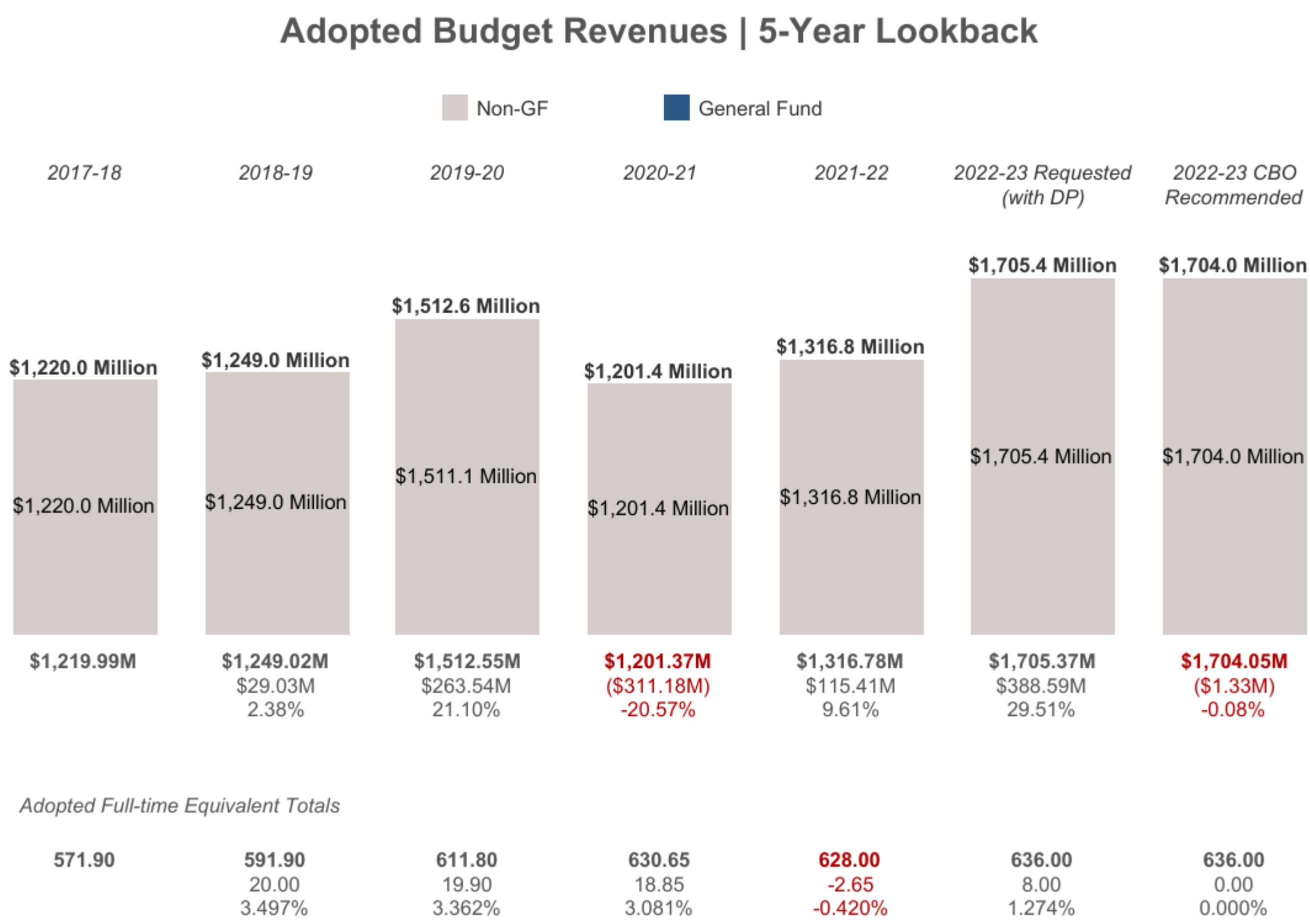
City Budget Office

Bureau of Environmental Services



EXECUTIVE SUMMARY

The Bureau of Environmental Services' (BES) FY 2022-23 Requested Budget includes $199.8 million in operating expenses and $239.4 million in capital expenses for a total budget of $439.2 million. This is a 4.7% increase from the FY 2021-22 Revised Budget of $419.5 million. The bureau's Requested Budget includes $369.8 million in beginning fund balance across all of its funds.

- There are no decision packages and no new positions in the FY 2022-23 Requested Budget, leaving the bureau's total number of FTEs authorized for FY 2022-23 at 636.

