2023

BUDGET AND GRID MANAGEMENT CHARGE RATES

Prepared by the Financial Planning and Procurement Department
California Independent System Operator Corporation

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Final

California ISO

A message from the President and CEO

For many years now, the California ISO has advanced a large number of initiatives to transform its business that are, by their very nature, highly resource-intensive. These include such projects as the Market Redesign and Technology Upgrade, development of the Western Energy Imbalance Market, adoption of the Reliability Coordinator function at the California ISO, as well as our current reliability enhancements associated with California's resource adequacy program, more forward-looking transmission planning, and development of the extended day ahead market.

As the ISO's business has scaled, the volume of work and responsibilities has grown significantly more rapidly than the number of people available to carry out all of these additional tasks. This has resulted in accumulation of technological debt associated with foundational systems, problems in project development and execution, as well as issues with both internal and external client satisfaction.

Earlier this year, when the ISO adopted its 2022-2026 Strategic Plan[1], we recognized the amount of work that would be necessary to accomplish the goals articulated in the plan while also addressing some of the crucial foundational work, program management, and technological debt issues affecting the organization. In doing so, we determined it was necessary to scale up our work force in critical areas to meet our objectives in a fashion consistent with the reliability needs of the grid and the satisfaction of our customers and other stakeholders. As a result, we have decided to add approximately 50 new fulltime positions in critical areas of the organization. This is a historic level of investment in human capital at the ISO and absolutely essential in order to meet the ISO's strategic objectives and position the organization for long-term success.

Consistent with Strategic Objective 1A in our Strategic plan to "modernize tools that support control center operations," we are adding several new system operations positions as well as creating a new control center service desk function where staff from balancing authority operations, technology, market analysis and customer service will work together to address short-term operational issues while also conducting longer-term coordination of project planning and user acceptance testing for new system enhancement initiatives.

Also consistent with Strategic Objective 1A, we are creating the role of Program Manager for our Control Center Foundational Improvement and Modernization Initiative to manage all

[1] The 2022-2026 Strategic Plan is available on the ISO website at http://www.caiso.com/Documents/2022-2026-Strategic-Plan.pdf

activities across the enterprise related to control center modernization. This Program Manager will also help us think about workflows within other parts of the business and the control center group, as well as improve communication and coordination associated with technology projects related to operational tools.

At the same time, we will also be investing in 18 new positions in power systems technology, information security, corporate systems and software engineering to “ensure that our mission-critical information technology platform is secure, scalable and resilient,” as articulated in Strategic Objective 1B. These new employees will also shore up various needs across the entire ISO enterprise.

With respect to Strategic Objective 2 in our 2022-2026 Plan – “Strengthen resource adequacy and meet California’s SB 100 goals through long-term transmission planning and effective coordination with state agencies” – we will be hiring a new director of resource planning and assessment, as well as additional personnel to conduct resource adequacy modeling. At the same time, we will be converting several contractors who are working on our interconnection queue request process to fulltime employees so we can further cultivate those staff members and retain important institutional knowledge and expertise. We will also add a resource adequacy and infrastructure policy specialist to further assist in revising the ISO’s long-term resource adequacy strategy and to help shape our engagement in key dockets at the California Public Utilities Commission and the California Energy Commission.

In the Market and Infrastructure Policy group, we will be adding a forecasting position and a regulatory analyst. During the fall and early winter, we will also be evaluating additional enhancements we can make to our policy function to further rationalize, integrate and simplify market design as we move into what will undoubtedly be a very busy period of market policy development in the years ahead. Also, under Market and Infrastructure Policy, we will be adding a resource adequacy and infrastructure policy position and two new quantitative market performance analysts.

In the area of Stakeholder Engagement and Customer Experience, we are adding two client support positions and converting a current contract support position to fulltime.

Under External Affairs, we will be adding positions associated with our website and data transparency initiatives that have been a high priority for our customers. Also, we are hiring two new regional representatives to represent the ISO as we expand our market offering across the West.

In the compliance area, we will be adding to our head count to ensure compliance with NERC Critical Infrastructure Protection standards and with our tariff.

Finally, in Human Resources, we will be converting a contract assistant recruiter position to fulltime and hiring a compensation analyst. These positions will help us meet our goals in Strategic Objective 5 to “create a flexible and adaptive work environment that retains and attracts a highly skilled and engaged workforce.”

With these historic investments in additional highly qualified personnel, the ISO can address its foundational capabilities, help position the organization to successfully execute the goals articulated in our 2022-2026 Strategic Plan, and respond effectively to the needs of our constituents and employees.

Elliot Mainzer

President and CEO

California Independent System Operator

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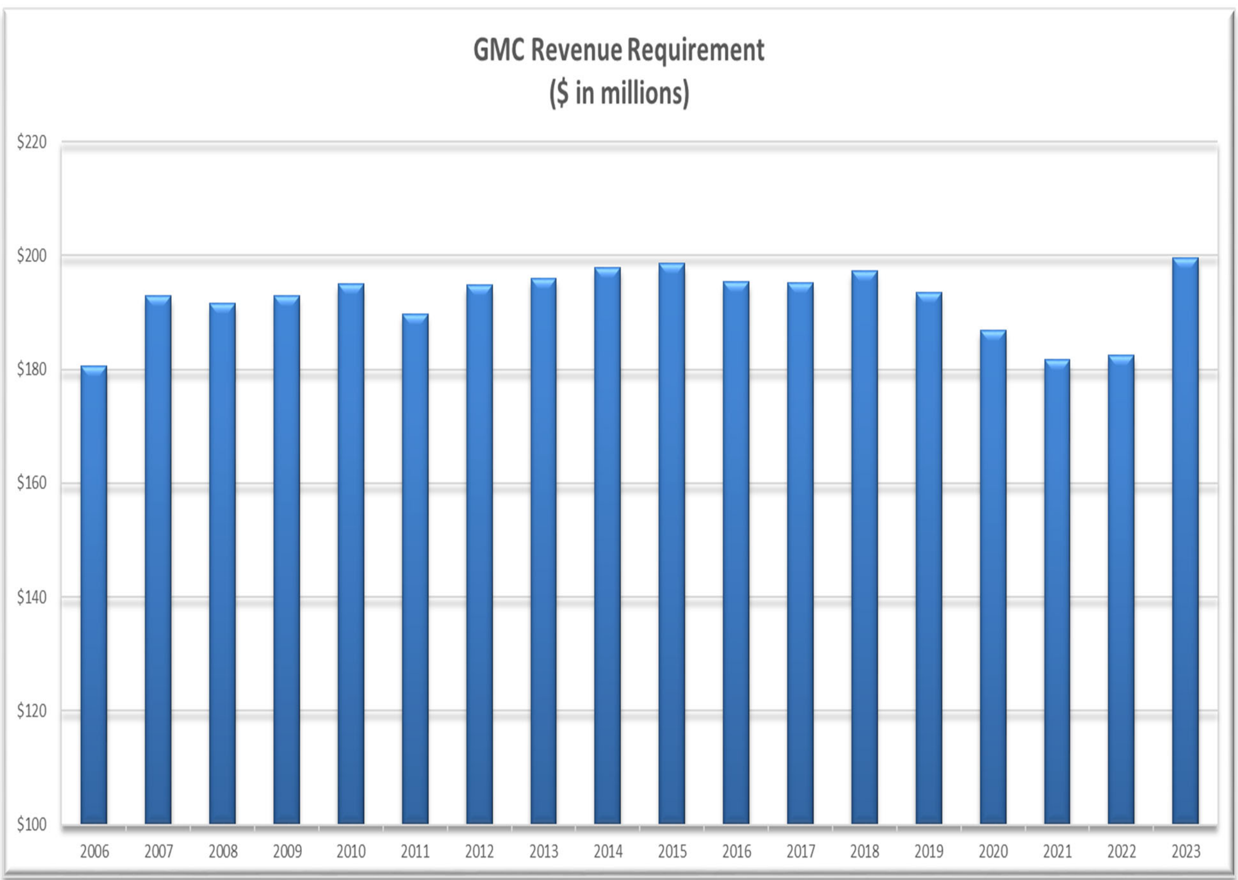
I. 2023 GMC Revenue Requirement Summary

The grid management charge (GMC) revenue requirement is the means in which the ISO recovers its net operating costs. The proposed 2023 GMC revenue requirement is $199.7 million; this represents a $17.1 million increase over the 2022 GMC revenue requirement. The operations and maintenance (O&M) budget component of the revenue requirement is the main driver of the increase in the GMC revenue requirement.   The 2023 O&M budget is 13% higher than 2022 primarily due to higher labor costs driven by inflationary pressures and funding for 52 new positions intended to address strain points within the organization. The ISO will offset some of the operating cost increase through continued growth in the other revenue categories, a smaller collection of capital, and a sizeable return of funds through the operating reserve credit.



Fiscal discipline remains a priority for the ISO, as evidenced by its history of stable growth of the GMC revenue requirement. Over the years, the ISO has absorbed several major initiatives over the recent years with no material impact to the GMC revenue requirement. The initiatives include launching the market redesign and technology upgrade (MRTU), constructing its secure primary and secondary locations, implementing the energy management system (EMS), as well as launching the Western Energy Imbalance Market (WEIM) and reliability coordinator services (also known as RC West). The recent years' declining trend in the net revenue requirement was a function of other offsetting revenue growing at a pace faster than expense inflation. The 2023 net revenue requirement is the first revenue requirement in five years in which expenses significantly exceed offsetting revenue projections, resulting in a 9% increase in the GMC revenue requirement.

Components of 2023 GMC Revenue Requirement

A summary of the 2023 GMC revenue requirement compared to 2022 follows.

GMC Revenue Requirement ($ in millions)	2023 Budget DRAFT	Change in Versions	2023 Budget	2022 Budget	Change $	Change %
Operations & Maintenance Budget	$237.3	$1.1	$238.4	$210.7	$27.7	13%
Debt Service (including 25% reserve)	14.7	-	14.7	14.7	0.0	0%
Cash Funded Capital	22.0	(1.0)	21.0	30.0	(9.0)	-30%
Other Costs and Revenues	(57.5)	(0.1)	(57.6)	(53.7)	(3.9)	7%
Operating Cost Reserve Adjustment	(16.9)	0.1	(16.8)	(19.1)	2.3	-12%
Total GMC Revenue Requirement	**$199.6**	**$0.1**	**$199.7**	**$182.6**	**$17.1**	**9%**
Transmission Volume Estimate in TWh	234.2	0.0	234.2	233.5	0.7	0%
Pro-forma bundled cost per MWh	**$0.8523**	**$0.0004**	**$0.8527**	**$0.7820**	**$0.0707**	**9%**

The draft final version of the GMC revenue requirement is $0.1 million higher than the draft version released in October 2022. The change in the revenue requirement is due to an increase in the O&M budget and a slight reduction in the operating cost reserve credit. These increases were offset by a reduction in the cash funded capital collection and an increase in other revenue. The additional O&M budget is driven by two additional positions, additional consultant needs, and additional maintenance support. The decrease in the operating cost reserve credit is due to the change in the O&M budget reserve. The cash funded capital request was reduced by $1 million to help offset the increase in the O&M budget. The other revenue increase is driven by higher projected HANA administrative and setup fees.

The O&M budget is the largest component of the GMC revenue requirement; therefore, managing it is critical to keeping a stable revenue requirement. The $27.7 million projected increase in the O&M budget is primarily due to budgeted merit and other compensation increases, additional positions, additional subscription services, higher telecommunications and maintenance expenses, higher consultant expense as well as higher travel needs and insurance premiums. The budgeted headcount will increase by 52 to 746.

