, robust commercial systems to support market transactions, and accurate and efficient billing to support customer business models and maximize efficiencies within BPA.

Manage the Business Interfaces with Customers. This objective includes BPA account executives as well as the digital interface for customers to conduct their day-to-day business with BPA. From accessing bills to study results to contracts, customers will be able to access their information consistently and closer to real time. Leveraging the agency enterprise portal initiative, Transmission will have an opportunity to better organize information used by customers to evaluate and analyze their business with BPA.

The major projects and objectives of the Commercial Activities Program also align with BPA's strategic direction to meet transmission customer needs and sustain financial strength. In addition to aligning with the agency's strategic direction, the Commercial Activities Program has taken into consideration how it will interface, influence or be influenced by major agency initiatives such as joining the Western EIM. BPA commenced its BP/TC-24 pre-proceeding workshops in April with proposed scope, timeline and process to give customers an opportunity to collaborate with BPA on rate and tariff issues before the start of the formal proceedings. In addition, BPA has been conducting a public process regarding the implementation of a concurrent loss return service before the start of the BP-24 rate period.

BPA continues to evaluate how its commercial services and products are supported across the agency. This action will identify opportunities for efficiencies and ensure that those services and products are delivered with the highest level of customer service and quality control.

The current work in the Commercial Activities Program is intended to improve business processes and efficiencies. Our projected costs ensure that BPA staff, systems and processes can continue to identify and effect efficiencies across Transmission's commercial activities. The modest investments reflected in these projected costs will create both short-term and long-term benefits through policy clarity, system and process efficiencies, and maximizing revenues.

The ability to run the Commercial Activities Program optimally relies on many factors outside of the typically defined commercial function. Impacts to functions such as outage management, field offices ensuring equipment is properly maintained, and back office capabilities to stand up new functions to support future market participation, can create unforeseen impacts to the commercial function and resultant revenues and customer service levels.

The projected costs will give customers data-driven transparency, such as the data to make choices of services and placement of generation. These projected cost levels will also support ongoing operations and maintenance of the commercial systems and will provide continued support of the customer engagement processes.

4.3 Operations

Operations comprise 13% of Transmission IPR program costs. Figure 20 provides an overview of these expenses, while Table 21 presents them in more detail.

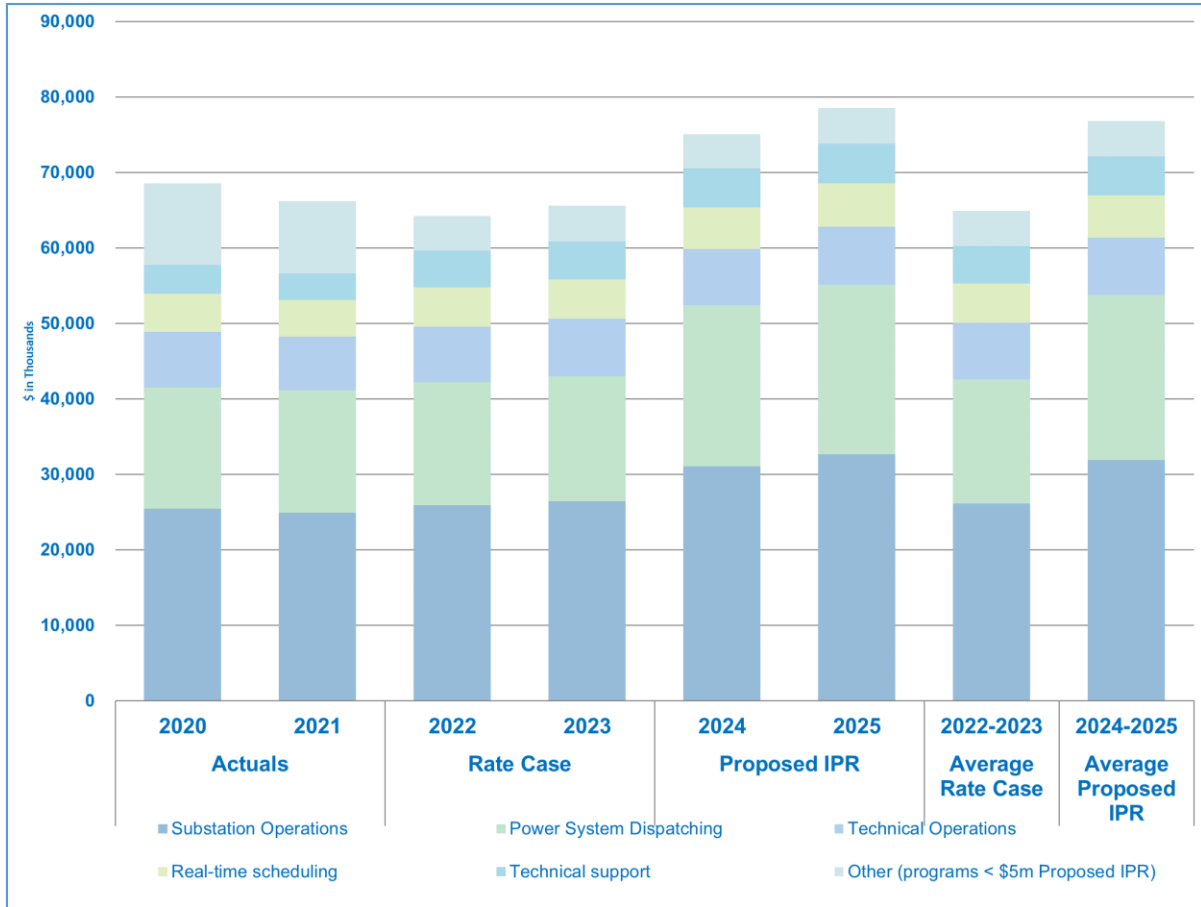


Figure 20: Transmission Operations, Expense Overview

Table 17 Transmission Operations, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Substation Operations	25,466	24,910	25,917	26,445	31,097	32,699	26,181	31,898
Power System Dispatching	16,092	16,251	16,273	16,590	21,324	22,435	16,431	21,880
Technical Operations	7,319	7,144	7,401	7,547	7,463	7,695	7,474	7,579
Real-time scheduling	5,090	4,833	5,161	5,274	5,518	5,714	5,217	5,616
Technical support	3,798	3,456	4,899	5,004	5,111	5,273	4,952	5,192
Operations Exec & Admin Svcs	1,624	1,458	170	175	3,811	3,960	172	3,885
Operations Enterprise Svcs	1,006	956	1,319	1,368	580	605	1,343	592
Strategic Integration	1,326	1,542	1,340	1,352	80	80	1,346	80

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Grid Modernization	6,646	5,582	1,261	1,289	78	78	1,275	78
Transmission System Operator	88	55	261	265	55	55	263	55
Scheduling After-the-fact	152	31	144	147	3	3	146	3
Pre-scheduling	-	-	138	141	-	-	139	-
Trans Grid Mod Incremental	(8)	-	-	-	-	-	-	-
Total	68,600	66,219	64,284	65,598	75,118	78,595	64,941	76,857

The Transmission Operations Program has multiple subprograms that support the core components of the BPA's Strategy by enhancing the safe and reliable delivery of power to BPA's customers:

The substation operations subprogram supports the continuity of operations through work standards; control of energized access, including physical and cybersecurity requirements impacting system reliability and safety.

The technical operations subprogram develops and manages all near-term system operating limits and total transfer capabilities to support the safe, reliable and open-access operation of the transmission system. Technical Operations also provides operating and mitigation plans for all system conditions to support real-time operation of the interconnected system. The subprogram provides technical support for planned outages, remedial action schemes, automatic generation control, balancing authority operations, renewable resource integration, and disturbance and event monitoring and reporting.

The power system dispatching subprogram provides for the operation and management of two regional control centers providing dispatch and control services. As the balancing authority and transmission operator, this program monitors and manages the integrated power system to ensure safe, reliable and compliant operations, including the direction of real-time actions during normal, planned and emergency conditions. This program also provides outage coordination for internal BPA and external stakeholders and provides training programs to maintain NERC-certified dispatch staff.

The remaining 10 subprograms are: executive and administrative services, power system dispatching, pre-scheduling, real-time scheduling, scheduling after-the-fact, strategy integration, substation operations, technical operations, technical support, and the transmission system operator program. These programs fully support BPA's strategic planning objectives by enhancing the safe and reliable delivery of power to BPA's customers.

Program Objectives in 2024 and 2025

Power System Dispatch will continue to reliably dispatch the power system by providing service to BPA's customers, providing interregional interconnections, improving substation operations continuity and maintaining electrical reliability. Technical Operations projected costs will ensure that the Operations Program performs the studies to verify the system can be operated reliably for overall visibility of the bulk electric system and maintain public safety. The program objectives include regulatory requirements and training to implement current and emerging NERC and federal cybersecurity requirements, along with

required training. Operations is committed to continuously improving our operational tools and processes that were delivered through BPA's Grid Modernization Program.

Impacts of Projected Costs

The projected costs reflect mitigating a number of risks, including delayed hiring or leaving positions vacant to balance wage inflation. Reduced contractor support positions could hamper engineering knowledge transfer, training of real-time operations, needed EIM support, operations control support to maintain automatic generation control and renewable requirements, change management, administrative support, and business analytics. These functions may then shift onto other personnel, reducing their applied hours of expertise in their field. Finally, contracted engineering studies by technical operations may be reduced, limiting the system states that could be studied through the technical operations staff. Cutting studies could result in increased conservatism or built-in margins of error, reducing transmission flexibility.

The projected costs include mitigating some these risks, as well as sustaining existing efforts in the Operations program that increase efficiency by prioritizing work, planning demand and flattening management structure to help absorb upward cost pressures.

4.4 Enterprise Services G&A

Enterprise Services G&A costs make up 23% of Transmission IPR program costs. Figure 21 provides an overview of these expenses, while Table 22 presents them in more detail. For a description of Enterprise Services, its cost projections and drivers, see Section 5 of this document.