- The capital budget is increasing by 5.4% from the FY 2021-22 Revised Budget, as BES proceeds with the expansion of secondary treatment at the Columbia Boulevard Wastewater Treatment Plant (CBWTP).

BASE BUDGET & KEY ISSUES

Rate Forecast and Affordability

The FY 2022-23 Requested Budget for BES assumes a rate increase of 3.15% above the FY 2021-22 rates for the typical single-family household. This amounts to an average bill increase of approximately $2.53 per month or $7.59 per quarter. With this proposed increase, the typical single family residential monthly bill will be $82.83 per month or $248.49 per quarter. Combined with the Portland Water Bureau's requested rate of increase of 7.7%, the typical single-family household would experience a 4.9% increase above FY 2021-22 rates for a typical total combined monthly bill of $134.94, which equates to $404.82 quarterly.

The rate of increase is consistent with the 3.15% rate of increase projected in the financial plan BES submitted during the FY 2021-22 budget development process. The table below provides the projected annual rates of increase for BES, currently at 3.15% each year for the next three years and further increasing to 3.25% in the fourth year and 3.35% in the fifth year. By the end of the five-year forecast period, the typical single family residential bill is expected to increase by $13.74 to $94.04 per month or 17.11% above current (FY 2021-22) levels.

	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27
FY 2022-23 Plan	3.15%	3.15%	3.15%	3.25%	3.35%
FY 2021-22 Plan	3.15%	3.15%	3.15%	3.25%	

Despite the somewhat stable trend in the rate of increase for BES over the next five years, the increase does exceed the 3.0% increase in consumer price index for urban consumers in the West Region (CPI-U West) forecasted by the State of Oregon's Office of Economic Analysis.[1] One of the bureau's Key Performance Measures (KPM) is a measure of affordability of service. This measure assesses the typical household bill as a percentage of median household income and currently shows that BES's share of the typical bill is about 1.3% of the projected median household income. Combined with the Water Bureau portion of the bill, the total utility bill constitutes approximately 2.0% of median household income in Portland. Utility bills impact households in Portland differently. Compared to white households, communities of color, and particularly black households in Portland, typically devote a higher portion of their household income to the combined utility bill. For example, black households currently spend approximately 4.2% of their household income on their water and sewer bill compared to white households who spend about 2.1%. The FY 2022-23 requested rate would increase the portion of income spent on the combined utilities to about 4.4% for black households and 2.2% for white households.[2]

Citywide performance measures on utility bill affordability were recently added for the FY 2021-22 budget development process. These calculate the annual combined utility bill as a percentage of various income levels (mostly the lowest quintile), household types (single family residential vs. all households), and discount levels (Tiers 1 and 2). Typical single-family customers receiving a Tier 1 discount have their

[1] State of Oregon Office of Economic Analysis. 2022. https://www.oregon.gov/das/OEA/Documents/appendixa.pdf

[2] US Census Bureau, 2015-2019 American Community Survey 5-Year Estimates

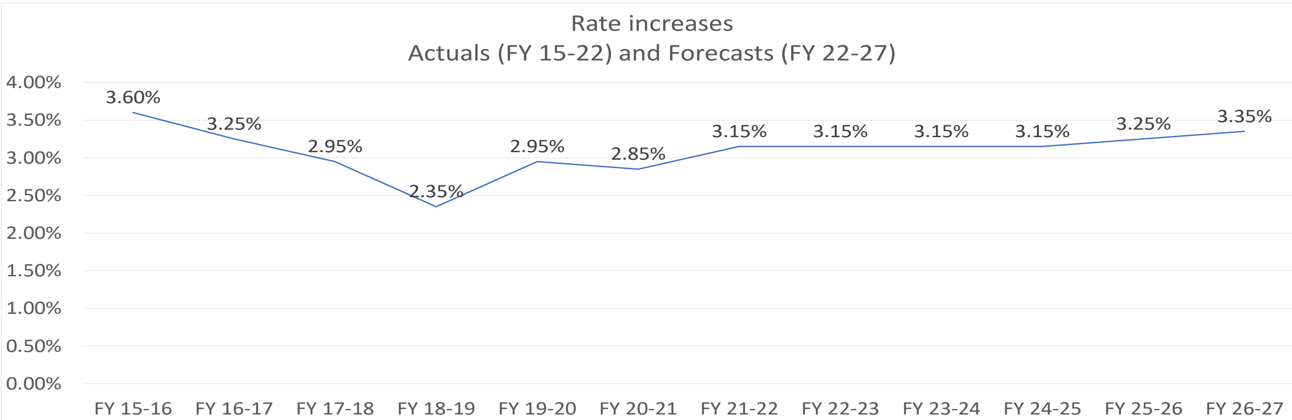
bill reduced by 50%, while Tier 2 customers receive an 80% discount. Data on actuals for the last two years and the estimate for the current year point towards slightly downward trends for all six of these new measures, which is an indication of affordability. Targets for next year are not yet available as they are dependent on census data which is expected to be released in March of 2022.