Debt service costs are the principal and interest payments related to the Series 2021 bonds, and the collection of a 25% debt service reserve. The Series 2021 bonds refinanced the Series 2013 bonds which the ISO issued to build a new headquarters facility in Folsom, California and funded other capital expenditures. The debt service requirement remains at $14.7 million in 2023.

Collecting cash-funded capital as a component of the GMC revenue requirement avoids the additional costs associated with debt financing, including issuance costs, interest expense, and debt service reserves. The cash-funded capital component of the 2023 GMC revenue requirement is $21 million and the capital / project budget is $25 million. The ISO will leverage its capital reserve to fund the $4 million delta between the cash funded capital request and the capital / project budget request. The ISO has slowly built its capital reserve fund since 2010 as a means to help stabilize the GMC revenue requirement by contributing unencumbered cash-funded capital dollars to it.

Other costs and revenues are net revenues received from sources other than the GMC and reduce the overall GMC revenue requirement. These other revenues include items such as WEIM administrative charges, reliability coordinator funding requirement, intermittent resource forecasting fees, interest earnings, California-Oregon intertie path operator fees, generator interconnection fees, and the nodal pricing model fee. The 2023 other cost and revenues component is $57.6 million, an increase of $3.9M primarily due to additional RC services revenue driven by the higher GMC revenue requirement and WEIM administrative charges due to additional market participants joining in 2023.

The operating cost reserve adjustment is a resulting credit or debit from the prior full year's operations; for 2023, the adjustment is a credit due to favorable operations in 2021. In addition, in any year that the ISO operating reserve account exceeds 15% of the prospective year's O&M budget, the excess reduces the GMC revenue requirement for the following year. This adjustment also includes the 25% debt service reserve collected in 2022 and the difference between the budgeted and actual revenues and expenses from 2021. The 2023 operating cost reserve adjustment component is a $16.8 million credit.

The GMC revenue requirement will see a $17.1 million, or 9%, increase over 2022.

The ISO projects that the 2023 transmission volumes will be 234.2 TWh, which is an increase over the projected 2022 volumes. The projected volumes are based on the three-year average of actual measured demand volumes as well as year-to-date 2022 volumes. Dividing the GMC revenue requirement by the projected volumes results in a pro-forma bundled cost per megawatt-hour (MWh) of $0.8527, or a 9% increase over 2022.

The pro-forma bundled cost per MWh does not represent a single charge that the ISO uses, but is intended rather to represent a combination of charges a market participant could expect to pay if they utilized all of our grid management services, including: market services, system operations, and congestion revenue rights services. See Section X at the end of this document for the actual calculation of the rates.

II. Budget Package and Development Overview

This budget package consists of the following items:

- O&M budget (Sections III thru V)
- Debt service costs (Section VI)
- Cash-funded capital and capital / project funding (Section VII)
- Other costs and revenues (Section VIII)
- Operating cost reserve adjustment (Section IX)
- Grid management charge components (Section X).

The O&M budget, the primary focus of this report, is the largest of these components and consists of the costs incurred for annual operations. The O&M budget is presented in three separate views as noted below:

- By process — e.g., support customers and stakeholders (Section III)
- By resource — e.g., salaries and benefits (Section IV)
- By function — e.g., operational services (Section V).

Budget Guidance

The ISO's budget is collaboratively developed using feedback from its stakeholders and leadership team. The ISO held its initial 2023 stakeholder meeting in July 2022 to allow for stakeholder input prior to developing the 2023 budget. During the period of July through

November, the ISO leadership team weighed in on the development of the budget for the following year. A follow up stakeholder was held in November 2022 to allow for stakeholder input on the draft budget posted in October 2022. Notes from both stakeholder meetings are available on the ISO website[2]. The Board of Governors approved the draft final version of the 2023 GMC revenue requirement during the December 2022 board meeting.

Following its firm commitment to fiscal responsibility, the ISO utilizes the Zero-Based Budgeting (ZBB) methodology to develop its O&M budget. ZBB confronts conventional thinking and resource allocations by challenging every line item and assumption. Budget requests under the ZBB method require justification, which helps us avoid over-budgeting, double counting, and automatic budget increases. The result is a well-justified and balanced budget, which is strategically aligned with the ISO's focus going into the year.

The combined efforts contributed to the 2023 GMC revenue requirement to come in at $199.7 million, approximately $2.3 million less than the FERC approved $202 million cap. The budget funds operations and initiatives that are set forth in the ISO Strategic Plan as described below.

Aligning with the ISO's Strategic Plan

The ISO remains committed to supporting growth and change while carefully managing its operating costs. Over the past several years, the ISO has enhanced the grid to become more flexible and adaptable, as very low and zero-carbon resources are added to the system to meet state clean air and water goals.

The budget aligns with the ISO's Strategic Plan, which is a guide to meet organizational and operational goals. The plan contains the following objectives:

1. Reliably and efficiently integrate new resources by proactively upgrading operational capabilities,
2. Strengthen resource adequacy and meet California's SB100 goals through long-term transmission planning and effective coordination with state agencies,

[2] The 2023 Budget and Grid Management Charge documentation and stakeholder feedback is available on the ISO website at https://stakeholdercenter.caiso.com/RecurringStakeholderProcesses/Budget-and-grid-management-charge-process-2023 .

3. Build on the foundation of the Western Energy Imbalance Market to further expand Western market opportunities,
4. Provide highly responsive and inclusive stakeholder engagement and customer service, and
5. Create a flexible and adaptive work environment that retains and attracts a highly skilled and engaged workforce.

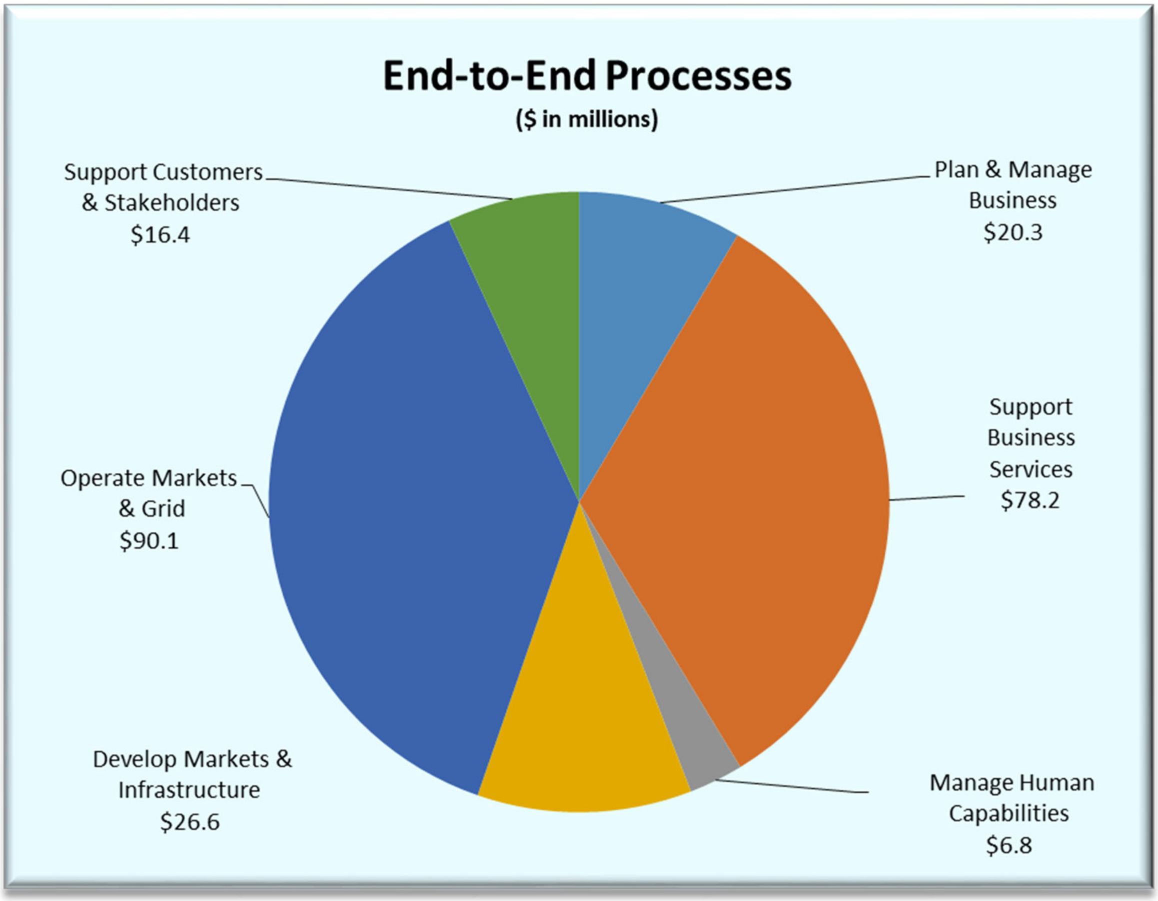
The Strategic Plan provides employees and managers our common goals while the budget explains how the ISO funds and allocates its resources to support its business plans. The budget is built upon a balanced mix of staffing, skills and financial resources.

Aligning the strategic planning process with budget planning provides greater transparency into the ISO's resources and business and operation costs. The ISO remains steadfast in its efforts to manage costs and utilize corporate resources in a smart and prudent manner.

III. O&M Budget - Process View

The ISO uses an activity-based costing system to provide greater transparency and granularity in how the budget supports corporate efforts. In support of this system, all employees record time worked each week to activities that roll-up to the six primary processes described below.

Aggregating the time reported by employees results in percentages for each of the processes that represent the percentage of total resources spent on that process. Using the hours from the first nine months of 2022, the resulting percentages are then applied to the 2023 O&M budget. The results represent the costs for the six processes as shown below.



Plan and Manage Business

The **plan and manage business** process amounts to 8% of the O&M budget, and consists primarily of the activities related to strategic planning, governance, financial planning and project management.

Support Business Services

The **support business services** process amounts to 33% of the O&M budget, and is comprised primarily of the activities related to information technology, financial, legal and compliance support services.

Manage Human Capabilities

The **manage human capabilities** process amounts to 3% of the O&M budget, and consists of five primary end-to-end processes that combine to ensure the ISO attracts and retains the skills and talent necessary to achieve business objectives. The processes are compensation, benefits, recruitment, training and development, and employee relations.

Develop Markets and Infrastructure

The **develop markets and infrastructure** process group amounts to 11% of the O&M budget, and includes two separate processes that support the creation of value-added enhancements to the market design, as well as to proactively plan and facilitate grid upgrades. Activities in these processes include the review and analysis of the efficiency and quality of market results, identifying needed market design improvements, and transmission and generation interconnection planning.