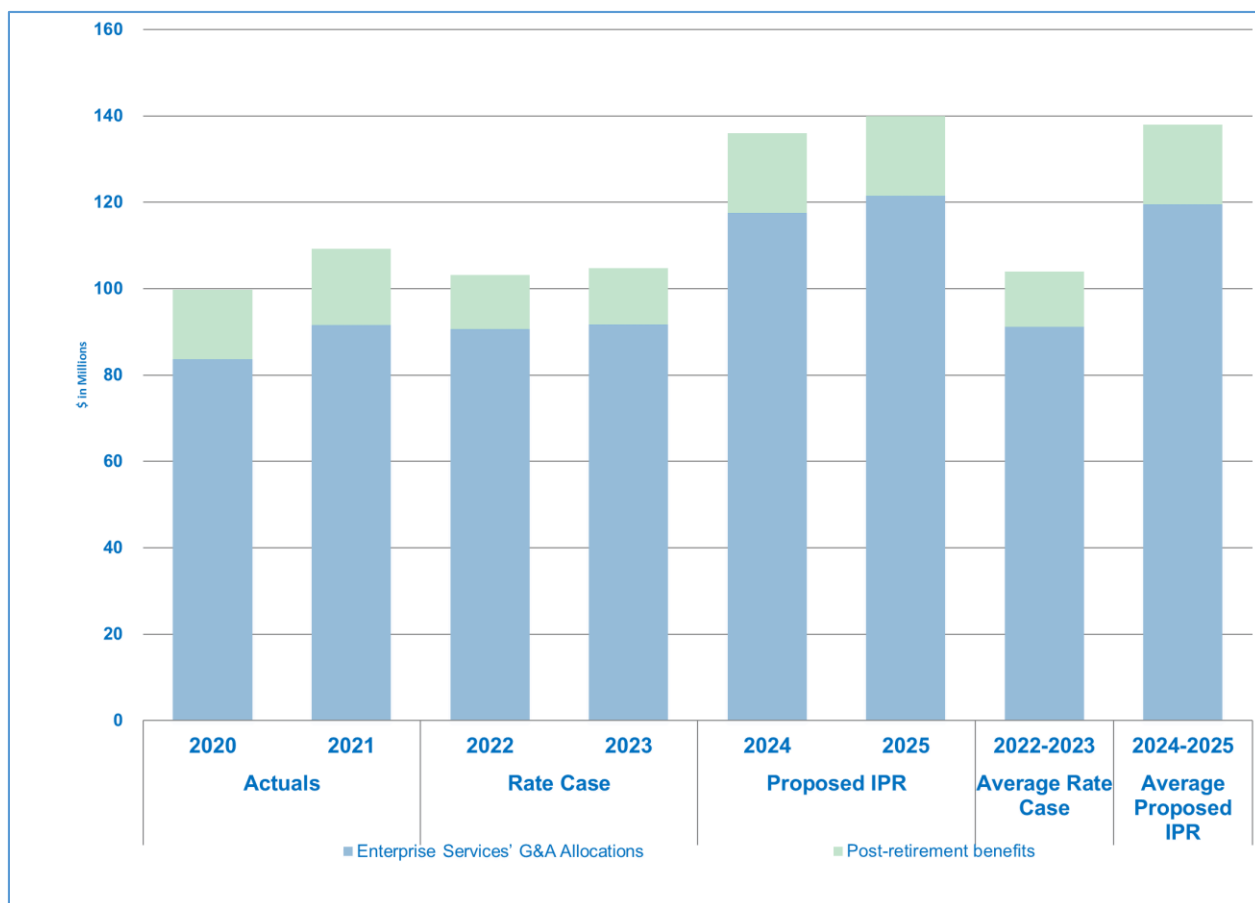


Figure 121: Transmission Enterprise Services G&A Overview

Table 18 Transmission Enterprise Services G&A, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Enterprise Services' Allocated G&A	83,693	91,535	90,589	91,730	117,564	121,495	91,159	119,529
Post-Retirement Benefits	15,979	17,629	12,607	12,952	18,470	18,470	12,779	18,470
Total	99,671	109,165	103,195	104,681	136,034	139,965	103,938	137,999

5 Enterprise Services

Enterprise Services support the Power and Transmission business line functions to ensure BPA's mission objectives are met. Enterprise Services consists of all departments not located within the Power and Transmission business units. All of the Enterprise Services' costs are reflected in the Power or Transmission revenue requirement, either as an allocation or direct charge.

The mission of Enterprise Services is to enable BPA to meet its mission objectives and strategic initiatives by delivering high-quality essential services through the following core functions:

- Safety – Administer a safety program that provides a safe workplace for all BPA employees.
- Security – Provide physical security, cybersecurity and continuity of operations.
- Compliance – Maintain comprehensive regulatory compliance that reasonably assures compliance with laws and regulations.
- Legal – Provide legal expertise and representation.
- Supply Chain Services (NS) – Provide procurement, logistics, warehousing, supplemental labor management, and fleet services.
- IT – Provide secure and reliable telecommunications and business process automation for all BPA organizations.
- Business Transformation Office – Provide strategic programmatic approach for portfolio management, enterprise architecture framework and services, and leadership to cross-agency initiatives.
- Finance – Provide financial services to ensure a clean audit opinion, manage BPA's debt and investment portfolios, provide analytical services, and develop commercial and federal budgets.
- Communications – Foster support, knowledge and awareness of BPA's activities, achievement and value to the Pacific Northwest.
- Human Resources – Develop, engage and empower a talented and diverse workforce to meet BPA's regional commitments.
- Strategy – Provide strategic direction so that BPA can modernize its systems and processes to remain competitive.
- Facilities – Provide the equipment and materials for BPA staff to complete their work.
- Billing – Provide customer support services.

Figure 22 shows each function within Enterprise Services, and its percent of total average projected costs.

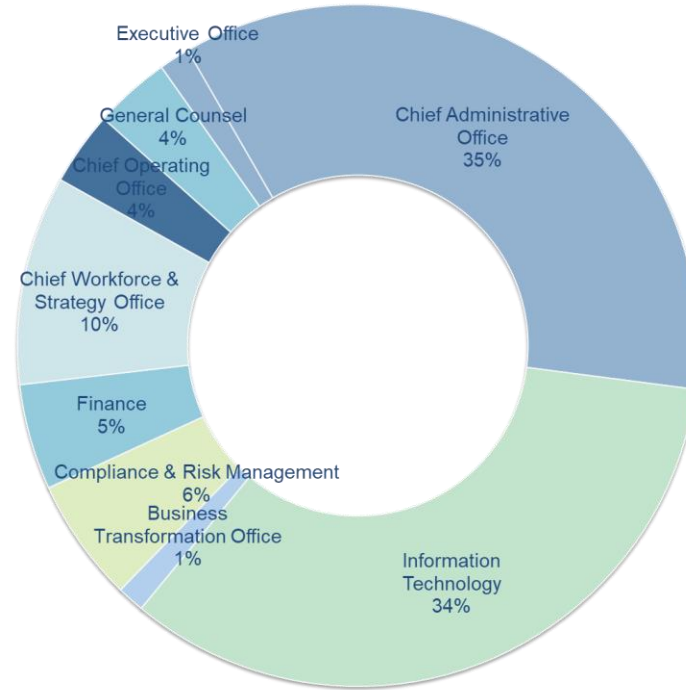


Figure 13 Enterprise Services Expense Summary by Department

Table 23 shows the Enterprise Services expenses, and reflects the actuals for FY 2020 and FY 2021, the BP-22 rate period projected costs, and the projected costs for the BP-24 rate period. Table 24 presents proposed and future Enterprise Services capital costs.

Table 19: Enterprise Services Expense Summary

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Information Technology	95,815	101,792	100,746	101,241	121,021	125,985	100,994	123,503
Workplace Services	46,573	51,103	51,155	51,354	61,436	62,131	51,254	61,783
Supply Chain Services	35,795	37,646	38,098	38,098	39,470	40,845	38,098	40,158
Security & Continuity Of Ops	12,138	13,029	11,996	12,119	17,810	18,199	12,058	18,004
Safety	5,737	5,438	6,329	6,475	6,520	6,755	6,402	6,637
Program Management Office	3,060	3,381	3,214	3,292	2,157	2,247	3,253	2,202
Undistributed Reduction	-	-	(3,400)	(3,400)	-	-	(3,400)	-
Chief Administrative Office Subtotal	199,118	212,388	208,138	209,178	248,414	256,162	208,658	252,288
Business Transformation Office	11,205	10,827	17,065	17,168	4,617	4,816	17,117	4,717
Compliance, Audit, & Risk Management	17,693	19,672	18,320	18,850	20,956	21,763	18,585	21,359
Finance	14,825	14,927	14,857	14,839	17,861	18,666	14,848	18,263
Chief Workforce & Strategy Office	25,214	24,990	26,587	27,143	35,448	36,767	26,865	36,107

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Chief Operating Office	12,517	14,546	13,633	14,067	12,517	12,962	13,850	12,739
General Counsel	10,394	10,946	11,784	11,784	13,205	13,205	11,784	13,205
Administrator	1,976	500	607	619	5,288	5,288	613	5,288
Enterprise Services' Total	292,941	308,798	310,992	313,649	358,306	369,628	312,320	363,967

Table 20 Enterprise Services Capital Summary

(\$thousands)	Proposed IPR		Capital Outyears							
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Facilities	106,000	87,800	55,800	31,200	35,500	32,900	31,100	31,400	30,800	32,700
IT	23,100	22,384	24,400	22,500	23,200	23,665	24,214	24,769	25,323	25,893
Fleet	14,000	14,200	14,200	14,400	14,400	14,200	14,200	14,200	14,200	14,200
Security	18,300	21,000	15,375	15,760	16,153	16,556	17,000	17,425	17,860	18,307
AFUDC	4,902	5,258	4,394	3,576	3,751	3,767	3,727	3,886	3,908	4,001
Capital Total	166,302	150,642	114,169	87,436	93,004	91,088	90,241	91,680	92,091	95,101

5.1 General Allocation of Enterprise Services Costs

Enterprise Services comprises the costs necessary to provide essential services to operate the agency. Enterprise Services' costs are reflected within the Power and Transmission revenue requirements that are used for setting rates. These costs are directly charged to a program within the business line if there is a direct connection, and the remaining costs are allocated using cost allocation pools.

5.1.1 Enterprise Services General Allocation Methodology

The cost allocation pools are collections of project costs from the Enterprise Services organizations and are comprised of projects with similar cost allocation drivers. The drivers are used to determine the allocation rates. The makeup of the cost pools and project costs are reviewed biannually to accurately reflect cost causation and assess the continued relevance of the allocation rates. Organizations may charge into one or more cost pools, when not charging directly to Power or Transmission. The description of products and services provided by these organizations can be found in the individual organizations' summaries.

Allocation rates are set with the goal of making methodologies:

- Driven by data and rooted in cost causation. Defensible in a rate-setting environment.
- Defensible with internal and external auditors.
- Cost-effective and practical to implement.
- Direct and simple, facilitating understanding and transparency.
- Used to develop rates that will be implemented and unchanged on an annual basis.

Costs can be allocated either evenly to Power Services and Transmission Services, or based on specific cost drivers, such as level of effort determined by labor hours worked by a corporate function.

- Even allocations: Traditional general and administrative (G&A) costs: Cost pools that serve the general purpose of BPA support functions and are split 50-50 to Power and Transmission.
 - Functions are general in nature and are not directly affected by changes in traditional cost drivers (e.g., federal employee and supplemental labor levels, projected cost levels, etc.).
 - Collection of costs or measurement of driver is cost prohibitive – it is uneconomical to attempt more precise allocations.
 - The general nature of some corporate work, such as maintaining agency wide IT infrastructure, and the difficulty in determining its causal relationship to business line benefactors. This prevents a clear distinction for directly assigning those costs.
- Directed allocation pools: Cost pools that can be distributed with more precision, based on specific cost drivers and are not split 50-50 to Power and Transmission.
 - Activities are managed and budgeted centrally, but functions can be linked to cost drivers and can change based on those drivers.
 - Direction of effort studies or other means may be used to allocate in a cost-effective manner.

Power's revenue requirement includes the portion of Enterprise Services costs for Power and Fish & Wildlife within their IPR costs. Transmission's revenue requirement includes a portion of Enterprise Services

costs within IPR program-costs, and a portion within IPR capital for the Enterprise Services capital overhead indirect allocation rate.

Enterprise Services' G&A allocation rates for the BP-24 initial IPR are reflected in Table 25.

Table 25: G&A Allocation Summary Information for BP-24

Cost Pool	Enterprise Services Project	Power Services G&A Expense		Transmission Services G&A	
		Power	F&W	Expense	Capital
Equal Effort					
	Corporate Executive, Planning & Gov.	40%	10%	30%	20%
	Finance	↓	↓	↓	↓
	Legal				
	Risk Management			↓	↓
	BTO Portfolio Management			50%	0%
	Forecasting and Contract Management			↓	↓
	IT Cross Agency Application Assets			↓	↓
	Metering and Billing			↓	↓
	Public Affairs			↓	↓
	Technology Innovation	↓	↓	↓	↓
Extra Effort					
	Supply Chain Agency Purchasing	28%	7%	38%	27%
	IT Corporate Application Assets	↓	↓	65%	0%
	IT Administration & System Policy			↓	↓
	Supply Chain Management & Admin	↓	↓	↓	↓
Labor Hours - BFTE & Supplemental Labor					
	IT Infrastructure Asset	16%	4%	47%	33%
	Safety	↓	↓	↓	↓
	Security	↓	↓	↓	↓
Labor Hours - BFTE Only					
	Human Resources	18%	4%	46%	32%
	Agency Services Awards	↓	↓	78%	0%
Workplace Services					
	Workplace Services	30%	7%	37%	26%

5.2 Business Transformation Office

The Business Transformation Office (BTO) is responsible for the successful development and execution of cross-agency initiatives designed to ensure BPA achieves mission objectives and strategic direction. The BTO provides resources, structure and standardization in the areas of program and project management, change management, business analysis and enterprise architecture.