Annual combined utility bill as a percentage of	**FY 2019-20 Actual**	**FY 2020-21 Actual**	**FY 2021-22 Estimate**	**FY 2022-23 Target**
Median household income	2.40%	2.25%	2.25%	N/A
Lowest quintile of household income	6.22%	5.81%	5.52%	N/A
Lowest quintile of household income with Tier 1 discount	3.46%	3.18%	3.05%	N/A
Lowest quintile of household income with Tier 2 discount	1.81%	1.67%	1.57%	N/A
Lowest quintile of single family residential household income with Tier 1 discount	2.11%	2.02%	1.85%	N/A
Lowest quintile of single family residential household income with Tier 2 discount	1.10%	1.06%	0.95%	N/A

The lowest quintile is the income level that 20% of households make less than, or 80% of households make more than. The utility bureaus selected the lowest quintile of income based on work conducted by national organizations such as the National Association of Clean Water Agencies and the Federal Environmental Protection Agency. One of the conclusions from the data is that customers who receive bill discounts end up paying percentages of their income very similar to the median household. This means that, when accessed, the City's financial assistance programs are helping low-income households pay their utility costs at roughly the same percent as higher-income households.

It is critical to determine the most effective ways to expand accessibility of the program, as the customers in the lowest quintile of income who cannot access financial assistance are paying twice the percent of their income as the median household. These customers are either unaware of the financial assistance program or are ineligible to access it based on current program constructs. Potentially eligible participants could be living in multifamily housing with units on a single meter, paying rent but not utilities. The City does have a crisis voucher program for households living in multifamily housing which is administered by Home Forward and essentially mimics the Tier 1 discount, but customers may not be aware of its existence, resulting in lower utilization of the vouchers. CBO recommends the utility bureaus continue to promote this program in order to further access in communities with the greatest need for affordability and payment relief. To this end, the bureau has been providing monthly newsletters as well as translated resources that were posted online late last calendar year. Together with the Water Bureau and the Portland Housing Bureau, BES is working on extending Tier 1 financial assistance to multi-family dwelling units that are approved for Non-Profit Limited Tax Exemption (NPLTE).

The bureau's financial plan contains a total estimated increase of approximately $62.8 million in rate revenue requirements over the forecast period. The primary drivers of the increase are increased cash funding of the capital improvement program and higher operating and maintenance costs. While forecasted capital expenditures will require additional debt issues totaling $927 million over the five-year interval, total annual debt service will decrease as older debt issues are fully paid off.



Additional cost drivers are associated with wages and benefits, which are currently forecasted to increase at an average annual rate of 6.9% over the next five years.[3] External and internal materials and services costs are currently projected at increases of 6.1% and 3.0%, respectively. Each of these cost pools places increased pressure on the forecasted rate growth to deliver the bureau's core services while minimizing the financial impact to the ratepaying customer. In order to ensure a consistent overall rate growth of 3.15% over the next three years, BES must continue to assess the mechanisms within its rate structure to prepare and plan for well-timed debt management and Capital Improvement Plan (CIP) expenses, and appropriate utilization of the Rate Stabilization Fund (see section below for a discussion of the fund).

Rate Stabilization Fund

BES maintains a Sewer System Rate Stabilization Fund (RSF) that is used to smooth short-term budget fluctuations and to phase in increases associated with large capital projects. Looking over the long-term, the balance in the fund is forecasted to continuously increase at least until FY 2031-32, when it may reach $223.2 million. The growth of the RSF is due to many factors, including growth in System Development Charges (SDCs) and debt service reductions starting next year. The FY 2022-23 Requested Budget includes a net transfer of $5 million to the fund, while the five-year forecast indicates the transfer may be $2.1 million. Unlike the forecast submitted last year when BES expected to incrementally utilize the RSF's fund balance to smooth future rate increases over the long-term, and at the very least over the five-year forecast, the current forecast indicates that the bureau will consistently contribute to the RSF each year at least until FY 2026-27, with $32 million contributed over the five years. Prior periods of net contributions to the RSF include average contributions of $11 million annually between FY 2002-03 and FY 2007-08 and average contributions of $26 million annually between FY 2013-14 and FY 2018-19.