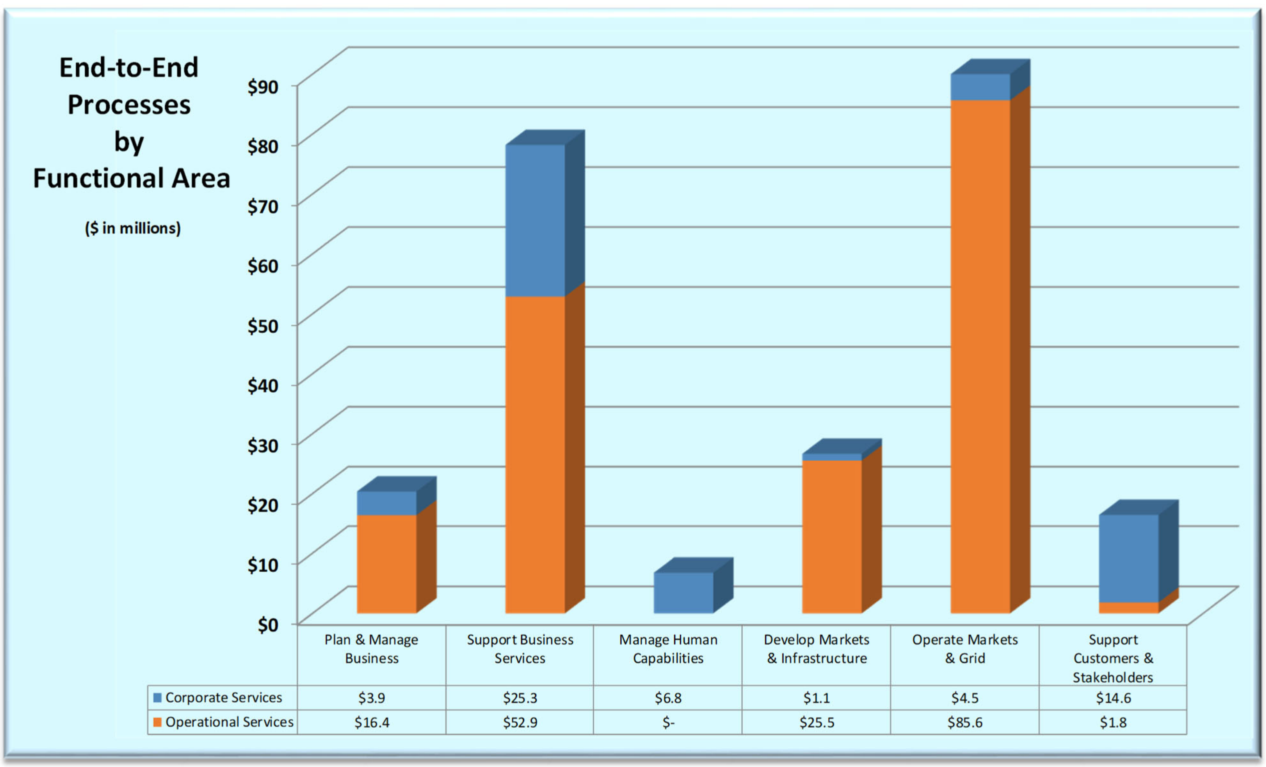
Operate Markets and Grid

The **operate markets and grid** process group amounts to 38% of the O&M budget, and includes three separate processes: 1) manage market and reliability data and modeling; 2) manage markets and grid; and 3) manage operations support and settlements.

Support Customers and Stakeholders

The **support customers and stakeholders** process amounts to 7% of the O&M budget, and consists primarily of the activities related to client and account management, stakeholder processes, government and regional affairs, and communications.

A look at the allocation of process costs by function follows.

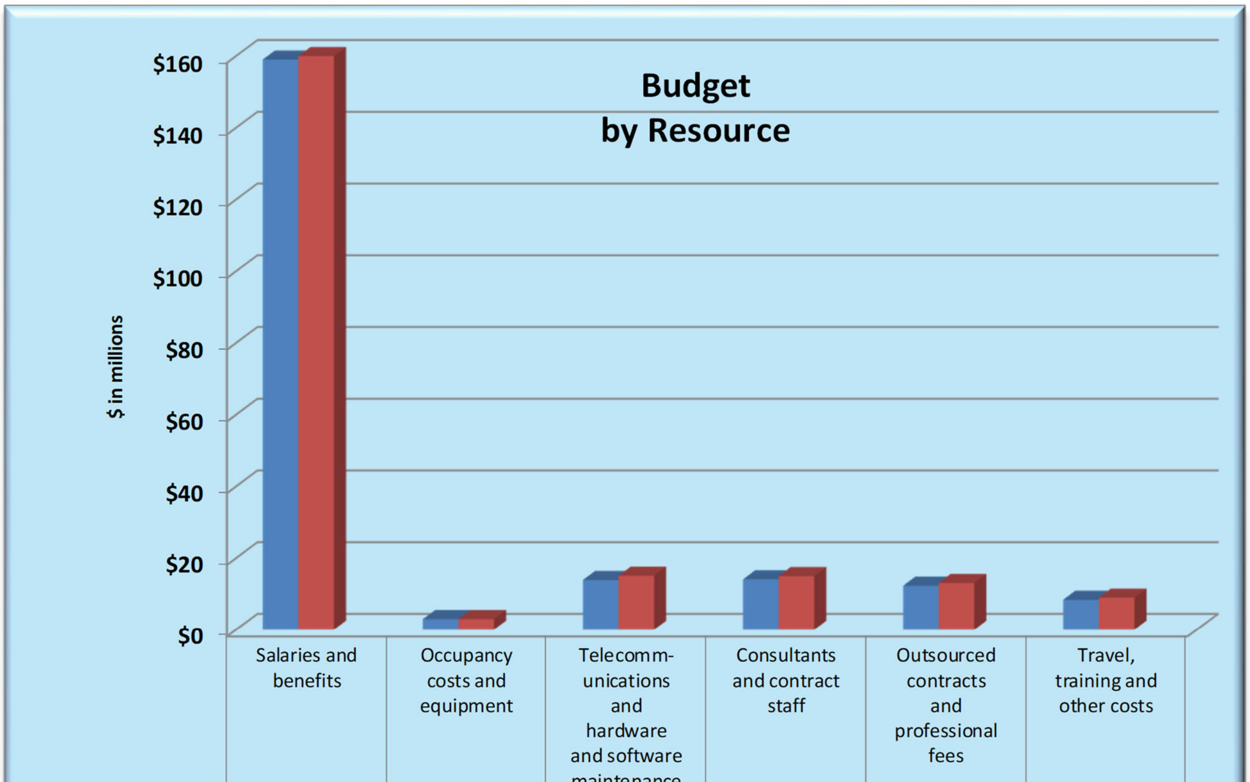


	Plan & Manage Business	Support Business Services	Manage Human Capabilities	Develop Markets & Infrastructure	Operate Markets & Grid	Support Customers & Stakeholders
Corporate Services	$3.9	$25.3	$6.8	$1.1	$4.5	$14.6
Operational Services	$16.4	$52.9	$-	$25.5	$85.6	$1.8

IV. O&M Budget - Resource View

This section views the O&M budget in the traditional resource categories in which expenses are classified. The 2022 budget reflects reclassifications in order for it to be comparable to the 2023 budget presentation.

The chart below shows the major resource components.



	Salaries and benefits	Occupancy costs and equipment	Telecomm-unications and hardware and software maintenance	Consultants and contract staff	Outsourced contracts and professional fees	Travel, training and other costs
2022 Budget	$159.0	$3.0	$13.9	$14.1	$12.3	$8.4
2023 Budget	$183.2	$3.0	$15.1	$15.0	$13.1	$9.0
Change from 2022	$24.2	$-	$1.2	$0.9	$0.8	$0.6

Salaries and Benefits

The ISO depends on its highly educated and experienced employees to operate the grid and support market functions, which makes staff a critically important resource. To that end, the salaries and benefits category comprises 77% of the 2023 and 75% of the 2022 budgets.

The staffing plan concentrates on attracting and retaining the best and brightest individuals in the industry. At times, the ISO revises the organizational structure to help keep pace with changing resource needs. The ISO also makes periodic organizational changes to align resources to focus on the important matters identified in the company's Strategic Plan, and better reflect end-to-end business processes.

The budgeted staffing level for 2023 is 746 employees, which is an increase of 52 positions over the 2022 budgeted staffing level. The 2023 staffing level increase addresses the needs for additional assistance communicated by ISO Management and stakeholders in multiple divisions (as illustrated in the projected staffing levels chart below).

A summary of the budgeted headcount for 2023 and 2022 is as follows.

Staffing Levels*	2023 Budget	2022 Budget	Change
Corporate Services			
Chief Executive Officer	20	20	-
Finance	21	21	-
Human Resources	17	15	2
General Counsel	39	36	3
External Affairs	23	18	5
Stakeholder Engagement and Customer Experience	29	25	4
Sub-Total	**149**	**135**	**14**
Operational Services			
Chief Operating Officer	55	55	-
Infrastructure and Operations Planning	118	112	6
Power Systems and Market Technology	188	169	19
System Operations	176	171	5
Market Policy and Performance	60	52	8
Sub-Total	**597**	**559**	**38**
Gross Headcount	**746**	**694**	**52**
Less Program Office Staff Included in Capital	(5)	(5)	-
Net Headcount	**741**	**689**	**52**

The 2023 budget includes a 1.5% vacancy factor discount in the salary budget for selected divisions that experience higher vacancies throughout the year.

Staffing Related to Capital

As in past years, the O&M budget does not include the costs of full-time equivalent (FTE) staff dedicated to capital projects, which are included in the capital budget. The capitalizable expense related to the FTE is equivalent to five full-time staff in the Chief Operating Officer (COO) division's Enterprise Program Management Office. The cost of other staff engaged in capital projects is budgeted in their respective cost centers; however, the financial statements that are prepared in accordance with generally accepted accounting principles include the capitalization of this labor.

Compensation Structure

The compensation budget includes funding for employee base salaries, payroll taxes, and healthcare benefits; as well as other compensation elements, such as overtime, performance compensation, relocation reimbursement and tuition reimbursement. The budget also includes funds for salary adjustments for merit, equity and market adjustments. These costs have been budgeted for each position.

In setting the annual merit, equity and market adjustments budget, the Human Resources department participates in salary surveys administered by qualified third-party vendors. These vendors confidentially gather information related to competitive market pay rates. The ISO's ability to attract and retain talent with the necessary skills and knowledge directly links to our ability to maintain competitive pay practices.

The total compensation packages provided to employees include performance compensation with payouts in the subsequent year based on individual and corporate performance.

A summary of the compensation components is as follows.

Compensation Components With Benefits Burden ($ in millions)	**2023 Budget**	**2022 Budget**	**Change**
Base Compensation	$152.2	129.4	$22.8
Overtime (includes structured overtime for grid operators)	$7.5	8.1	($0.6)
Performance Compensation	$21.5	19.5	$2.0
Other	$2.0	2.0	$0.0
Total Personnel Expense	**$183.2**	**$159.0**	**$24.2**

The 2023 employee benefits burden will reduce from 34.5% to 32% of salary costs as summarized in the table below. There are a few drivers helping the ISO to achieve a lower overall benefit burden rate. These drivers include improved claims history, improved cost controls achieved thru the self-funded insurance program, minimal premium increases offered through some benefit providers, and leveraging the self-funded healthcare reserve to help offset some premium costs. The ISO will continue to manage contracts, prudently, to ensure these benefits are available to eligible employees with the costs primarily depending on employee population levels and participation.