In the past, the BTO projected costs included two main elements: key strategic initiative (KSI) and core funding for ongoing agency activities. The KSI element funded the incremental costs (e.g., contractors and IT systems) for the agency's KSIs and the core funding supports the BTO's existing staff and capabilities. In FY 2024 and FY 2025, BPA is forecasting costs that sustain the BTO's core funding only. The projected cost of KSIs is now included in the projected costs of the sponsoring organizations. Table 26 shows BTO expenses, including actuals for FY 2020 and FY 2021, the BP-22 rate period projected costs, and the projected costs for the BP-24 rate period.

Table 21: Business Transformation Office, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Enterprise Services' Allocated G&A	9,485	9,167	14,934	14,957	4,617	4,816	14,946	4,717
Transmission Direct Support	1,490	1,254	1,066	1,106	-	-	1,086	-
Power Direct Support	230	407	1,066	1,106	-	-	1,086	-
Total	11,205	10,827	17,065	17,168	4,617	4,816	17,117	4,717

Program Objectives in 2024 and 2025

BPA's 2018-2023 Strategic Plan identified modernizing federal power and transmission system operations and supporting technology as a strategic objective. The strategic plan describes the actions BPA should take to become more competitive and responsive to customer needs and to leverage and enable industry change through modernized assets and system operations. Much of this work has been, or will be, completed through the Grid Modernization KSI through FY 2023. Through the Grid Modernization effort, BPA joined the Western EIM on May 3, 2022. Twelve projects supporting EIM and the broader Grid Modernization effort are complete and 22 projects are on track for completion by the end of FY 2023. Any Grid Modernization projects not completed by the end of FY 2023 will be supported as appropriate by BTO staff and funded via the owning organization.

Upon completion of the Grid Modernization KSI, existing BTO staff will begin developing and supporting a new key strategic initiative known as Finance Modernization. This initiative is still in the scoping phase at this time. This effort is expected to be a portfolio project focused on Finance systems, processes and upgrades designed to modernize BPA's finance function. The Finance Modernization Initiative is strategic in nature and will be designed with an Enterprise Architecture lens. This will likely include establishing a BPA-wide desired end-state and vision. Projects will be developed and prioritized based upon the vision, and focused on modernizing Finance process and systems. The BTO will provide enterprise-wide portfolio and program management support. Finance will provide subject matter expertise and will fund any specific Finance Modernization project costs.

5.3 Chief Administrative Office

The CAO provides policy and strategic guidance concerning key BPA internal operations and provides executive-level leadership for strategic direction and policy-making.

The business units that report directly to the CAO and that provide agency essential services are:

- Program Management Office
- IT
- Safety
- Security & Continuity of Operations
- Supply Chain
- Workplace Services

The CAO is projecting an increase in its BP-24 IPR forecast costs when compared to the BP-22 Rate Case. The projected increase in costs has several strategically significant purposes that align with BPA's core mission:

- Core IT system priorities:
 - Software licensing, which requires annual maintenance contracts, with fees that range from 10% to 30% of the original software purchase price, depending on the vendor and products.
 - Growing risks and requirements for cybersecurity.
 - Increased costs for maintaining the current enterprise system and new systems, such as the Grid Modernization projects.
 - Emerging IT projects to enable agency systems growth and upgrades.
- Construction support for necessary facilities updates and replacements at Grand Coulee.
- Improving continuity of operations of core facilities by:
 - Securing building lease rates with GSA that will add cost stability for the next decade.
 - Meeting local storm water cost needs as more municipalities begin to charge BPA.
 - Maintenance/repairs of field facilities, consistent with Asset Management Plans.
- Meeting the demands for safety programs, assessments, inspections and training and the increased transmission construction programs in accordance with BPA's Strategic Plan.
- Meeting the requirements for core physical security and continuity of operations.
- Tools and equipment required to service BPA's fleet as we transition to electric vehicles as required by federal mandates.
- Implementing Executive Order 14057 – Catalyzing Clean Energy Industries and Jobs through Federal Sustainability.

Since FY 2016, the CAO has successfully bent the cost curve by setting and meeting internal cost reduction targets each fiscal year through diligent cost-management and elimination of discretionary spending. As labor costs continue to rise, the CAO intends to implement cost-savings where possible, while maintaining programs critical to the success of the enterprise.

Building off the cost-management success over the last several rate periods, the CAO will continue to actively manage costs by investing in core infrastructure and key processes that maximize the value of BPA's resources over the next rate period and in future rate periods.

An emerging area of focus for BPA is the implementation of Executive Order 14057. The new order commits federal agencies to carbon neutrality by 2050 – an ambitious target that will require high levels of collaboration and resourcefulness from organizations across BPA. The implementation of this target will be led by the Sustainability Office under the CAO’s leadership. The Sustainability Office will build off the successes and expertise that have been in place since 2012, when it began leading projects across BPA to lessen the agency's environmental impacts.

Figure 23 shows each of the major functions within the CAO, and its percent of total average projected costs.

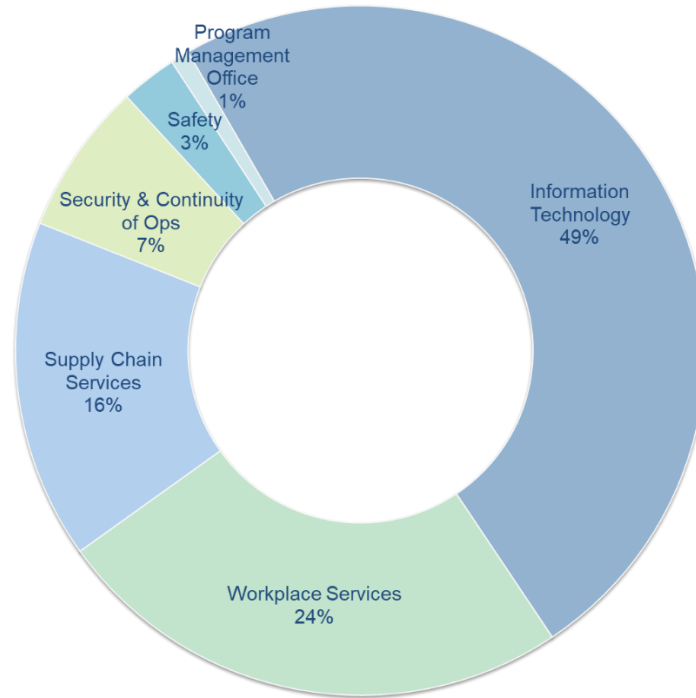


Figure 23: Chief Administrative, Expense Overview

Table 27 shows the IPR costs by major function. The table reflects the actuals for FY 2020 and FY 2021, the BP-22 rate period projected costs, and the projected costs for the BP-24 rate period.

Table 22: Chief Administrative Office Summary

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Information Technology	95,815	101,792	100,746	101,241	121,021	125,985	100,994	123,503
Workplace Services	46,573	51,103	51,155	51,354	61,436	62,131	51,254	61,783
Supply Chain Services	35,795	37,646	38,098	38,098	39,470	40,845	38,098	40,158
Security & Continuity Of Ops	12,138	13,029	11,996	12,119	17,810	18,199	12,058	18,004
Safety	5,737	5,438	6,329	6,475	6,520	6,755	6,402	6,637
Program Management Office	3,060	3,381	3,214	3,292	2,157	2,247	3,253	2,202
Undistributed Reduction	-	-	(3,400)	(3,400)	-	-	(3,400)	-
Total	199,118	212,388	208,138	209,178	248,414	256,162	208,658	252,288

5.3.1 Safety Program Overview

BPA’s Safety program supports the agency’s mission and safety core value to provide a workplace that is free from all recognizable safety and health hazards through advice, information and support to the BPA workforce. The program engages with executives, agency leaders and workforce members to build a strong safety culture across BPA. Additionally, it implements a robust safety and health system by collecting industrial exposure data and monitoring industry improvements in the safety discipline. The program ensures compliance with the DOE Federal Employee Occupational Safety and Health (FEOSH) program by reviewing and updating programs and procedures. Safety also conducts inspections, investigations and appraisals, and recommends safe work practices and procedures. The Safety organization reviews contractors’ site-specific safety plans and performs worksite audits in compliance with host utility responsibilities. The Safety organization also recommends and tracks approved corrective actions and ensures compliance with applicable medical surveillance requirements.

The Safety program collaborates with executive management and the workforce to effectively implement a robust safety and health program to ensure that accident and injury prevention remain a priority. These issues and strategies are managed through several BPA-wide safety committees, including the Executive Safety Committee, Office Occupational Safety & Health Committee, Central Safety and Health Committee, Contractor Safety Committee and Safety Proctor Team.

Safety also seeks continuous improvement by benchmarking with industry peers, conducting workload studies and engaging in independent third-party program reviews. Table 28 presents details of BPA’s Safety Program costs.

Table 23: Safety, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Enterprise Services' Allocated G&A	5,721	5,425	6,329	6,475	6,472	6,703	6,402	6,587
Transmission Direct Support	11	14	-	-	48	52	-	50
Power Direct Support	4	-	-	-	-	-	-	-
Total	5,737	5,438	6,329	6,475	6,520	6,755	6,402	6,637

Program Objectives in 2024 and 2025

For the BP-24 IPR period, the Safety Program will focus on executing BPA’s updated 2024-2028 safety strategic plan and building internal bench strength. Projected increased program costs are associated with additional personnel required to successfully execute our expanded mission due to the Secondary Capacity model to support the increased transmission capital program delivery, COVID testing program and the strategic focus points. Strategic focus points for this rate period include:

- Integration of safety as a core value throughout the employee life cycle, from recruitment to retirement.
- Implementation of a completed Safety and Occupational Health Manual.

- Expansion of required training and integration of a Position Hazard Analysis with Learning Management System.
- Maturation of our ANSI Z10 Safety Management System.
- Expansion of contract oversight capabilities.
- Implementation of industrial hygiene monitoring plans.
- Maturation of industrial hygiene program.
- Improving staff expertise.

Continued efforts will focus on safety by design and the use of technology to gain efficiencies and improve the end-users' ability to access information at the jobsite.

5.3.2 Security and Continuity of Operations Overview

Security and Continuity of Operations comprises three program offices: Continuity and Emergency Management, Physical Security, and Personnel and Information Security. The objective is to protect BPA's people and assets by executing the following program areas:

- Continuity and emergency management
- Physical protection and control
- Personnel identity verification
- Employee onboarding
- Employee badging and card key access control
- Foreign national visits and assignment
- Insider threat workgroup
- Information protection
- Operations security
- Export controls

These program areas support the operational and compliance mandates of several authorities, including NERC CIP standards, DOE policy, Office of Personnel Management (OPM) requirements, Homeland Security, FIPS, Department of Commerce (Export Control), and Counterintelligence.

BPA's Security Program develops and executes the Security asset category SAMP for the protection of BPA's critical assets in accordance with regulatory compliance. The multi-year plan ensures financial investments in physical protection measures and electronic systems to protect BPA's people and critical infrastructure used to deliver power to ratepayers in the Pacific Northwest. This supports BPA's mission objectives and strategic direction.

BPA's Security Program ensures BPA's workforce is properly vetted, physical security operations are stable, continuity and disaster planning is achieved, and BPA's sensitive information is protected. These activities underpin BPA's core value of safety while supporting the agency's mission objectives and strategic direction.

BPA's Continuity and Emergency Management program ensures the agency is prepared for all-hazard events and is capable of quickly responding to and recovering from continuity events. Core components include the Incident Command System training and exercise program, and Continuity program management and advancement (Business Impact Analysis, Continuity Plan exercises and other program elements). Continuity and Emergency Management program must result in BPA's ability to adequately

respond to emergency situations and meet our mission essential functions in the event of a significant continuity event.

Table 29 presents details of BPA’s recent, current and future Security and Continuity of Operations costs. Table 30 provides a look at forecast capital costs.

Table 24: Security & Continuity of Operations, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Enterprise Services' Allocated G&A	11,560	12,388	9,571	9,694	15,985	16,374	9,633	16,179
Transmission Direct Support	578	640	2,425	2,425	1,825	1,825	2,425	1,825
Total	12,138	13,029	11,996	12,119	17,810	18,199	12,058	18,004

Table 30: Security & Continuity of Operations, Capital Detail

(\$thousands)	Proposed IPR		Capital Outyears							
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Capital total	18,300	21,000	15,375	15,760	16,153	16,556	17,000	17,425	17,860	18,307

Program Objectives in 2024 and 2025

BP-24 Security capital objectives include executing on the multi-year capital portfolio investment plan spanning FY 2015 to FY 2032 to bring all critical field sites into compliance with CIP 006 and 014 standards. Investments include fencing, physical barriers and electronic systems. Security enhancements at Grand Coulee will also be required, post-acquisition.

The investment also includes funds for the wholesale replacement of failing and/or obsolete systems, which have reached the end of their functional life cycle, including systems installed 12 or more years ago. Replacement systems provide enhanced monitoring capabilities, improved design elements, reduce many manual processes and decrease occurrences of human error.

BP-24 Security expense objectives include:

- Maintaining current levels of security operations.
- Maintaining the current level of protection while planning for an increase in contractual labor costs.
- Planning for an increase in system maintenance costs to keep up with device failures while capital reinvestments get underway.
- Planning for expected increases in OPM costs for background investigations to keep the BPA workforce vetted in accordance with law and policy.
- Planning for the expected rollout of a government-wide program for protecting Controlled Unclassified Information.
- Planning for resources to support the Business Impact Analysis findings and mitigation strategies for Continuity Resilience initiatives.

5.3.3 Supply Chain Services Overview

Supply Chain is the enterprise provider of procurement, materials management, logistics services, supplemental labor workforce management, and fleet management. The group develops and executes strategies to provide internal business partners managed solutions to secure equipment, materials, supplemental labor and a wide variety of contract services. Supply Chain also ensures processes meet policy, ethics, risk and compliance requirements, and monitors and manages all supply chain functions across BPA.

Table 31 provides an overview of recent, current and forecast Supply Chain Service expenses, while Table 32 provides a look at forecast capital costs.

Table 31: Supply Chain, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Enterprise Services' Allocated G&A	6,827	7,364	8,391	8,761	8,591	8,791	8,576	8,691
Transmission Direct Support	28,942	30,268	29,707	29,337	30,879	32,054	29,522	31,467
Power Direct Support	26	14	-	-	-	-	-	-
Total	35,795	37,646	38,098	38,098	39,470	40,845	38,098	40,158

Table 25: Supply Chain, Capital Detail

(\$thousands)	Proposed IPR		Capital Outyears							
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Capital Total	14,000	14,200	14,200	14,400	14,400	14,200	14,200	14,200	14,200	14,200

Supply Chain Services consists of five major functions: Fleet Services, Logistics and Transportation, Supplemental Labor Management Office, Contracts and Strategic Sourcing, and Technology and Strategic Planning. Specialized services offered by Supply Chain include:

- Contracting for services and equipment
- Warehousing of inventory
- Inventory management and order fulfillment
- Transportation services
- Fleet maintenance and management
- Asset utilization and investment recovery
- Personal property management
- Purchase card administration
- Processing and disposal of hazardous materials
- Managing supplemental labor
- Information systems management as it applies to supply chain

Specifically, the responsibilities of each functional area are:

Fleet Services acquires, repairs, and performs maintenance on BPA-owned and leased mobile equipment. The assets consist of approximately 1,400 heavy mobile equipment and specialty vehicles, 975 leased passenger vehicles, 150 generators and 700 components of equipment.

Logistics and Transportation manages, warehouses and safeguards BPA's \$120 million emergency, new construction and maintenance inventory. Logistics processes orders and ships to field sites, as well as performs reverse logistics. Investment recovery and hazardous waste operations process unneeded material through selling, transferring, donating or disposing.

The **Supplemental Labor Management Office** monitors, administers and manages the use of supplemental labor throughout the agency, and also offers support and assistance in administering BPA's contract workforce. This organization is responsible for ensuring effective and efficient utilization of supplemental labor resources costing \$140 million per year.

Contracts and Strategic Sourcing provides contracting services to BPA's internal organizations culminating in over 5,000 contracts/purchase orders being awarded each year with an annual spend of over \$700 million and administration of \$2.5 billion of in-flight contracts.

Technology and Strategic Planning provides strategic planning, analytics and technology support. This organization manages initiatives and provides agency-wide support for material cataloging, personal property and vendor management, as well as provides business support for the 25 Supply Chain-centric applications.

Fleet Capital Program

Fleet Services manages BPA-owned and leased mobile equipment, including a diverse range of assets from passenger vehicles to railcars and stationary generators. The assets are comprised of approximately 2,698 assets and 700 components ranging from light to heavy duty vehicles, emergency generators, and construction, mobile and material handling equipment. Approximately 1,580 assets are BPA-owned and approximately 983 are leased from the General Services Administration. The net value of BPA-owned assets is approximately \$90 million.

Fleet's mission is to provide effective and efficient services to internal customers by investing in system operations that will allow us to better collect and store asset information that will help BPA make business decisions. In doing so, BPA can streamline purchasing and maintenance practices while meeting the business needs. The goal of the program is to optimize and modernize BPA's fleet assets to move from a 24-year replacement schedule to a 20-year replacement schedule. This effort will help reduce the costs of maintaining an aging fleet and increase the availability of assets to meet our Transmission customers' needs.

Program Objectives in 2024 and 2025

Supply Chain costs are projected to marginally increase from BP-22 to BP-24. Supply Chain will continue to deliver on the core business of procurement, materials management, logistics services and fleet management while implementing cost-savings opportunities and working with internal customers to improve processes and procedures across BPA.

Fleet's mission is to provide the correct equipment at a reasonable cost through a 20-year procurement cycle. Fleet coordinates with customers to optimize the size and capacity of the assets through multiple

strategies, including lease, rental and procurement options. As assets are replaced more frequently, BPA will experience a reduction of expenses through fewer technician hours and fewer services required for operations and maintenance.

Fleet Management’s goals include providing an 85% in-service rate (availability) in a manner that is cost-effective, safe, in compliance with regulatory requirements and supports BPA’s daily operations.

5.3.4 Workplace Services Overview

Workplace Services, also referred to as Facilities, manages \$1.3 billion of assets comprised of control centers, control houses, radio stations, warehouses and administrative offices. While most facilities directly support Transmission Services, many also enable other facets of BPA business, including Power Services and the full range of Enterprise Services, including Environment, Fish & Wildlife, Compliance and Finance. The Facilities SAMP supports BPA operations by providing quality support services and full life-cycle management of assets in accordance with BPA strategic goals.

Table 33 provides an overview of recent, current and forecast Workplace Services expenses, while Table 34 provides a look at forecast capital costs.

Table 26: Workplace Services, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Enterprise Services' Allocated G&A	30,077	36,224	26,207	26,293	39,918	40,330	26,250	40,124
Transmission Direct Support	16,496	14,154	24,948	25,061	21,518	21,801	25,005	21,660
Power Direct Support	-	725	-	-	-	-	-	-
Total	46,573	51,103	51,155	51,354	61,436	62,131	51,254	61,783

Table 27: Workplace Services, Capital Detail

(\$thousands)	Proposed IPR		Capital Outyears							
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Capital total	106,000	87,800	55,800	31,200	35,500	32,900	31,100	31,400	30,800	32,700

Program Objectives in 2024 and 2025

Facilities will focus on sustainment and recapitalization efforts to minimize safety and operational risks over the next 10 years. Currently, 70% of the Facilities portfolio is in need of elevated levels of maintenance, repair or replacement, which represents an increased risk to safety and operations. The strategies and initiatives outlined in the Facilities SAMP seek to manage these risks through three asset management objectives:

- Provide safe, healthy and professional workspaces for BPA personnel.
- Enable reliable, efficient and flexible operations of all BPA organizations.
- Maximize the value of BPA facilities while minimizing risk.

The Facilities' program will measure progress against these objectives with the tracking of portfolio Facility Condition Index scores for assets. Investment and maintenance will prioritize actions to maintain personnel safety and essential business while minimizing the degradation of essential facilities assets. Sustainment activities will focus on providing preventative maintenance and repair, while recapitalization activities will include the restoration, modernization or replacement of facilities. With safety and operational reliability as guiding tenets, Facilities will judiciously manage risks while delivering prudent and cost-effective solutions that maximize value.

5.4 Information Technology Overview

Information Technology (IT) has overall responsibility and accountability for BPA’s information technology-related programs (excluding those related to grid operations), develops and supports agency-wide business automation, and provides governance, planning and standards for the agency’s information technology activities. IT-related programs include maintenance of assets covering telecommunications components, network circuits, servers, storage devices, desktop systems, printers, copiers, phone systems and software, including applications provided as Software-as-a-Service (SaaS). Software assets are further categorized as critical business systems, enterprise business systems and task systems. Critical business systems must operate around the clock to enable power marketing and transmission scheduling functions; enterprise business systems allow BPA to manage its staff, finances, facilities, supply chain, transmission assets and services such as managing circuits and work planning services; and task systems are small web-based applications that enable BPA staff to perform work more efficiently.

Table 35 provides an overview of recent, current and forecast IT expenses, while Table 36 provides a look at forecast capital costs.

Table 28 Information Technology, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Enterprise Services' Allocated G&A	80,170	84,847	88,928	89,427	103,693	107,948	89,177	105,820
Power Direct Support	6,128	6,571	6,288	6,147	7,058	7,346	6,217	7,202
Transmission Direct Support	9,517	10,374	5,531	5,667	10,271	10,690	5,599	10,481
Total	95,815	101,792	100,746	101,241	121,021	125,985	100,994	123,503

Table 36: Information Technology, Capital Detail

(\$thousands)	Proposed IPR		Capital Outyears							
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Capital Total	23,100	22,384	24,400	22,500	23,200	23,665	24,214	24,769	25,323	25,893

Asset Condition and Trends

Until FY 2019, new system requests were generally afforded higher priority over core-sustain efforts to meet emerging business line requirements. IT recognized that services had begun to deteriorate due to inadequate staff availability for operational support, and the growing backlog of needed age-based asset updates. Some desktop computing equipment reached eight years of service due to several deferrals of equipment refreshes, including the desktop and server operating systems. Outages began to increase in basic systems such as Exchange and cell phone services. The most urgent needs of the asset backlog are currently being mitigated through updates or replacements, but the backlog is still significant and must continue to be addressed. In FY 2019 and forward, IT placed higher priority on core-sustain efforts for systems already in place, and that practice is continuing through FY 2024 and FY 2025. DOE Enterprise Architecture has adopted standards requiring products to remain within one version behind current, which has been a stretch target for BPA for some time.