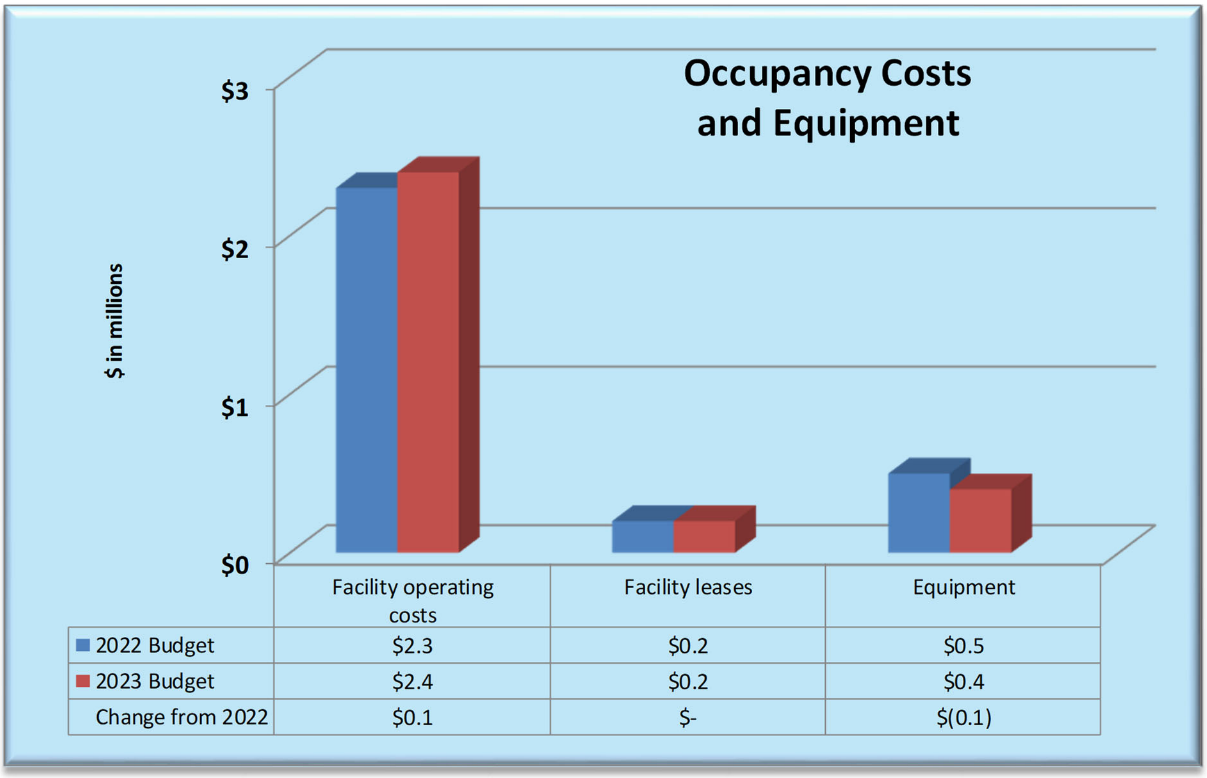
The benefits burden is broken down as follows.

Benefits	Components	Rate
Health, Welfare, and Other Plans	Medical, dental and vision insurances. Also includes employee assistance program, life insurance, accidental death insurance, long-term disability insurance, and worker's compensation.	9.0%
Payroll Taxes	Social security, medicare, unemployment insurance, employment training and disability insurance.	9.0%
Retirement Benefit Plans	Retirement savings benefit plan (401(k)) and executive retirement plans.	14.0%

Occupancy and Equipment

Occupancy and equipment costs will remain level at $3.0 million for 2023. These costs represent 1% of the 2023 and 1% of the 2022 budgets.

This resource category consists of the various ongoing costs to operate the facilities and related equipment.

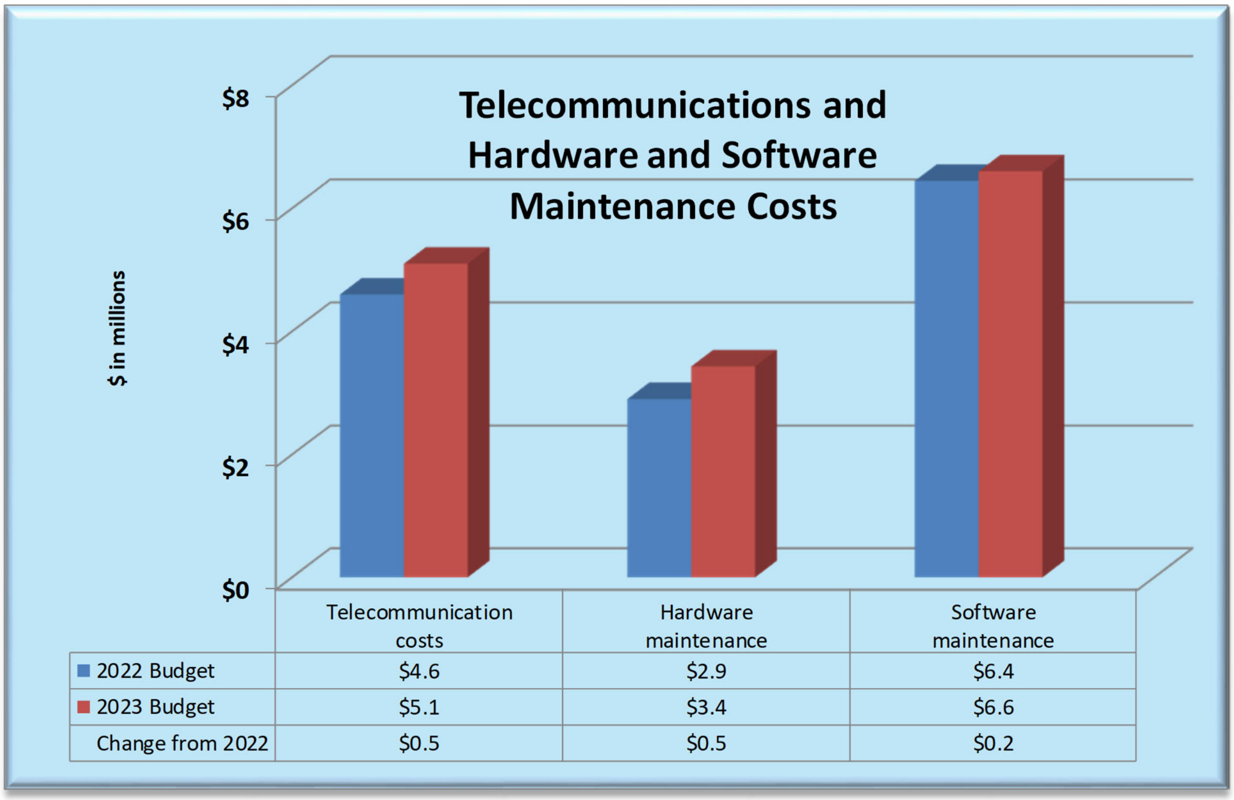


The nominal increase in facility operating costs is due to enhanced audio/visual maintenance support.

The nominal decrease in equipment costs is due to mobile device contract timing.

Telecommunications and Maintenance

Telecommunications and maintenance costs will increase by $1.2 million to $15.1 million for 2023. These costs represent 6% of the 2023 and 7% of the 2022 budgets.



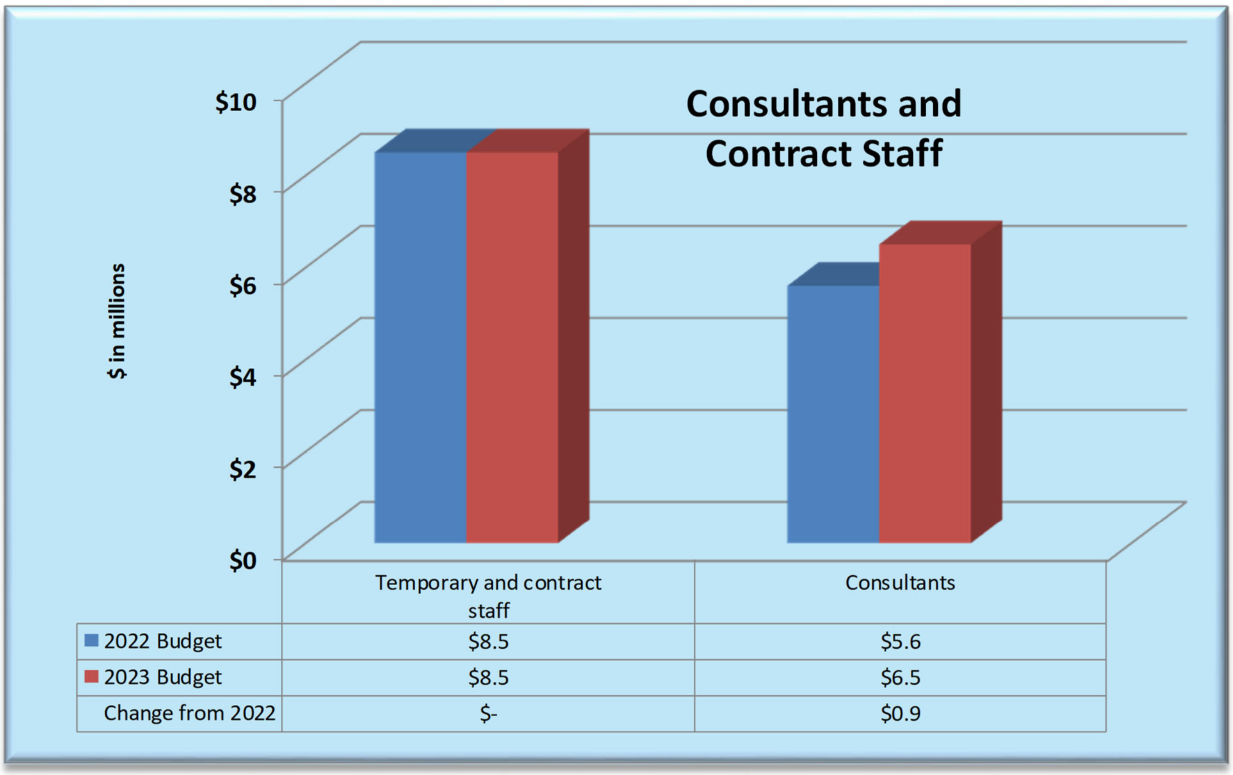
Telecommunication costs, which include wired and wireless services, will increase $0.5 million for 2023. The increase is primarily due to a new backup network service for the reliability coordinator services.

Hardware maintenance costs will increase $0.5 million for 2023. The increase is primarily due to support for enhanced firewall and network equipment.

Software maintenance costs, which are primarily licensing fees, will increase $0.2 million for 2023. The increase is due to additional data center licensing growth.

Consultants and Contract Staff

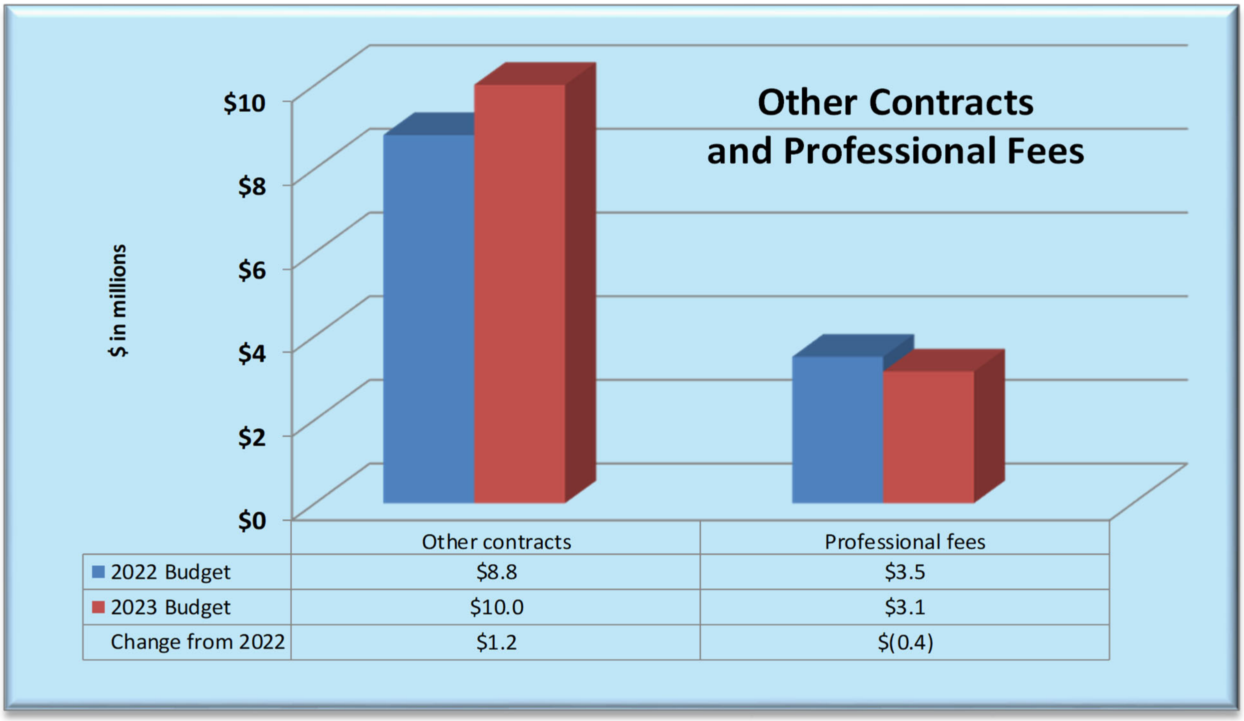
Consulting and contract staff costs will increase by $0.9 million to $15.0 million for 2023. The consulting and contract staff budgets represent 6% of the 2023 and 7% of the 2022 budgets.