Several application upgrades supporting Grid Modernization and core business functions are underway, but more sustain work is needed in the coming years to maintain BPA's ability to continue to find efficiencies in internal processes and serve the region effectively.

IT services have a profound impact on the effectiveness and efficiency of BPA's processes and people. An IT SAMP was developed to ensure IT resources and investments are aligned with BPA's vision and strategy to maximize business value and to achieve efficiencies where possible to reduce operating costs. In support of meeting BPA's mission objectives and strategic direction, IT's objectives are centered on sustaining financial strength and modernizing assets, and IT is able to support these goals through the management of life-cycle costs and asset value.

The IT SAMP aligns investments to reduce asset performance risks to acceptable levels. Planning and investments are needed to reduce risk in delivering viable disaster recovery services for BPA's Enterprise Business Systems. The major outcomes of the IT SAMP are:

- Evolving IT infrastructure to meet emerging cybersecurity threats and providing reliable services while lowering operations and investment costs required to meet business needs.
- Meeting strategic and evolving business needs by providing business solutions that deliver demonstrable positive net value and benefits to BPA and the Pacific Northwest.
- Supporting BPA's acquisition of Grand Coulee assets, and the federal direction to consolidate and protect data centers through construction and migration to the VCC.

Between FY 2008 and FY 2019, IT capital investments delivered new business systems into production at the rate of about six new systems per year, reducing to three in FY 2020 and two in FY 2021. These new systems expanded IT's assets resulting, in net new O&M costs of 12.4% on average, due primarily to new software maintenance contracts and new support labor costs. At the same time, IT projected expense increases have not kept up with the actual rate of inflation for maintenance contracts and the cost of labor, and net new O&M costs for these systems. To help IT meet its obligations to keep BPA's automated systems secure and reliable, additional funding was approved for the BP-22 period that put the IT funding level back onto a 2% annual rise to address inflationary concerns. While necessary and helpful, the funding increase did not match actual inflation pressures, which for IT have been between 5% and 10% annually. IT has decreased its projected costs in real terms resulting in:

- Increased backlog of business-requested enhancements to existing business systems.
- Increased backlog of business capital investments.
- Limited FY 2022 projects to Grid Modernization and core sustain efforts.
- Increased backlog of open staffing positions, creating single points of failure.

IT is projecting an increase for the BP-24 IPR costs when compared to the BP-22 Rate Case to adequately fund core operations, primarily related to:

- Increases in labor costs due to inflation.
- Material increases of 10% to 30% for annual licensing fees.
- New requirements for cybersecurity compliance.
- IT projects planned for capital that also require expense to execute.
- Maintenance for new technology implementations that expanded business capabilities.

IT automation provides the agency the means to meet evolving business needs and compliance requirements and to achieve efficiencies and cost savings. The IT spending proposal represents shaped capital and expense dollars that meet known requirements and maintain asset refresh rates. Reductions below the projected costs could increase the risks impacting IT's ability to meet emerging business requirements and to fund software upgrades and infrastructure refreshes, increasing exposure to cybersecurity threats.

The cost of baseline expense in IT is primarily driven by operations and maintenance of existing IT systems, and the cost of implementing new IT systems in support of emerging business needs identified by IT customers. Projected increases in IT expense spending are driven by inflation and additional operations costs of new systems. As a rule of thumb, IT requires 20% of the total capital investment in expense to develop the business case, perform requirement gathering and analysis, perform the analysis of alternatives, and to plan the project. Once the new system is delivered into production, the net new annual operations and maintenance costs associated with the investment is 10-12% of the investment.

The projected capital costs are based on anticipated new systems and system replacements to meet business objectives. While IT has been anticipating a shift from capital to expense due to increasing adoption of cloud-based IT solutions, this trend has slowed somewhat across the federal government, with fewer than projected selections of cloud-based solutions, and portions of cloud-based solutions becoming eligible for capital funding.

Ensuring that all sustain activities adhere to the prescribed life-cycle refreshes will maintain all IT assets, all business function applications and all infrastructure in a healthy status, delivering reliable, safe and valuable assets that meet business needs.

Program Objectives in 2024 and 2025

IT's goal is the efficient deployment of information technology to promote the economically efficient use of technology to meet BPA's business requirements. To identify business needs for IT products and services and increase the level of engagement of business clients in the management of IT assets, BPA deployed IT Strategic Business Partners to each of the business lines at BPA: Power, Transmission and Enterprise Services. IT's Strategic Business Partners develop collaborative relationships with IT's business lines to improve or achieve the following:

- Assist the business information owners and sponsors to take an enterprise architecture approach to solving business problems. This includes business process evaluation and restructuring before turning to automation solutions.
- Assist the business information owners and sponsors to determine and subsequently measure the business value of expand IT projects, to promote effective and efficient use of technology.
- Develop and/or support existing bodies within the business lines to identify and prioritize IT projects with a view to longer-range planning. These will then be forwarded to the IT intake process for initial scoping validation and then to the Agency Priority Steering Committee for cross-agency prioritization and tracking.

In conjunction with this effort, the system life-cycle processes used for IT projects is adding a stronger emphasis on ensuring that those additional applications are supported once they have been installed. The process and method for prioritizing expansion projects is not expected to change: sustain before expand, mission critical systems before enterprise systems, and reliability and compliance before discretionary.

A primary key to internal customers' understanding of IT costs is a comprehensive Service Catalog that identifies the costs of providing IT goods and services. A high-level catalog has been constructed; however, it will evolve to greater levels of detail to make it more useful in future years.

The Department of Homeland Security, through DOE, has identified additional specific cybersecurity capabilities that BPA must implement and support. One is known as Continuous Diagnostics and Mitigation, a component of a larger umbrella of cross-governmental approaches to cybersecurity known as Zero Trust Architecture. This compliance effort will increase IT's operations and maintenance requirements by approximately \$3.4 million per year beginning in FY 2023.

5.5 Compliance, Audit, & Risk Management

The Compliance, Audit, and Risk Management Organization is comprised of four organizations headed by the executive vice president of Compliance, Audit and Risk Management:

- Agency Compliance and Governance
- Audit
- Risk Management
- Purchasing and Property Policy Development and Compliance

Table 37 provides an overview of recent, current and forecast Compliance, Audit and Risk Management expenses.

Table 29: Compliance, Audit & Risk Management, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Enterprise Services' Allocated G&A	10,524	11,432	12,584	12,986	11,623	12,132	12,785	11,877
Transmission Direct Support	3,969	5,017	3,584	3,616	6,109	6,246	3,600	6,178
Power Direct Support	3,200	3,224	2,152	2,249	3,224	3,385	2,200	3,304
Total	17,693	19,672	18,320	18,850	20,956	21,763	18,585	21,359

Agency Compliance and Governance oversees a broad array of compliance and governance functions at BPA, including:

- FERC compliance
- NERC standards of conduct compliance
- Internal policy management
- OMB Circular A-123 compliance
- Information governance, privacy compliance, and FOIA response
- Fraud risk management
- Regulatory compliance certification and reporting
- Compliance remediation tracking and reporting

Audit provides independent, objective assurance and consulting services designed to evaluate and assist BPA by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of its internal control, risk management and agency governance processes. The overall objective is to provide reasonable assurance that BPA is compliant with laws and regulations, has efficient and effective operations, and has reliable financial reporting.

Risk Management is comprised of the Enterprise Risk Management and Transacting, Credit and Insurance Risk Management functions. The increase in proposed IPR costs for the organization is largely attributable to increased insurance premiums. Risk Management provides independent assurance that agency business operations and planning, and decision-making are risk informed and aligned with the agency's risk tolerance, improving the likelihood that the agency achieves its business objectives. The group

provides consulting, facilitation and training for risk assessments, business cases, root cause analyses, and application of the Agency Decision Framework.

The **Purchasing and Property Policy Development and Compliance** mission is to:

- Provide management direction through the development and use of acquisition and assistance policies to conduct BPA's business in a cost-effective manner using Section 2(f) of the Bonneville Project Act;
- Delegate authority for contracts and financial assistance transactions (excluding land, power, and energy services acquisitions) BPA-wide;
- Provide oversight to BPA's acquisition, financial assistance, and personal property operations to assure conformance with established law, regulations, policies, procedures, and good business practice.

5.6 Finance

Finance provides leadership and services in budget operations, financial planning and analysis, Treasury operations and strategic analysis, financial systems, accounting and financial reporting for the FCRPS and BPA. Finance is responsible for preparing annually commercially audited financial statements for the consolidated FCRPS and separate federal financial statements, commercial capital and expense budgets for the operating fiscal year and upcoming rate period through the IPR and the presidential and congressional federal budgets. Treasury operations in Finance include payables and receivables for approximately \$4 billion in annual revenues and expenses, and strategic treasury functions including managing the issuance and repayment of approximately \$15 billion in outstanding debt, \$1 billion in cash and investments, \$500 million investment portfolio related to the Columbia Generating Station Decommissioning trust fund, and preparing the Power and Transmission revenue requirements.

Additionally, Finance has primary responsibility for strategic and long-term financial initiatives. It develops relationships with federal and nonfederal banking communities, rating agencies, and investors. Finance provides leadership in developing proposals and policies on strategic issues that affect the agency's long-term financial integrity and competitiveness or that have an impact on customers, constituents and other stakeholders.

Table 38 provides an overview of Finance's recent, current and forecast expenses.

Table 30: Finance, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Enterprise Services' Allocated G&A	13,018	13,229	13,017	12,935	17,861	18,666	12,976	18,263
Transmission Direct Support	1,172	1,137	1,122	1,160	-	-	1,141	-
Power Direct Support	599	540	718	743	-	-	731	-
Total	14,789	14,906	14,857	14,839	17,861	18,666	14,848	18,263

Program Objectives in 2024 and 2025

Finance's projected costs represent maintaining current staffing levels and an investment in BPA's finance function to mitigate risk in certain key finance functional areas. BPA has systematically assessed risk in the current state finance function and has identified "single points of failure" where certain financial processes or outputs are inadequately staffed and have a high likelihood of risk to BPA's financial statements or key processes. The majority of the projected increase in the Finance program cost is related to inflation on existing Finance staff and adding new Finance staff on a targeted basis to address the highest risk, single point of failure exposures.

Finance and the Business Transformation Office have launched a finance transformation initiative called Finance Modernization that is intended to map the future state of the Finance function at BPA, including financial processes and systems in support of the Finance function objectives. At this point the Finance Modernization initiative is being scoped and developed; once this stage is complete a portfolio of specific

transformation projects will be identified. This initiative will drive toward improving financial transparency, decision support and efficiency.

Finance has included one specific transformation project in its BP-24 projected costs to develop a full set of financial statements by business line, which will be beneficial for business line-specific financial management, as well provide greater transparency to certain Power and Transmission rate case calculations, e.g., reserves and leverage. While BPA may not achieve the goal of financial statements by business line within the BP-24 rate period, due to the significant data structure work required, it is important to begin the project and assign adequate resources to it.

5.7 Intergovernmental Affairs

Intergovernmental Affairs works proactively to achieve BPA mission objectives and strategic direction by providing forthright and effective engagement and advice, acting as a liaison, and collaborating with BPA management and staff, customers, federal, state, local governments and elected officials, federally-recognized Tribal government entities, regional constituents and public stakeholders. Intergovernmental Affairs accomplishes its goals by:

- Engaging in a “no surprises” culture with all constituents.
- Providing and creating educational opportunities.
- Building and managing effective working relationship built on mutual trust.

Table 39 provides an overview of recent, current and forecast Intergovernmental Affairs’ expenses.

Table 31: Intergovernmental Affairs, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Enterprise Services' Allocated G&A	3,349	3,437	3,232	3,290	4,715	4,698	3,261	4,707
Transmission Direct Support	-	-	180	185	-	-	183	-
Power Direct Support	11,725	11,956	12,059	12,551	11,942	11,942	12,305	11,942
Total	15,074	15,393	15,471	16,027	16,657	16,640	15,749	16,649

Program Objectives in 2024 and 2025

The current and near-term demands for support from Intergovernmental Affairs are many. Intergovernmental Affairs supports U.S. congressional, federal, Tribal, state, local and constituent engagement, education, advice and negotiation for any and all BPA mission objectives. The organization must assure that all issues that arise externally are coordinated and aligned with BPA’s mission objectives and strategies, and its staff advises internally and externally when BPA may be at risk of misalignment. The Intergovernmental Affairs organization must manage effective BPA engagements across overlapping and occasionally conflicting policy choices and process timelines. It manages every major BPA policy matter along with individual constituent issues effectively and, at the same time, based on our mission directive.

Intergovernmental Affairs’ projected increased costs reflect three primary goals: fill necessary vacancies due to resignation and retirement; provide pay equity between regional and Tribal constituent account executives; and continue to include funding to provide educational grants and emphasis programs for Tribes.

5.8 Chief Operating Officer Organization

The Chief Operating Officer (COO) provides policy and strategic guidance concerning BPA’s business operations and provides executive-level leadership for strategic direction and policy-making. The business units that report directly to the COO are:

- Business Transformation Office
- Customer Support Services
- Environment, Fish and Wildlife
- Power Services
- Transmission Services

The COO Organization supports maturation of asset management, data governance, business process management, and decision governance across BPA and includes the Customer Support Services organization. The COO Organization is projecting an increase in BP-24 IPR forecast costs largely to support forecast increases in labor costs.

Tables 40 and 41 provide overviews of recent, current and forecast expenses for the overall COO organization and specific to Customer Support Services, respectively.

Table 40: Chief Operating Officer, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Enterprise Services' Allocated G&A	7,316	9,508	7,314	7,541	4,707	4,885	7,428	4,796
Transmission Direct Support	2,589	2,525	2,973	3,076	3,570	3,709	3,024	3,639
Power Direct Support	2,613	2,513	3,347	3,450	4,240	4,368	3,398	4,304
Total	12,517	14,546	13,633	14,067	12,517	12,962	13,850	12,739

Table 32: Customer Support Services, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Enterprise Services' Allocated G&A	2,665	3,088	2,635	2,726	2,660	2,764	2,680	2,712
Transmission Direct Support	2,589	2,525	2,973	3,076	3,264	3,393	3,024	3,328
Power Direct Support	2,614	2,513	3,347	3,450	4,240	4,368	3,398	4,304
Total	7,867	8,126	8,954	9,252	10,164	10,525	9,103	10,344

Customer Support Services

Located within the COO Organization, Customer Support Services (CSS) provides all load forecasts, produces all customer bills, and oversees revenue metering services and contract support services for BPA. CSS provides these core business services central to the customer experience while meeting back

office governance requirements. The group works closely with Power and Transmission front office business organizations. The Agency Enterprise portal, one of the IT systems CSS uses, provides a single source location for customers' digital touchpoint with BPA. Using this portal, customers can access data related to metering, billing, contracts and forecasting as well as other agency and customer specific information.

Program Objectives in 2024 and 2025

CSS projected costs are more than 98% personnel-related. Personnel costs are projected to increase for the FY 2024-2025 rate period to support the rising costs of existing staff and BPA's participation in the Western EIM. In addition, the CSS groups will continue to refine the new metering, billing and customer portal systems that were implemented to keep pace with the changing needs of BPA and its customers.

5.9 General Counsel

The Office of General Counsel (OGC) provides legal advice and representation in connection with all BPA activities. Table 42 provides an overview of OGC’s recent, current and forecast expenses.

Table 33: General Counsel, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Enterprise Services' Allocated G&A	4,185	3,537	5,824	5,497	5,708	5,399	5,660	5,554
Transmission Direct Support	3,040	3,788	2,931	3,092	3,804	3,961	3,012	3,883
Power Direct Support	3,169	3,621	3,029	3,195	3,692	3,845	3,112	3,768
Total	10,394	10,946	11,784	11,784	13,205	13,205	11,784	13,205

OGC work performed in support of Power and Transmission is charged accordingly to the respective business units. OGC has costs in support of general agency initiatives that are functionalized to the business units. Support includes legal advice and representation of the agency in all areas of claims, and administrative or judicial litigation. Areas covered include:

- Power marketing
- The Columbia River Treaty
- Federal generation
- Corporate authority, governance and delegations
- Financial management
- Tribal issues
- Fish and Wildlife program support
- Provision and administration of transmission and ancillary services pursuant to BPA’s Open Access Transmission Tariff and other transmission-related agreements
- BPA rate-setting
- Regional planning, resource adequacy, and other market development and participation efforts
- Procurement of goods and services
- Tort claims
- Freedom of Information Act and Privacy Act
- Employee claims
- Ethics, including conflicts of interests and financial disclosures
- Human capital issues, including labor issues, disciplinary actions, reasonable accommodations requests and EEO claims
- Security processes and procedures

Program Objectives in 2024 and 2025

The projected costs associated with the OGC reflect the legal services necessary to support the mission in FY 2024 and FY 2025. OGC’s projected costs are almost entirely personnel driven; it has no programs beyond legal services. While personnel costs will increase due to projected inflation, legal staff has decreased due to a combination of retirements and departures. OGC intends to hire staff to maintain its

current headcount and use retention incentives, attorney promotions to the GS-15 master level, and other incentives as available and appropriate to support priority growth. Retaining senior attorneys is crucial for meeting legal services needs, such as program plan advice and counsel, prioritizing litigation and other legal work, and meeting client expectations.

OGC's goals and priorities in the BP-24 rate period are to continue to provide advice related to, and defend actions associated with, the widely varying functional areas identified above. All issues are important, but more activity is expected with power sales contract policy development; power and transmission rate case preparation and processing; transmission tariff Section 212 hearing; treaty negotiations; changing energy market environments (e.g., EIM, day-ahead markets, resource adequacy); litigation and activities associated with biological opinions, Columbia River System Operations, and other environmental and Tribal processes.

5.10 Chief Workforce & Strategy Office

In 2021, BPA reorganized its executive structure to align several functions under the new Chief Workforce and Strategy Office (CWSO). This office will strengthen the agency's strategic capabilities and enhance its commitment to its workforce and organizational culture. Table 43 provides an overview of recent, current and forecast CWSO expenses.

Table 34: Chief Workforce & Strategy Office, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Technology Innovation & Strategy	4,364	4,778	4,933	4,972	6,426	6,568	4,952	6,497
Communications	4,956	4,639	4,598	4,771	6,298	6,538	4,684	6,418
Human Resources	15,494	15,097	16,378	16,699	17,896	18,615	16,539	18,256
Civil Rights & Equal Employment Opportunity	919	875	934	947	1,395	1,461	941	1,428
Chief Culture Officer	-	-	-	-	2,405	2,508	-	2,457
Chief Workforce & Strategy Office	400	477	678	701	1,029	1,075	690	1,052
Total	26,133	25,866	27,521	28,090	35,448	36,767	27,806	36,107

BPA's new CWSO is elevating the agency's focus on strategic execution, organizational culture and work environment to ensure BPA is: effectively planning and executing its strategies; retaining and attracting highly skilled employees; providing a work environment that drives employee satisfaction and productivity; and advancing BPA's efforts to become a more diverse and inclusive organization. All of these areas are essential to BPA's ability to perform its public service mission, meet its responsibilities, achieve its strategic and workplace goals and ultimately provide excellent service to its customers and the region.

This new office, led by the Chief Workforce and Strategy Officer, includes the following functions:

- Chief Technology Innovation and Strategy Office
- Communications
- Human Resources Service Center
- Civil Rights and EEO
- Culture Office

These functions will primarily support the agency's strategic direction and the alignment of its workforce to its strategies and organizational goals. The CWSO will strengthen the agency's strategic capabilities in a fast-changing industry and ensure BPA can attract, retain and provide a workplace that drives employee satisfaction and productivity, which ultimately enhances BPA's ability to perform its public service mission and provide exceptional service to its customers.

Overall, the CWSO is forecasting an additional \$9 million over the last IPR, which is identified in the following sections. Approximately \$4 million of the total projected increase represents the expected cost, with inflation, of the additional staffing and other resources required to execute the new mission of the

CWSO. The Strategy Office, Chief Culture Office and HR Service Center will incur the majority of the forecast cost increases. An additional \$5 million is forecast in wage inflation from staff and resources that existed at BPA before the re-organization and creation of new functions.

5.10.1 Chief Culture Office

Table 44 provides an overview of forecast expenses for the new Chief Cultural Office.

Table 35: Chief Culture Office, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Chief Culture Office	-	-	-	-	2,405	2,508	-	2,457

In FY 2022, BPA reorganized its Diversity and Inclusion Office and functions within HR into a new Chief Culture Office (CCO). The purpose of the CCO is to guide and implement the continuous development of the agency's people and culture strategy to create a positive work environment where all workforce members feel safe, engaged and included. The CCO will focus on the following:

- The agency's culture strategy, development and change management
- Employee engagement and strategy program
- Diversity and Inclusion Program and requirements
- Outreach and recruitment programs
- Federal employee viewpoint survey
- Well-being program
- Retention program
- Employee value proposition
- Other supporting program and initiatives

This new organization, which is overseen by the Chief Culture Officer, will lead the alignment of culture toward the long-term outcomes described in BPA's strategic plan.

Program Objectives in 2024 and 2025

The objective of the CCO in FY 2024 and FY 2025 is to integrate people and culture support into strategic planning and implementation. This will be accomplished by fully standing up and staffing the programs listed in the Mission section above. Fully establishing the following capabilities will be an emphasis in the next rate period:

- Strategic formulation of culture strategy
- Recruitment and outreach
- Diversity and inclusion data analytics for workforce staffing support
- Support the new hybrid work environment and culture

5.10.2 Civil Rights & EEO

Table 45 provides an overview of recent, current and forecast Civil Rights and Equal Employment Opportunity (CREEO) expenses.

Table 36: Civil Rights and EEO, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Civil Rights and EEO	919	875	934	947	1,395	1,461	941	1,428

Civil Rights and EEO is responsible for EEO Title VI and VII compliance and resolution programs.

Program Objectives in 2024 and 2025

The primary objective of the CREEO program in FY 2024 and FY 2025 is to meet federal requirements. Additionally, the CREEO program supports the agency’s overarching people and culture goals where possible. The projected costs contain a modest increase for additional personnel and inflation on existing costs that will permit BPA to meet its federal requirements and support the development and implementation of BPA’s culture and strategy goals.

5.10.3 Communications

Table 46 provides an overview of Communications’ recent, current and forecast expenses.

Table 37: Communications, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Enterprise Services' Allocated G&A	4,665	4,450	4,477	4,645	6,298	6,538	4,561	6,418
Power Direct Support	167	102	120	125	-	-	123	-
Transmission Direct Support	123	87	-	-	-	-	-	-
Total	4,956	4,639	4,598	4,771	6,298	6,538	4,684	6,418

BPA’s Communications organization is responsible for developing and executing comprehensive communications and outreach strategies that foster greater awareness, understanding and support for BPA’s mission, strategies and activities, and demonstrate how BPA supports a broad range of regional needs and interests. Communications develops content for internal and external audiences, which include its power and transmission customers, retail electric consumers, Northwest Tribes, the BPA workforce, regional partners and groups, the public and other stakeholders.

Communications staff collaborate with agency leaders and subject-matter experts in developing clear and effective communications on complex and sensitive policy or program decisions, issues, initiatives and topics, and ensure the agency communicates with one voice. When appropriate, staff also collaborate and coordinate with federal and regional partners in the planning and executing of external-facing strategies. Communications is responsible for engaging with local, regional, national and industry news media, providing reporters agency perspectives and facts, translating complex and technical information, and earning media placements that highlight agency initiatives, priorities and successes.