The ISO regularly evaluates how to meet its responsibilities while remaining cost-effective and providing the highest service quality whether through hiring full-time employees or using outside resources (e.g., contractors, consultants or temporary staff). At times, the ISO may bring contractor work in-house when it is of an ongoing nature and lowers the overall cost with the same or better service quality. Examples of efforts requiring budget in 2023 include resource adequacy studies, process assessments, training, day-ahead-market studies, technology and operations applications maintenance, and the need for subject matter experts in various fields such as renewable integration.

Other Contracts and Professional Fees

Outsourced contracts and professional fees will increase by $0.8 million to $13.1 million for 2023. The budget category represents 6% of the 2023 and 2022 budgets.



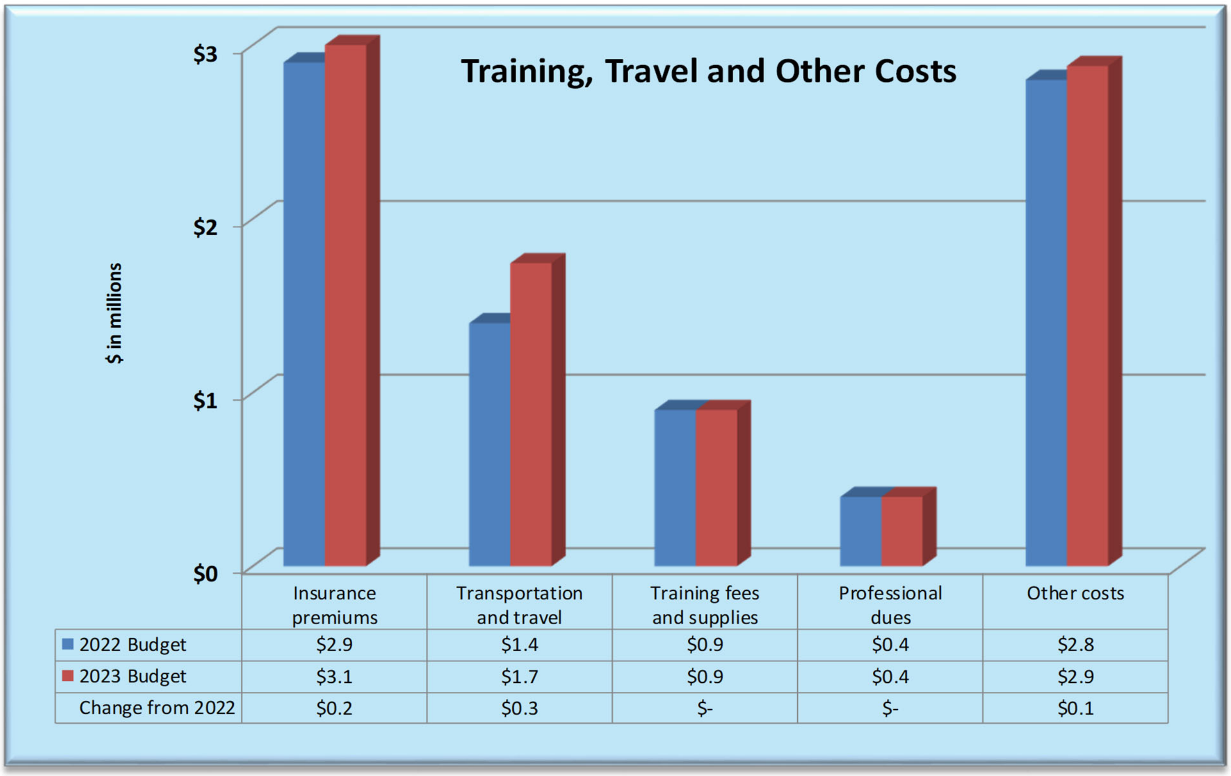
Other contracts, which represent contracts with third-party vendors for services, will increase by $1.2 million in 2023. One driver being additional tools needed to support enhanced information security. Another driver is transition to subscription-based licenses and increased license counts for applications.

A large component of the other contracts resource category is our forecasting costs. Intermittent resources pay a forecasting fee to the ISO of $0.10 per megawatt hour of generation. These fees, collected from the variable resources, are included in the other costs and revenues component of the GMC revenue requirement to offset the related forecasting costs. Such fees are projected to bring in $5.5 million in revenue in 2023.

Professional fees, which are largely outside legal and audit costs, will decrease by $0.4 million for 2023. The decrease is primarily due to reduced negotiated rates for audit services.

Training, Travel and Other Expenses

Training, travel and other costs will increase $0.6 million to $9.0 million for 2023. These budgets represent 4% of the 2023 and 2022 budgets.



Insurance premiums, which include all of the corporate liability and property policies, will increase $0.2 million for 2023.

Transportation and travel will increase $0.3 million for 2023. The increase is primarily due to resumption of travel for operational services and regional efforts.

Training fees and supplies and professional dues remain unchanged for 2023.

Other costs (primarily bank fees, conference fees, office supplies, Board, and stakeholder meeting costs) when combined, will increase nominally for 2023.

Reconciliation of 2023 O&M Budget

The O&M budget will increase by $27.7 million, or 13%, to $238.4 million in 2023 compared to $210.7 million in 2022.

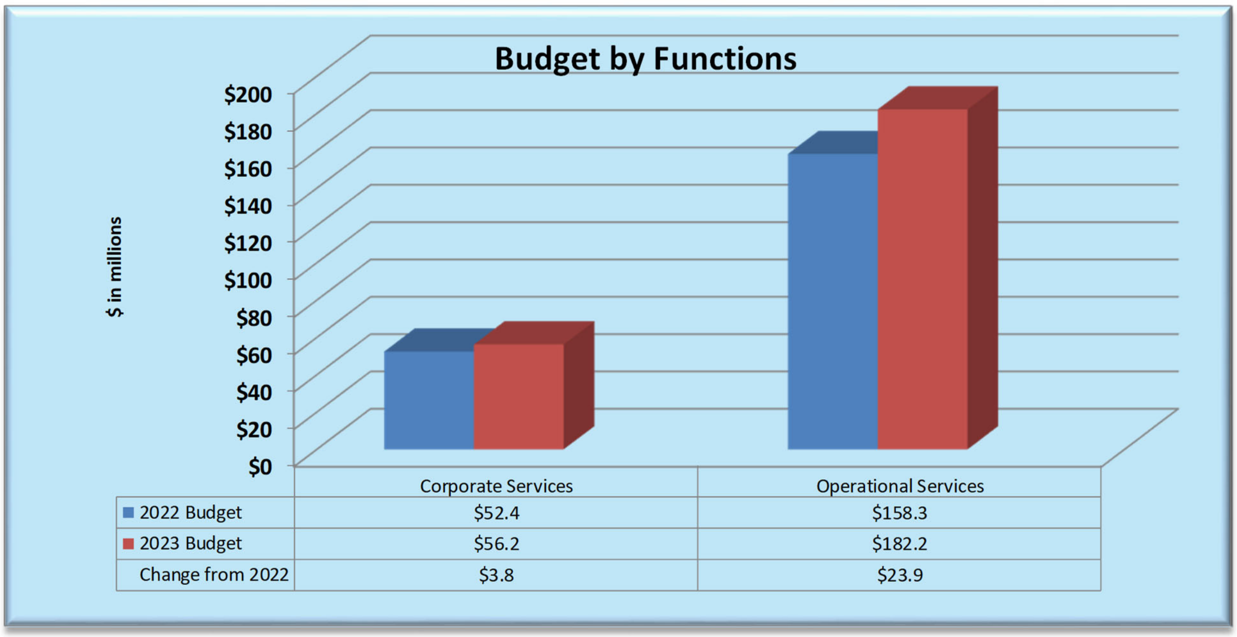
A reconciliation of the change follows ($ in millions).

2022 O&M Budget	**$210.7**
Increases in the Budget	
Merit, headcount, and other compensation increases	24.8
Increase in other contracts and services	1.2
Increase in telecommunication & hardware/software maintenance	1.2
Increase in consultants	0.9
Increase in travel, office, board costs, and other costs	0.4
Increase in insurance	0.2
Total Increases	**28.7**
Decreases in the Budget	
Reduction in overtime	(0.6)
Reduction in professional fees	(0.4)
Total Decreases	**(1.0)**
Net Change in Budget	**27.7**
2023 O&M Budget	**$238.4**

V. O&M Budget – Functional View

The ISO divisions represent two high-level functions in the organization – Corporate Services and Operational Services. This section will present the O&M budget broken into the functions. The 2022 budget reflects classifications in order for it to be comparable to the 2023 budget presentation.

The budget by functions follows.



	Corporate Services	Operational Services
2022 Budget	$52.4	$158.3
2023 Budget	$56.2	$182.2
Change from 2022	$3.8	$23.9

The divisions contributing to the Operational functions account for a combined 76% of the 2023 O&M budget. Whereas the divisions contributing to the Corporate Services functions account for a combined 24% of the 2023 O&M budget. In all divisions, with the exception of the technology related groups, the typical driver of year-over-year changes are labor related costs. While labor costs are also a main driver in the technology related groups, many of the other resource categories can have an impact on their budget as well (e.g., hardware and software maintenance costs). A detailed description of the divisions grouped by the functions follows.

Corporate Services

The divisions that contribute to the **Corporate Services** functions include the office of the Chief Executive Officer, the Finance division, the Human Resources division, the General Counsel division, the External and Customer Affairs division, and the Stakeholder Engagement and Customer Experience division.

The office of the **Chief Executive Officer** (CEO) division collaborates with the executive leadership team in developing the ISO's strategic goals and organizational priorities. The division also leads in the crafting and articulation of the ISO's mission, vision, and values, and serves as a convener and catalyst in carrying out a host of institutional initiatives. The CEO is the primary contact to the Board of Governors, Western Energy Imbalance Market Governing Body, key elected officials, stakeholders, and the general public, while also representing the ISO with a variety of regional and national energy related organizations.

The **Department of Market Monitoring** (DMM) proactively undertakes sophisticated analysis to enhance market efficiencies and mitigate market power. This effort is especially important as the ISO implements new market features and services to support renewable resource development. The department actively monitors the wholesale energy markets to prevent non-competitive behavior and ensure participants follow the rules. The DMM also reviews market results to confirm the activity produces effective and efficient outcomes. The department continues to review and provide feedback on the effectiveness of the 15-minute/5-minute markets and the Western Energy Imbalance Market (WEIM). The DMM offers timely input on major market design initiatives, as well as products and requirements to ensure sufficient flexible capacity is available to integrate increasing amounts of variable renewable energy. The DMM Oversight Committee and the Board of Governors separately review and approve the DMM budget (which is included in the CEO division).

The **Finance** division is comprised of various financial functions including treasury, credit, accounting, financial planning and procurement. Finance professionals in the division perform typical corporate finance processes such as balance sheet optimization, credit and collateral management, clearing of the ISO market, general accounting, financial reporting, financial planning, budgeting, rate design, and procurement of goods and services for the corporation.

The **Human Resources** division directs programs and people strategies to deliver a unique employee experience that is integrated within our corporate strategic objectives and goals. These efforts include creating and maintaining an intentional culture; attracting, retaining and cultivating technical experts and leaders; implementing robust learning and development opportunities; and creating an environment where diverse perspectives help improve the ISO's performance.

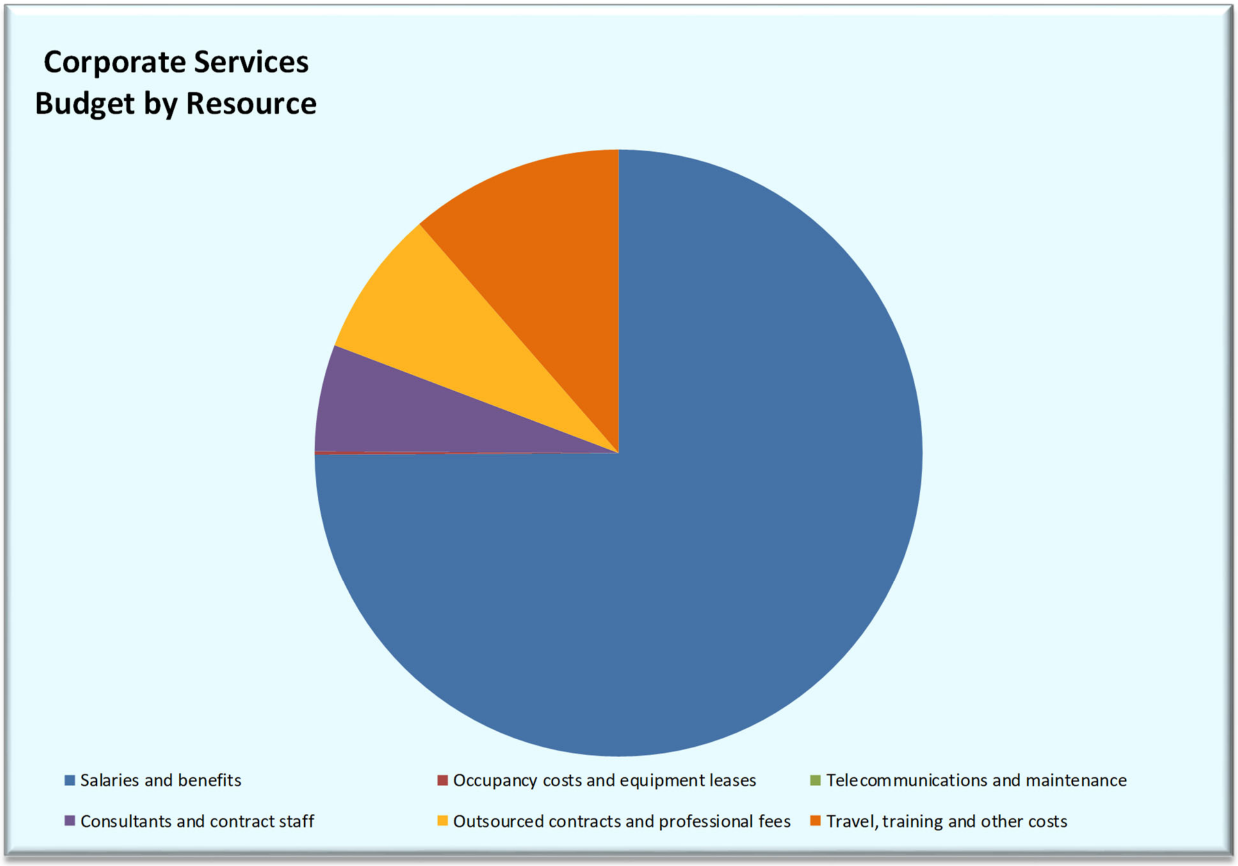
The **General Counsel** division is comprised of four departments, which collectively provide legal and regulatory advice to the Company; promote a culture of compliance with pertinent laws, regulations and corporate policies; provide auditing and advisory services and facilitates the development of the ISO's Strategic Vision. The General Counsel division includes the Corporate Secretary function, which supports the Board of Governors, Board committees, and the Western Energy Imbalance Market Governing Body, and facilitates and coordinates meetings and all corporate governance matters.

The **External Affairs** division is comprised of external facing business groups including state, regional, federal affairs as well as communications and public relations. It interacts with elected state officials, regional entities, regulators, and industry organizations in the West, federal lawmakers, and international delegations to enhance their understanding of grid operations and other services provided by the ISO. The division supports the WEIM governance structure and committees, monitors western state and federal regulations, legislation, initiatives and activities. In doing so, it promotes the benefits of regional coordination throughout the Western Interconnection. Additionally, the communications and public relations department oversees media relations, and uses printed, digital, online, and video materials to communicate to external and internal audiences. This group maintains the ISO's internal and external websites, and develops all communication materials, to promote transparent and accessible information.

The **Stakeholder Engagement and Customer Experience** division is the primary business contact between the ISO, its customers, and industry stakeholders. The division provides customer bid-to-bill support, new participant onboarding, training, and customer readiness support. It also oversees the stakeholder process ensuring robust stakeholder engagement in the development of policy initiatives.

Summary of Budget

Labor costs represent the largest budget driver for each division. Highlights of the key non-labor budget components within the Corporate Services divisions are as follows.



The primary non-labor cost drivers in each division are:

- **CEO** division: corporate memberships, association fees, and consulting
- **Finance** division: insurance premiums, financial audit, and bank fees
- **Human Resources** division: corporate training, recruitment, and payroll services
- **General Counsel** division: outside legal and board expenses
- **External Affairs** division: corporate subscriptions, travel, and legislative and public relations support
- **Stakeholder Engagement and Customer Experience** division: stakeholder meetings and customer training

Operational Services

The divisions that contribute to the **Operational Services** functions include the office of the Chief Operating Officer division, the Infrastructure and Operations Planning division, the Power Systems Market Technology division, the System Operations division, and the Market Policy and Performance division. The functions also include the Enterprise Systems and Campus Operations department and the Program and Applications Management department.

The over-arching **Chief Operating Officer (COO)** division is a compilation of the office of the Chief Operating Officer (including the Enterprise Support and Campus Operations and Program and Application Management departments), Infrastructure and Operations Planning, Power System and Market Technology, System Operations and Market Policy and Performance divisions. The combination of these divisions and departments under the COO's leadership enables greater integration and coordination across these functions to support the ISO's efforts to meet organizational goals.

The **Infrastructure and Operations Planning** division is responsible for long term and operational grid planning activities to support the growth in renewable resources and maintaining and strengthening grid reliability. These activities include conducting the annual assessment of summer conditions. The division leads the generation interconnection application and contracting process, performs studies for resources seeking to interconnect to the grid, and manages all regulated contracts on behalf of the organization. The division promotes timely and efficient infrastructure development and service-focused maintenance program oversight. It is responsible for complying with NERC standards and WECC regional criteria for the planning coordinator functional entity and the operational planning requirements for the Reliability Coordinator functional entity.

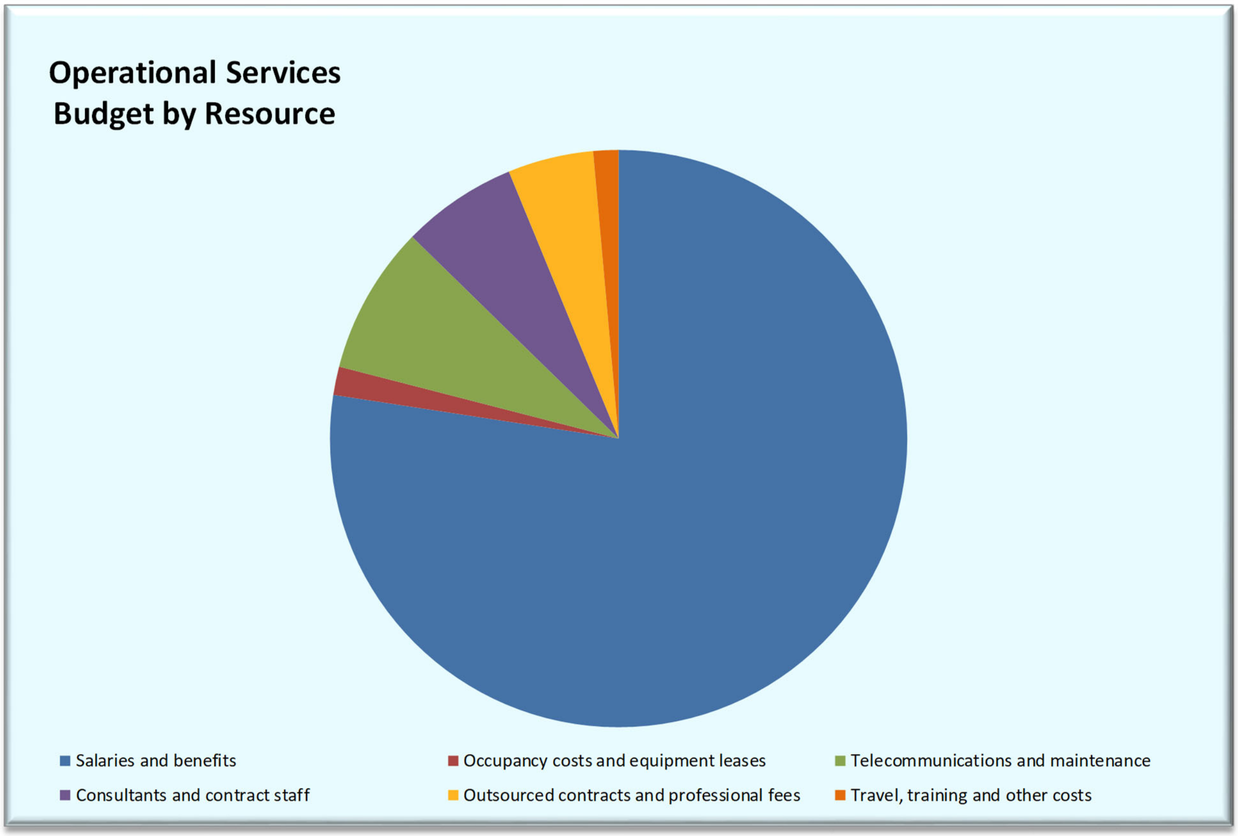
The **Power System and Market Technology** division consists of the Power System Technology Development, Power System Technology Operations, and IT Infrastructure, Architecture and Information Security departments. The Power System Technology Development department develops and implements market and reliability software applications to manage and operate the high-voltage electricity grid and wholesale energy market. The Power System Technology Operations department provides technology support for reliability systems, market systems, enterprise model management system, interchange scheduling and tagging systems, and forecasting systems. This group also provides monitoring and first level support to all of the ISO's bid-to-bill critical systems. The IT Infrastructure, Architecture and Information Security department protects the ISO's physical and cyber assets, designs new and emerging technology architecture guidelines for IT, engineers new integration technical solutions following architecture roadmap, manages IT infrastructure hardware, software, database, storage, and IT network and communications.