Communications is responsible for facilitating public input in BPA's decision-making processes by promoting customer, stakeholder and public engagement through public meetings, comment processes and the distribution of information. Communications plans, organizes, supports and executes meetings and events that inform and engage customers, stakeholders, BPA employees and managers, the public and other audiences. These include the agency's Quarterly Business Review, major policy changes, regional science bowl competitions, routine and special employee and manager meetings, the agency's annual employee recognition ceremony and various other meetings, events and workshops.

Communications staff designs and coordinates region-wide education and community relations programs, develops STEM and energy education materials, and manages BPA's award-winning Hydropower Flows Here educational initiative that boosts public awareness of and appreciation for hydropower.

Communications is responsible for the design, layout and content management of BPA's internal and external websites, evaluating the effectiveness of the agency's web content and initiating and coordinating revisions. Communications also manages the agency's external presence with visual branding guidelines and standards, which helps ensure professionalism and consistency across the business.

BPA's Library and Visitor Center, which falls under the Communications organization, provides public information regarding programs and policies, distributes documents, materials and products to requestors, and provides access to a variety of historic and current publications, films, digital images, and technical standards and regulations related to BPA and DOE.

Communications will continue to inform and educate customers, the general public and other stakeholders on how BPA is executing its strategic goals; prudently managing its costs; transforming its business and operations; advancing the region's clean energy goals; and supporting the region's long-term economic success so it remains the provider of choice for low-cost, reliable and responsible carbon-free power for decades to come.

Program Objectives in 2024 and 2025

Communications will continue to develop and implement strategies that inform and educate audiences about BPA's strategic direction, priorities, policies, projects, initiatives and activities. A number of projects will require significant support from Communications. These include the following.

- Provider of Choice Initiative (post-2028 contracts)
- Ongoing implementation of agency's strategic plan
- Continuity events (extreme weather, wildfire and other threats)
- Columbia River Treaty
- Asset management initiatives
- New market initiatives, opportunities and activities
- Ongoing outreach about the value, performance and benefits of the FCRPS
- BPA's Fish and Wildlife program and successful mitigation efforts
- Public and workplace safety initiatives
- Strategies that strengthen BPA's workforce and organizational culture
- Financial public processes

The efforts that Communications supports are key to increasing greater understanding of BPA’s strategies, policies and initiatives that enhance the agency’s ability to deliver on its public responsibilities. Demonstrating BPA’s competitiveness and responsiveness to its customers will position the agency as a trusted partner and the provider of choice for regional electric utilities.

Communications’ projected costs for FY 2024 and FY 2025 reflect the same amount of projected costs in FY 2022 and FY 2023, with inflation.

5.10.4 Human Resources

Table 47 provides an overview of recent, current and forecast Human Resources’ expenses.

Table 38: Human Resources Service Center, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Enterprise Services' Allocated G&A	13,349	12,928	13,178	13,499	15,640	16,359	13,339	16,000
Transmission Direct Support	2,145	2,169	3,200	3,200	2,256	2,256	3,200	2,256
Total	15,494	15,097	16,378	16,699	17,896	18,615	16,539	18,256

BPA’s Human Resources Service Center (HRSC) plans, directs and manages a comprehensive federal human capital management program positioned to meet BPA’s mission and objectives. Delivery of business and HR objectives is accomplished through seven major program areas:

- HR Advisory Office
- Recruitment and Placement
- Classification and Position Management
- Learning and Workforce Development
- Employee and Labor Relations
- Benefits and Processing
- HR Systems and Automation
- Workforce Analytics and Reporting

BPA’s HRSC is responsible for developing, communicating and coordinating HR strategies, policies and initiatives with the business units in accordance with BPA’s strategic goals.

Program Objectives in 2024 and 2025

HR established several objectives to ensure that BPA’s workforce is the right size and composition, possesses the right skills and competencies and works in a positive environment. HR’s projected costs for FY 2024 and FY 2025 reflect continued operation and service delivery levels at prior rate period spending, with inflation. HR workforce strategies will continue to align with BPA’s mission objectives and strategic direction. Specifically, the agency will be shifting reliance from contracted labor and right-sizing the federal workforce based on workload requirements. Simultaneously, work will be needed to realign internal resources to focus on major initiatives such as new EM activities. The internal movement of

employees to needed functions will be essential to executing the strategy. Similarly, HR will continue to focus on establishing and maintaining updated workforce plans for the agency.

5.10.5 Technology Innovation & Strategy Office

Table 48 provides an overview of recent, current and forecast expenses for the Technology Innovation and Strategy Office.

Table 39: Technology Innovation and Strategy, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Enterprise Services' Allocated G&A	1,004	1,070	1,406	1,445	2,899	3,042	1,426	2,971
Power Direct Support	2,040	2,316	2,527	2,527	2,527	2,527	2,527	2,527
Transmission Direct Support	1,320	1,393	1,000	1,000	1,000	1,000	1,000	1,000
Total	4,364	4,778	4,933	4,972	6,426	6,568	4,952	6,497

The Technology Innovation and Strategy Office ensures a direct connection between the agency's strategic objectives and technology innovation applications that accomplish the agency's mission. Implementation of its mission is carried out through the following areas.

- Research program management.
- Technology transfer within BPA.
- Internal and external research coordination and collaboration with national and international research contacts, other federal agencies and universities.
- Managing critical strategy functions, including
 - strategic initiatives.
 - development of implementation and performance measurement strategies.
- Managing critical support functions.
- Internal operations, strategic initiatives.
- Special projects that support the CWSO.

The Technology Innovation and Strategy Office is composed of three programs: Technology Innovation, Strategy, and Internal Operations.

The **Technology Innovation** program establishes programmatic requirements for BPA's research, development and demonstration (RD&D) projects to support continued improvement in the efficient and effective operation of the FCRPS as opportunities become available through new technology.

BPA's Technology Innovation Office performs the centralized report and program management function for all BPA RD&D activities. It facilitates the development and implementation of technology-based solutions to business challenges by managing an RD&D program to maximize the benefits of internal expertise and external collaborations.

Technology Innovation staff partner with agency leadership and subject-matter experts to develop research priorities, find research partners, and support demonstration projects. When demonstration

projects show a reliable approach to meeting agency objectives, technology innovation staff develop technology transfer plans for implementation of RD&D projects in partnership with subject matter experts. Technology Innovation staff continuously connect agency staff and leadership with external collaboration opportunities to increase efficient and effective operations through new technologies.

The **Strategic Planning Office** develops and monitors agency strategic goals and, in collaboration with internal partners, coordinates strategic management activities. BPA strategic goals and associated objectives are developed based on assessment of the industry and regional landscape, economy and forecast conditions that affect power generation and transmission across BPA's service area. Strategic goals will be developed for a span of 5-6 years with intermediate work focused on monitoring of internal capabilities and external landscape.

The **Internal Operations Office** is responsible for providing support to the Chief Technology Innovation and Strategy Office by managing critical support functions, including internal operations, strategic initiatives and special projects, diversity and inclusion, sustainability and compliance. Internal Operations is responsible for assisting the Chief Technology Innovation and Strategy Officer in providing leadership in the formulation and implementation of policies, strategies and practices associated with these critical support functions.

Internal Operations supports and monitors the agency performance scorecard, which outlines the agency's highest-level objectives and measures of success and uses those results to gauge the effectiveness of BPA as a whole. Internal Operations also maintains the Culture of Innovation program, to achieve operational and service excellence by fostering a business culture of innovation and continuous improvement.

Program Objectives in 2024 and 2025

Technology Innovation will develop and implement the agency's priorities for RD&D to support continued efficient operation of the FCRPS. Rate period research priorities are set prior to the start of each rate period, and focus on projected agency needs. Past research projects have addressed topics to include demand response, energy efficiency, hydro assets, hydro generation and models, IT, communications and cybersecurity, energy storage, impacts of new intermittent generation, products and services, and transmission. Going into FY 2023, FY 2024 and FY 2025, many previous research topics will continue, with increased program awareness and collaboration within BPA and with other federal entities. Future research will likely include off-shore wind, incorporating long-term storage on the transmission system, increased real-time awareness and improved resiliency of the transmission system, and a more aggressive cybersecurity stance on operational technology. Technology Innovation will continue to collaborate with internal and external stakeholders to find and test potential projects to achieve stated objectives and continuously improve FCRPS operations.

The projected costs ensure that Technology Innovation has the resources necessary to continue current partnerships with external research entities and provide support for internal research, development and demonstration projects and technology transfer. During the FY 2024 and FY 2025 rate period, Technology Innovation will increase support for internal business needs and information sharing through realignment of staff roles and an increased focus on internal collaboration. As a result, projected costs in BP-24 have increased above BP-22 to fully resource these capabilities. Costs include monitoring performance toward strategic objectives as captured in the 2024-2028 strategic plan. After drafting a new strategic planning

framework in 2023, the Strategic Planning team will spend 2024-2025 establishing repeatable processes to fulfill strategic management activities. This will require establishment of a strategic network, a collaboration of functions across the agency to stay abreast of internal capabilities, external conditions and then assess for impacts to BPA. During this period, considerable time will also be spent on deepening strategic management expertise across staff and on firming working relationships and process interdependencies across the agency.

The Culture of Innovation program will advance and continue to champion and support employee-driven solution development success and innovation. Internal Operations will explore the development of metrics that will help understand the effectiveness of BPA's new hybrid work structure and how this information could shape future telework considerations.

6 Environment, Fish & Wildlife

BPA's Environment, Fish and Wildlife (EFW) division mitigates for the effects of the Federal Columbia River power and transmission systems, prevents environmental impacts, and provides compliance with applicable environmental laws and regulations. EFW provides support and compliance for the Power and Transmission business lines through three programs: Environmental Planning and Analysis; Pollution, Prevention and Abatement; and Fish and Wildlife.

Environmental Planning and Analysis ensures that BPA activities subject to environmental review are compliant with federal environmental and cultural resource laws and regulations, including the Endangered Species Act (ESA), the National Environmental Policy Act (NEPA), the National Historic Preservation Act (NHPA), and the Clean Water Act (CWA), among other environmental laws. Environmental Planning and Analysis provides this function for Transmission and Power projects, programs and activities, including BPA's Columbia Basin Fish and Wildlife (F&W) program, which are funded by Power and Transmission.

Pollution, Prevention and Abatement minimizes BPA's environmental liabilities and ensures that Transmission activities, projects and facilities comply with applicable environmental regulations. To that end, this organization develops, coordinates, and manages environmental compliance programs for the operation, maintenance and construction of BPA's transmission system. Nearly all of Pollution, Prevention and Abatement's resources and funding are dedicated solely to Transmission and are direct Transmission costs. As such, the organization manages the Environmental capital program, which is a part of the Transmission asset category.

BPA's **F&W** program provides funding to local, state and federal entities, Tribes, and non-governmental organizations to implement hundreds of mitigation projects. These actions help improve the overall conditions for fish and wildlife adversely affected by the development, management and operation of the FCRPS. For example, F&W program funding improves habitat in the mainstem of the Columbia River as well as tributaries and the Columbia River estuary, builds hatcheries and boosts hatchery fish production, evaluates the success of these efforts, and improves scientific knowledge through research. This work is implemented through annual contracts, many of which are associated with multi-year agreements like the Columbia River Basin Fish Accords. BPA fulfills many of its ESA compliance commitments through the F&W program as well. With the exception of capital funding for hatchery construction, certain land acquisitions, associated stewardship funds, and certain habitat projects, the F&W program is expense-funded.