The **System Operations** division prepares for and manages the reliable operation of the high voltage electric system as well as managing after-the-fact settlement. The Operational Readiness department prepares for the reliable operation by coordinating the integration of all new resources and transmission facilities into the network model used by the System Operators as well as providing training to them. The System Operators oversee the day-to-day operations of the grid in compliance with federal and regional reliability standards; prevent or mitigate system emergencies in the day-ahead or real-time operations; and coordinate with adjacent reliability coordinators. After the operating date, the Operations Services, Compliance and Analysis department produces daily settlement statements; provides data validations; resolves settlements; performs reporting price corrections; and provides compliance analysis.

The **Market Policy and Performance** division is composed of three departments: Market and Infrastructure Policy, Market Analysis and Forecasting, and California Regulatory Affairs. The division is responsible for developing market and infrastructure policy; tracking and reporting on market performance; pricing analysis and validation; validation of market inputs and market enhancements; short-term load, wind, and solar forecasting; evaluating the benefits of the Western EIM; commitment costs and cost adder calculation and adders; and managing relationships with and participating in regulatory matters with the California Public Utilities Commission, the California Energy Commission, and the California Air Resources Board.

Summary of Budget

Labor costs represent the largest budget driver for each division. Highlights of the key non-labor budget components within the Operational Services divisions are as follows.



The primary non-labor cost drivers in each division are:

- **COO** division: program management support, facility operating and maintenance expense, and campus security
- **Infrastructure and Operations Planning** division: transmission planning and contracts support
- **Power Systems and Market Technology** division: hardware, software, and application maintenance support, telecommunication expense, and forecasting data subscriptions
- **System Operations** division: operations training programs and energy system data support
- **Market Policy and Performance** division: market surveillance committee expense, policy and meteorological support, and energy data subscriptions

VI. Debt Service

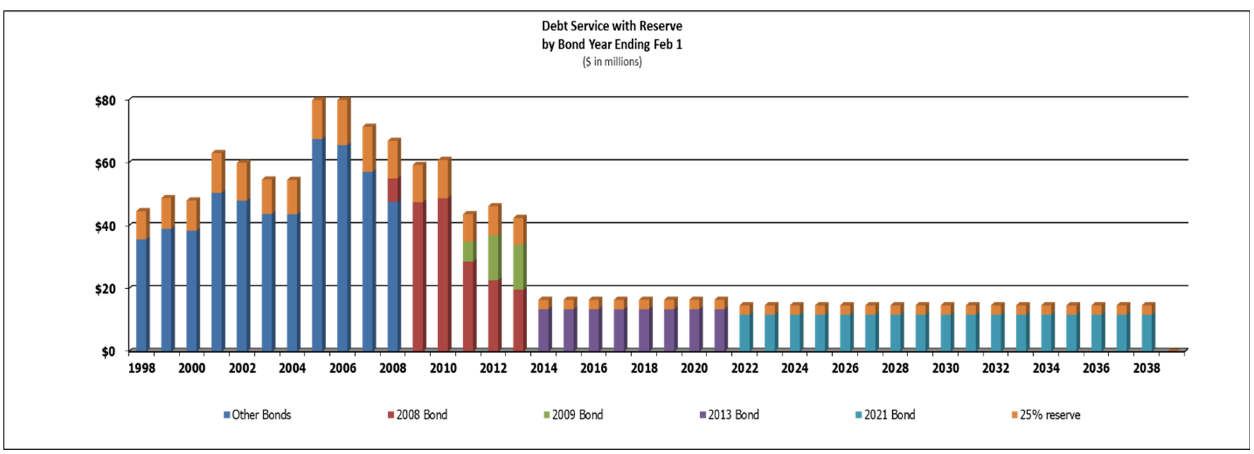
The debt service amount included in the 2023 GMC revenue requirement remains at $14.7 million. The amount includes the principal and interest payments due on the Series 2021 bonds and the 25% debt service reserve. The total equals the sum of the semi-annual interest payment due in August of the budget year, the principal and semi-annual interest payment due in February of the ensuing year, and the 25% debt service reserve amount required by the tariff and bond documents.

A summary of the debt service components is as follows.

Debt Service ($ in millions)	**2023 Budget**	**2022 Budget**	**Change**
Principal payments	$8.7	$8.7	$0.0
Interest payments	3.0	3.0	0.0
Subtotal	**11.7**	**11.7**	**0.0**
25% debt service reserve	3.0	3.0	0.0
Total Debt Service	**$14.7**	**$14.7**	**$0.0**

The Series 2021 bonds were issued in January 2021 to refinance the 2013 bonds. The refinancing of the 2013 bonds will save the ISO approximately $30 million in principal and interest over the life of the bonds. The 2013 bonds were issued to finance the ISO's headquarters facility in Folsom, California and to fund other capital expenditures. Below is the future amortization schedule for the 2021 bonds. Note: The bonds are callable on February 1, 2031.

The graph below provides a summary of the historical and future debt service.



VII. Cash-Funded Capital and Capital / Project Budget

The GMC revenue requirement's cash-funded capital component has been critical to the ISO's goal of maintaining a stable GMC revenue requirement. Historically, capital projects had largely been funded by debt financing. In 2010, the ISO converted debt service savings in the GMC revenue requirement to the cash-funded capital component. Using these collections as a way to finance capital projects removed the inefficiencies and costs associated with debt financing.

The 2023 cash-funded capital component of the GMC revenue requirement is $21 million and the capital / project budget is $25 million to fund projects such as those detailed on the following pages. The ISO will leverage its capital reserve to fund the $4 million delta between the cash-funded capital request and the capital / project budget request. The ISO has slowly built its capital reserve fund since 2010 as a means to help stabilize the GMC revenue requirement by contributing unencumbered cash-funded capital dollars to it. The Board of Governors' approval of the 2023 GMC revenue requirement will extend to the capital/project budget as well; the budget will be managed separately from the GMC revenue requirement.

The Corporate Management Committee (CMC) authorizes individual projects that will be funded by the capital / project budget. The CMC includes the Chief Executive Officer, VP - Chief Financial Officer and Treasurer, and VP - General Counsel and Chief Compliance Officer. The Board of Governors will approve any projects with a requested start date in 2023 in which the accompanying budgets exceed the $25 million budget.

Future annual capital / project budgets are estimated to be approximately $22 million to $25 million per year; the budgets will be funded through the cash-funded capital component of the GMC revenue requirement and / or the capital reserves. As done in prior years, any unencumbered cash-funded capital amounts will be contributed to the capital reserves for future projects, which enables the ISO to continue to build a stable revenue requirement for an extended period.

Supplemental Projects

Several entities have signed WEIM agreements for planned implementations in 2023. The entities include Avangrid, El Paso Electric, and WAPA Desert Southwest Region. As outlined in the agreements, the WEIM entities must reimburse the ISO for costs incurred for their implementation. As the entities provide funding for their implementations, these implementation projects are not included in the annual capital / project budget.

During the ISO Board of Governor's December 2021 meeting, Management received approval to use capital reserves to fund the $15.6 million ISO settlement system upgrade project.

Capital / Project Budget Development Process

The 2023 capital / project budget development process runs from July 2022 through November 2022. The Enterprise Program Management Office collaborates with internal business units to update the enterprise priority project list throughout the year. The projects included on the list align with the corporate strategic plan, the information technology roadmap, and the market initiatives roadmap. Additionally, on an ongoing basis, strategic initiative owners and Management reviews the progress of active projects, identifies issues and risks, and proposes changes to the project list as necessary.

The project list is updated as part of the annual budgeting process to align the strategic projects scheduled for the following year. The projects are ranked to help determine the most important items, which results in an initial enterprise priority project list. The rating of each project is based on the criteria listed below. The ISO website contains additional project and release information[3].

For the 2023 project prioritization process, the ISO transitioned the scoring criteria to align with the 2022-2026 Strategic Plan replacing the previous strategy criteria with the new strategic and tactical objectives below:

- Reliably and efficiently, integrate new resources by proactively upgrading operational capabilities.
- Strengthen resource adequacy and meet California's SB100 goals through long-term transmission planning and effective coordination with state agencies.
- Build on the foundation of the Western Energy Imbalance Market to further expand Western market opportunities.

[3] The latest ISO release planning and project information is available on the ISO website at http://www.caiso.com/informed/Pages/ReleasePlanning/Default.aspx

- Provide highly responsive and inclusive stakeholder engagement and customer service.
- Create a flexible and adaptive work environment that retains and attracts a highly skilled and engaged workforce

The business and financial case criteria follows:

- Does the project require development by market participants?
- Does the project deliver cost savings?
- How much are the project implementation costs?
- Does the project reduce operations and maintenance costs?
- Does the project reduce compliance risks?
- Does the project mitigate any corporate risk?
- Does the project support corporate commitments, goals, and divisional initiatives?

Proposed Project List

The following list provides an indication of the projects proposed for initiation during 2023 within the $25 million project budget.

This list includes the following four areas presented as we have before, however these categories are under review so the titles and classification are subject to change in future listings. Current breakout is:

- Market and operational excellence,
- Enhancement of the technology foundation,
- Focus on customer service and other costs, and
- Grid evolution readiness and regional innovation opportunities.

All projects that are ready for funding will be presented to the CMC for consideration and approval. Items that the CMC consider include business case and cost-benefit to the company and market participants. The CMC approves and monitors projects on a monthly basis.

The 2023 priorities may change depending on developments during the remainder of 2022 and into 2023. The actual projects completed during 2023 will vary, including the potential addition of projects currently not on the following list, the deferral of projects on this list to future years, or the elimination of projects deemed to be unnecessary.

Project costs are categorized as follows: small projects are under $500,000, medium projects are from $500,000 up to $1 million, and large projects are over $1 million.

Proposed Projects	**Amount**
Market and Operational Excellence	
Expanded operations training center	Large
Redundant energy management network application	Large
Day ahead market (DAM) enhancements	Medium
Demand response (DER Data) integration to load forecasting	Medium
Extended day ahead market	Medium
Operations & market services functional improvements	Medium
Operations engineering tools foundational improvements	Medium
Transmission service & market scheduling priorities phase 2	Medium
WebSDK user interface improvements	Medium
Capacity procurement mechanism enhancements	Small
Integrated optimal outage coordination (IOOC) enhancements	Small
Forecast improvements and automation	Small
Renewable and load forecasts enhancement	Small
Total Market and Operational Excellence	**$10,300,000**

Enhancement of the Technology Foundation	
Miscellaneous hardware & software purchases	Large
End of life technology & vulnerability remediation	Medium
Enterprise program office internal labor	Medium
Technology systems improvements for production	Medium
Control center foundation improvement & modernization program manager	Small
Corporate and enterprise system foundational improvements	Small
Initialization funding for capital projects	Small
Market analysis foundational improvements	Small
Market software performance and robustness	Small
Topology state estimator product implementation	Small
Web service modernization	Small
Total Enhancement of the Technology Foundation	**$11,285,000**
Focus on Customer Service and Other Costs	
Facilities replacement reserve	Medium
External stakeholder systems foundational improvements	Small
Campus operations annual funding	Small
Reliability coordination advanced network applications- look ahead enhancements	Small
Reliability coordination foundational improvements	Small
Total Focus on Customer Service and Other Costs	**$1,765,000**
Grid Evolution Readiness and Regional Innovation Opportunities	
Customer ISO resource adequacy (CIRA)-foundational improvements	Medium
FERC 881 - track 1 & 2: real time reliability, operational model data	Medium
Resource interconnection management system (RIMS) and Interconnection process improvements 2021	Medium
Total Grid Evolution Readiness and Regional Innovation Opportunities	**$1,650,000**
Total Proposed Projects	**$25,000,000**

VIII. Other Costs and Revenue

Other costs and revenue will increase by $3.9 million to $57.6 million primarily due to additional revenues from the RC funding requirement and additional entities joining WEIM in 2023. This component, representing net revenues received outside of the GMC, lowers the overall GMC revenue requirement. By diversifying its revenue streams, the ISO is able to maintain disciplined growth in its revenue requirement (and ultimately favorable rates) while still developing well-rounded O&M and capital budgets that serves its needs.

The details of this component are as follows.

Other Costs and Revenue ($ in millions)	2023 Budget	2022 Budget	Change
Reliability Coordinator Funding Requirement	$19.7	$18.0	$1.7
Western Energy Imbalance Market Administrative Charges	15.3	14.1	1.2
Nodal Pricing Model Fee	8.4	8.4	-
Intermittent Resource (wind and solar) Forecasting Fees	5.5	5.0	0.5
Interest Earnings	4.0	3.8	0.2
Generation Interconnection Project Fees	2.0	2.0	-
HANA Administrative and Setup Fees	1.1	0.9	0.2
Scheduling Coordinator Application and Other Fees	0.9	0.8	0.1
California-Oregon Intertie Path Operator Fees	0.7	0.7	-
Total Other Costs and Revenue	**$57.6**	**$53.7**	**$3.9**

The 2023 RC funding requirement, calculated at $19.7 million, represents the amount of revenue the ISO requires to offset the costs it will incur to provide RC services. The RC funding requirement is calculated as a percentage, known as the RC funding percentage, of the revenue requirement. The RC funding percentage is one of the cost category percentages analyzed in the triennial cost of service study. The results of the 2019 cost of service study indicated no change to the RC funding percentage was necessary; the funding percentage remains unchanged at 9%.

The 2023 RC funding requirement, as a component of the total revenue requirement, is shown below.

Revenue Requirement ($ in millions)	**RC %**	**2023 Budget**
Operations and Maintenance Budget		$ 238.4
Debt Service (including 25% reserve)		14.7
Cash Funded Capital		21.0
Other Costs and Revenues		(37.8)
Operating Cost Reserve Adjustment		(16.8)
Revenue Requirement (prior to RC Funding Requirement)		219.5
RC Funding Requirement for January - December 2023	9%	(19.8)
Total Revenue Requirement		**$ 199.7**

WEIM administrative charges are projected to increase to $15.3 million in 2023 due to increased participation in the market. The WEIM currently has nineteen participating members in ten western states and produced over $2.9 billion dollars in gross benefits since its launch in November 2014. New participants scheduled for 2023 include Avangrid, El Paso Electric, and WAPA Desert Southwest Region.

Forecasting fees are projected to increase to $5.5 million as additional WEIM entities onboard and as indicated by prior years' trends.

All other components of this category are projected to see little to no change in 2023.

IX. Operating Cost Reserve Adjustment

The operating cost reserve adjustment for 2023 will be a $16.8 million credit. This amount will reduce the GMC revenue requirement. This component typically includes the following adjustments:

- An adjustment related to a change in O&M budget to ensure that the 15% reserve margin is maintained per the tariff.
- The return of the 25% debt service reserve collection from the prior year.
- The true-up of budget-to-actual revenues and expenses from the preceding audited year.[4]

A summary of the adjustment is below.

Operating Cost Reserve Adjustment ($ in millions)	**2023 Budget**	**2022 Budget**	**Change**
Change in the 15% reserve for O&M budget	($4.2)	($1.5)	($2.7)
25% debt service collection from prior year	2.9	3.4	(0.5)
True-up of budget to actual revenues and expenses	18.0	17.2	0.8
Total Operating Cost Reserve Credit / (Debit)	**$16.8**	**$19.1**	**($2.3)**

The calculation of the 15% reserve adjustment is below.

Change in 15% Operating Reserve ($ in millions)	**2023 Budget**	**2022 Budget**	**Change**
O&M budget	$238.4	$210.7	$28.0
Operating Reserve percentage		15%	
Total Operating Reserve	**$35.8**	**$31.6**	**$4.2**

[4] See Appendix A, Calculation of Operating Cost Reserve Adjustment, for detailed calculation information.

X. Grid Management Charge and Other Calculations

The ISO recovers its GMC revenue requirement through unbundled grid management charges (GMC). Each unbundled service has a corresponding rate, which is paid by service users. Rates are calculated by dividing each service cost by its forecasted billing determinant volume. The result is a rate per unit of use. The current design, implemented in 2012, provides for three volumetric charges and five associated fees and charges. The cost categories consist of market services, system operations, and congestion revenue rights (CRR). The design was updated in 2015, 2018, and 2021 as a result of cost of service studies.

The ISO completed its most recent cost of service study in 2020; the study used activity based costing to analyze cost and time data from 2019. The new percentage allocations and fee changes as a result of the study became effective January 1, 2021 and will remain in effect through the development of the 2023 GMC revenue requirement and resulting charges.

Components of GMC and Billing Determinants

The three service categories, five associated fees and charges, and their billing determinants are as follows:

Type	Bill Determinant	Charge Code
Grid Management Charges		
Market Service Charge	Awards in MWh or MW of supply and demand excluding Transmission Ownership Rights (TORs)	4560
Systems Operations Charge	Metered flows in MWh of supply and demand in the ISO balancing authority with the following two exceptions, TORs and qualifying exempt supply contracts	4561
CRR Service Charge	MWh of congestion	4562
Miscellaneous Fixed Fees		
Bid Segment Fee	Number of bid segments in the ISO market for supply or demand	4515
Inter-SC Trades Fee	Number of trades by scheduling coordinator (SC)	4512
SCID Fee	Monthly charge if statement produced for an SC	4575
TOR Charge	Minimum of metered supply or demand in MWh on TORs	4563
CRR Auction Bid Fee	Number of accepted bids in CRR auctions	4516

Rate Calculation

There are eight steps to calculate rates, as noted below:

1. Estimate billing determinant volumes for fees and charges;
2. Multiply volumes by rates to derive revenues for individual fees and charges;
3. Allocate over or under collection of GMC revenue to the three service categories;
4. Allocate remaining GMC revenue requirement into three service categories;
5. Deduct fee and charge revenue from associated service category costs;
6. Estimate billing determinant volumes for three service categories;
7. Deduct exempt supply volumes from system operations charge[5]; and
8. Divide residual GMC revenue requirement from step 4 by adjusted billing determinant volumes from steps 6 and 7 to derive individual service category rates[6].

[5] The 2021 GMC revenue requirement was the last revenue requirement in which supply volumes were exempt as part of the 2012 GMC redesign provisional arrangement.

[6] See Appendix B, Actual and Estimated Volumes, for detailed information.

Calculation of Service Category Rates

Component	Market Services	System Operations	CRR Services	Total
Allocation of Revenue Requirement ($ in thousands)				
Total Revenue Requirement				**$199,760**
Adjust for (over) / under collection of 2020 rates	($2,245)	($1,773)	$119	(3,899)
Remaining to allocate				203,659
Percentages	49%	49%	2%	100%
% allocation of costs	99,793	99,793	4,073	203,659
Combined costs	**97,548**	**98,020**	**4,192**	**199,760**
Deduct Fee Revenue				
Bid Segment Fees	488	-	-	488
Inter-SC Trade Fees	2,926	-	-	2,926
SCID Fees	8,874	-	-	8,874
TOR Fees	-	634	-	634
CRR Auction Bid Fees	-	-	1,377	1,377
Total Fees	**12,288**	**634**	**1,377**	**14,299**
Calculation of Recoverable Costs				
Costs Less Fees	**$85,260**	**$97,386**	**$2,815**	**$185,461**
Projected MWh Volumes				
MWh Volumes	563,335,277	449,476,312	398,702,994	
Less exempt supply	-	0	-	
Adjusted MWh Volumes	**563,335,277**	**449,476,312**	**398,702,994**	
Resulting Rates / MWh	**$0.1513**	**$0.2167**	**$0.0071**	

Calculation of Fee Revenue

Fee	Rate	Estimated Volumes	Estimated Revenue ($ in thousands)
Bid Segment Fees	$0.0050	97,570,678	$488
Inter-SC Trade Fees	1.00	2,925,875	2,926
SCID Fees (monthly)	1,500	493	8,874
TOR Fees	0.1800	3,523,659	634
CRR Auction Bid	1.00	1,377,288	1,377
Total			**$14,299**

Summary of Rates

Comparison of GMC Revenue Requirements by Service Category

($ in millions)

Charge Code	Service Category or Fee	2023 Budget	2022 Budget	$ Variance
4560	Market Service Charge	$85.2	$79.1	$6.1
4561	Systems Operations	97.4	88.4	9.0
4562	CRR Services Charge	2.8	2.3	0.5
4515	Bid Segment Fees	0.5	0.5	-
4512	Inter-SC Trades Fees	2.9	2.7	0.2
4575	SCID Fees	8.9	7.9	1.0
4563	TOR Charges	0.6	0.6	-
4516	CRR Auction Bid Fees	1.4	1.1	0.3
Total		**$199.7**	**$182.6**	**$17.1**

Comparison of Grid Management Charge Rates

($ per unit)

Charge Code	Service Category	2023 Rate	2022 Rate	$ Variance	Comments
4560	Market Service Charge	$0.1513	$0.1265	$0.0248	Rate increased compared to the 2022 rate due to higher GMC Revenue Requirement to collect for the Market Services cost category offset slightly by higher projected volumes.
4561	Systems Operations Charge	$0.2167	$0.1700	$0.0467	Rate increased compared to the 2022 rate due to the higher GMC Revenue Requirement to collect for the System Operations cost category offset slightly by higher projected volumes.
4562	CRR Services Charge	$0.0071	$0.0055	$0.0016	Rate increased compared to the 2022 rate due to the higher amount of GMC Revenue Requirement to collect for the CRR Services cost category and lower projected volumes.

Comparison of WEIM Administrative Rates

($ per unit)

Grid Management Charge	WEIM Portion	2023		2022		$ Variance
		% of GMC Service Charge	WEIM Administrative Rates	% of GMC Service Charge	WEIM Administrative Rates	
Market Services	Real Time Market	63%	$ 0.0953	63%	$ 0.0797	$ 0.0156
System Operations	Real Time Dispatch	50%	$ 0.1084	50%	$ 0.0850	$ 0.0234

Reliability Coordinator Service Rates

($ per unit)

Reliability Coordinator Service Rate	
RC Funding Requirement ($ in millions)*	$ 19.8
Projected Volumes in TWh	647.1
Projected RC Service Rate per MWh	$ 0.0305

**Funding Requirement adjusted for minimum charges*

Summary of Charges, Fees, and Supplemental Rates

($ per unit)

Charge Code	Summary of Charges, Fees, and Rates	2023 Rate	2022 Rate	Change $	Billing Unit
	Grid Management Charges				
4560	Market Service Charge	$0.1513	$0.1265	$0.0248	per MWh
4561	Systems Operations Charge	$0.2167	$0.1700	$0.0467	per MWh
4562	CRR Services Charge	$0.0071	$0.0055	$0.0016	per MWh
	Miscellaneous Fixed Fees				
701	EIR Forecast Fee	$0.1000	$0.1000	$0.0000	per MWh
4512	Inter-SC Trade Fees	$1.00	$1.00	$0	per # of trades
4515	Bid Segment Fees	$0.0050	$0.0050	$0.0000	per # of bid segments
4516	CRR Auction Bid Fees	$1.00	$1.00	$0.0000	per # of nominations and
4563	TOR Fees	$0.1800	$0.1800	$0.0000	per MWh
4575	SCID Fees (monthly)	$1,500	$1,500	$0	per # of SCID
	Supplemental Services Rates				
4564	WEIM Market Service	$0.0953	$0.0797	$0.0156	per MWh
4564	WEIM System Operations	$0.1084	$0.0850	$0.0234	per MWh
5701	RC Service Rate	$0.0305	$0.0278	$0.0027	per MWh