In its role under the Northwest Power Act, the Northwest Power and Conservation Council develops a program of measures to protect, mitigate and enhance fish and wildlife, including related spawning grounds and habitat, on the Columbia River and its tributaries. BPA funds mitigation consistent with the Council's program to fulfill its Northwest Power Act fish and wildlife responsibilities and to implement offsite mitigation actions associated with various biological opinions for ESA-listed species.

In addition to the hatchery operations that are funded through the F&W program, BPA has a direct-funding agreement with the U.S. Fish and Wildlife Service (USFWS) to pay the annual expense costs of operating and maintaining the Lower Snake River Compensation Plan (LSRCP) fish hatcheries and facilities. Congress authorized the LSRCP as part of the Water Resources Development Act of 1976 (90 Stat. 2917) to offset fish and wildlife losses caused by construction and operation of the four lower Snake

River dams. The LSRCF facilities were constructed by the USACE; upon their completion and at the direction of Congress, jurisdiction and control of the facilities passed to the USFWS, along with responsibility to administer the LSRCF program. The LSRCF hatcheries and satellite facilities produce and release more than 19 million salmon, steelhead and resident rainbow trout. The 26 LSRCF hatcheries and satellite facilities are operated by Idaho Fish and Game, Washington Department of Fish and Wildlife, Oregon Department of Fish and Wildlife, USFWS, the Nez Perce Tribe, Confederated Tribes of the Umatilla River and Shoshone-Bannock Tribes.

Table 49 provides an overview of recent, current and forecast expenses for EFW, while Table 50 provides forecast capital expenses through 2033.

Table 40: Environment, Fish & Wildlife, Expense Detail

(\$thousands)	Actuals		Rate Case		Proposed IPR		Avg Rate Case	Avg Proposed IPR
	2020	2021	2022	2023	2024	2025	2022-2023	2024-2025
Enterprise Services' Allocated G&A	88	54	-	-	-	-	-	-
Transmission Direct Support	5,644	5,244	7,417	7,630	8,619	8,879	7,524	8,749
Power Direct Support	264,055	277,044	286,920	282,707	308,513	308,254	284,814	308,383
Total	269,787	282,342	294,337	290,337	317,133	317,133	292,337	317,133

Table 50: Environment, Fish and Wildlife, Capital Detail

(\$thousands)	Proposed IPR		Capital Outyears							
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Fish & Wildlife	41,335	41,300	29,000	15,700	15,000	15,000	15,000	15,000	15,000	15,000
Environment	5,600	5,610	5,619	5,630	5,640	5,650	5,660	5,670	5,680	5,690
Capital Total	46,935	46,910	34,619	21,330	20,640	20,650	20,660	20,670	20,680	20,690

Program Objectives in 2024 and 2025

F&W Program Objectives

The F&W program objectives are informed by legal obligations primarily related to biological opinions and the Council's program. In BP-24, BPA will continue to work collaboratively with the Council, states, Tribes and other partners to identify opportunities to prioritize and implement projects that directly benefit fish and wildlife in a cost-effective manner. This collaboration will continue in areas of mutual focus such as asset management to maintain the effectiveness of past mitigation efforts. In addition, the F&W program plans to develop and implement projects that will provide additional information and on-the-ground benefits to resident and anadromous fish that were specified in the 2020 USFWS and National Marine Fisheries Service Biological Opinions. Examples of these types of projects include assessments and implementation of proposed habitat access improvements for bull trout, habitat quality improvements for Kootenai River white sturgeon, as well as monitoring of new spill programs on the main stem Snake and Columbia Rivers.

The F&W program provides a strong base of biological accomplishment that is maintained, refined and built on, rather than continuously reinvented. The flexibility of multi-year planning and the ability to shape available budgets on an annual basis allows the F&W program to support high-priority work that is ready to implement. By working with our partners annually to identify efficiencies throughout the F&W program, we are able to incorporate emerging priorities as they are identified. Finally, BPA will fulfill its commitments through existing long-term agreements like wildlife settlements.

During BP-24, BPA is projecting an increase in F&W program costs of \$21.7 million; this represents an 8.7% increase in fish and wildlife costs for BP-24. This is the largest percentage increase in projected F&W program costs since BP-10. The estimated cost increase stems from inflationary pressure on the cost of materials, equipment and staffing across the F&W program, new fish and wildlife obligations, and necessary investments in existing mitigation assets.

Consistent with the 2021 *Memorandum of Agreement between the Department of Energy acting by and through the BPA and the Department of Interior acting by and through the USFWS for Direct Funding of Operations and Maintenance Costs of the Lower Snake River Compensation Plan Program (LSCRCP MOA)*, USFWS' objectives for the LSCRCP include continuing improvements in rearing technology that allow for increased fish production using available water; expanding hatchery reforms to further advance best management practices; implementing cost-effective energy conservation initiatives for pumping and heating/cooling water; and developing and implementing preventive maintenance as well as addressing deferred maintenance.

For BP-24, USFWS and BPA determined that a \$1.265 million dollar projected increase would be appropriate to reflect projected increased LSCRCP costs, including personnel costs and projected increased costs of fish food. Projected costs also include an increase in deferred and non-routine maintenance consistent with the cost of work that is expected to occur in FY 2024 and FY 2025. Finally, the projected costs include some improvements and efficiencies in the spring Chinook component of the program.

Environmental Planning & Analysis Objectives

For Environmental Planning and Analysis, work includes the following:

- In partnership with Transmission, continue to identify the appropriate NEPA strategies and provide quality, timely and cost-effective environmental and cultural planning and analysis services to deliver key program milestones for BPA's transmission program.
- In partnership with Power Services and the Business Transformation Office, identify the appropriate NEPA strategy and provide quality, timely and cost-effective environmental planning and analysis to deliver key program and project milestones.
- In partnership with F&W, identify the appropriate NEPA strategy and provide quality, timely and cost-effective environmental and cultural resources planning and analysis to deliver key project milestones for BPA's F&W Program implementation.

The end goal is for the three lead federal agencies – BPA, the USACE, and Reclamation -- to implement cultural resource mitigation projects within the FCRPS.

For the Environmental Planning and Analysis unit, incorporating a cost-of-living adjustment and other increased personnel costs in BP-24 enables ongoing efforts to identify appropriate NEPA strategies and provide quality, timely and cost-effective environmental and cultural planning and analysis services. New, large non-discretionary NEPA activities would likely require additional staff, a delay of other existing, ongoing efforts, or a combination of both.

Pollution, Prevention and Abatement Objectives

Pollution, Prevention and Abatement plans to achieve the following goals:

- Reduce Polychlorinated Biphenyls (PCBs), a primary persistent bio accumulative toxic chemical on BPA’s transmission system
- Ensure BPA’s transmission facilities’ (e.g., substations and maintenance complexes) storm water discharges meet all federal and state standards established under the Clean Water Act
- Provide certainty that BPA’s oil storage facilities meet all federal and state standards established under the Clean Water Act and applicable hazardous waste regulations.

Additionally, the organization plans to explore options for Transmission to reduce BPA’s use of sulfur hexafluoride, which is an extremely potent and persistent greenhouse gas used as an arc suppressant in high-voltage electrical equipment.

For the Pollution, Prevention and Abatement program, incorporating a cost-of-living adjustment and other increased projected personnel costs in BP-24 will prevent delays in high-priority compliance work. However, the cost projection reflects staff limitations that may require EP to work closely with Transmission to prioritize work associated with expanding programs, such as the wildfire mitigation and capital construction programs. Past costs and projected inflation are used to estimate out-year costs associated with environmental cleanups and emergency spill response actions, which are non-discretionary work. Reductions from the projected costs would increase risk regarding BPA’s ability to respond to unforeseeable environmental emergencies, such as transformer failures.

Capital Execution

F&W program capital investments: F&W program capital spending is represented by three asset categories: (1) hatcheries, (2) large-scale habitat access improvement, floodplain reconnection, and fish habitat restoration, and (3) conservation lands.

Hatcheries: Hatchery-related expenditures have historically made up approximately 40% of F&W program capital spending. Capital expenditures on hatcheries increased in the last two years as a result of new hatchery construction, and are expected to increase in the next five years to account for hatcheries that are not yet built, but are committed to in existing agreements, which include the following projects:

Project	Scope
CRITFC White Sturgeon Hatchery	New facility construction and existing facility upgrades.
Crystal Springs Hatchery Construction	New hatchery and two new adult collection sites.
John Day Mitigation	Construct new indoor acclimation facility at Prosser Hatchery and improve existing infrastructure.
Kelt Reconditioning and Reproductive Success	Modify Nez Perce Tribal Hatchery to provide reconditioning for steel head kelt consisting of a new building to include circular tanks, feed and chemical storage room, lab, small office and bathroom.
Klickitat River Design and Construction – Yakima	Upgrade and build spring chinook centric facilities at Klickitat Hatchery, including new circular tanks; upgrade fishway; rebuild spawning shed and adult holding; construct new abatement pond; upgrade water delivery and drainage piping; cover spring chinook raceways.

Hatchery capital budgets are dependent upon estimated project schedules, which may move due to unexpected circumstances outside of BPA's control during the planning, design, permitting and constructions phases. In those cases, forecast budgets may need to be adjusted to align with the revised schedules.

Large-scale habitat access improvements, floodplain reconnection, and fish habitat restoration:

Expenditures related to habitat access improvements in the Columbia River tributaries and estuary have historically made up approximately 7% of F&W program capital spending. Capital expenditures on passage increased in the last two years as a result of the Steigerwald Lake National Wildlife Refuge project, one of the biggest fish habitat restoration projects BPA has ever sponsored in the Columbia River estuary, which will provide nearly 1,000 acres of off-channel habitat for young salmon and steelhead as they migrate to the ocean. Capital expenditures for this category are not expected to increase in the next five years.

Conservation lands: Land-related expenditures have historically made up approximately 53% of F&W Program capital spending. Capital expenditures on lands increased in the last two years as a result of new land acquisitions for mitigation within existing agreements. Future capital project of costs are expected to be in line with present levels.

Land acquisitions that permanently extinguish a portion of BPA's mitigation obligations are funded through BPA's capital program, and these include land acquisitions to mitigate impacts to wildlife throughout the basin and acquisitions to mitigate impacts to resident fish species in Montana.

Where feasible and cost-effective, BPA negotiates mitigation settlement agreements with stakeholders, such as the *2010 Willamette Wildlife Mitigation Agreement between the State of Oregon and the Bonneville Power Administration*. Settlement agreements are intended to permanently address BPA's mitigation obligations associated with the construction, inundation and operation of a specific dam. Settlement agreements may include funds for additional land acquisitions and stewardship funding to maintain the mitigation. If and when opportunities present, BPA may pursue additional settlement agreements.

Environmental capital investments: Pollution, Prevention and Abatement plans to replace an average of 30 pieces of high-voltage equipment annually that are regulated for PCB content under the Toxic Substances Control Act; install or upgrade drainage treatment and containment systems at environmentally sensitive transmission facilities to maintain water resources protection and to prevent regulatory compliance issues; and install or upgrade oil storage at key transmission facilities to meet environmental regulatory standards and requirements. The Environmental Planning and Analysis unit conducts NEPA analysis for all projected transmission capital improvement projects as required by federal regulations. The Environmental capital program is managed with a relatively level budget and systematic approach. There are no new programs planned for BP-24.

7 Disclaimer

The capital and expense forecasts in this document reflect BPA's current estimate of its costs. These cost estimates do not constitute final spending levels for any BPA program or represent actual budget decisions made in the budgetary process proposed by the executive branch. Rather, the IPR cost estimates are designed to provide the basis for part of the projected costs to be recovered in rates for power and transmission. Actual spending levels may be further revised or adjusted through BPA's internal or other federal budgetary processes.