However, there have also been periods of net withdrawals, including between FY 2008-09 and FY 2012-13, when the transfers to the operating fund averaged $15 million each year in order to offset rate increases associated with financing the construction of the Eastside Combined Sewer Overflow Tunnel.

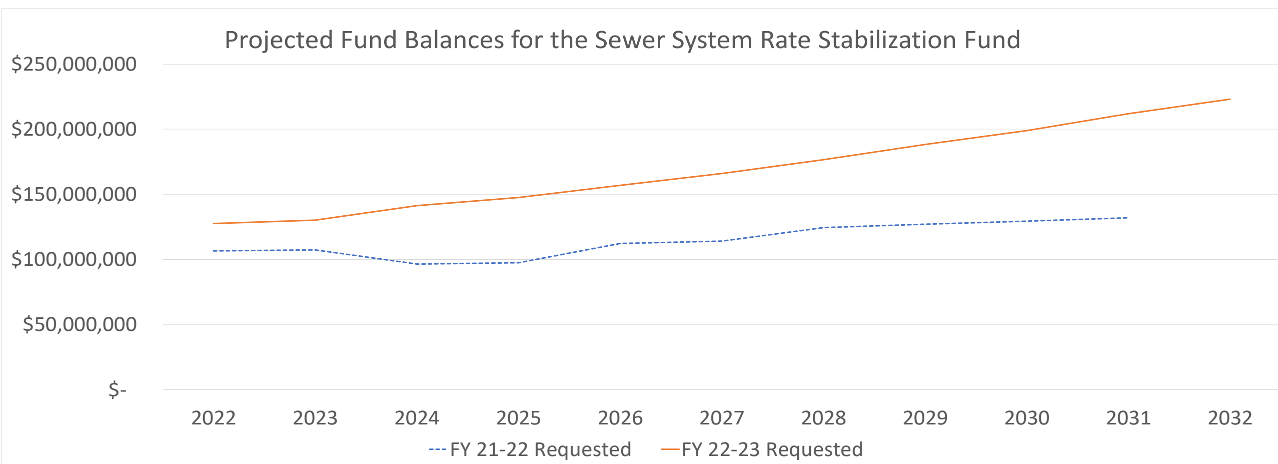
As noted above, rate increases are currently planned at 3.15% over the next three years, with higher increases in years four (3.25%) and five (3.35%). The bureau's ability to consistently grow the RSF balance at least up to FY 2031-32, and the fact that CIP expenditures in the last three years of the five-year period are projected to decrease from the highest amounts required to complete the large Secondary Treatment Expansion Program (STEP) project, suggest that perhaps the higher rate increases in years four and five

[3] Based on a projected average inflationary increase in wages and salaries of about 3.4%, an average annual increase in the number of positions of 1.4%, and an average annual increase for health care, PERS, and other benefits of 8.2%.

may not be needed, and that the bureau has enough resources to keep rates at 3.15% during those years.

However, the bureau contends that the decreases in CIP and debt service expenditures seen within the five-year period do not continue beyond those five years, as inflationary increases in operating and CIP expenditures, which also result in increasing debt service expenditures, beyond the five-year period are expected to exert pressure to increase rates to a new smoothed level. The bureau asserts that using RSF funds within the five-year period to "buy down" a rate increase would result in even higher increases in years beyond. This is due to the known expenses and risks to the forecasts, which have some degree of uncertainty in final cost exposure. Examples include the uncertain, but large, Portland Harbor Superfund costs; inflationary pressures on the operating budget and the CIP; and possible expansion of low-income programs. With these potential headwinds, BES asserts that higher RSF balances will help to keep rates stable and predictable.

Beginning in FY 2018-19, BES updated planning targets so that the combined ending balances within the operating fund and the RSF must be equal to or greater than 270 days, or 75%, of each year's anticipated operating expenses. This was done to improve the bureau's financial resiliency as well as its credit quality as assessed by rating agencies. Prior forecasts projected this measure to peak at more than 560 days of cash on hand in FY 2018-19, with a gradual drawdown over the years to 270 days by FY 2033-34. BES's current forecast projects the RSF balance may be reduced by FY 2052-53 to a level that supports the policy minimum of 270 days of operating expenses, much later than previous forecasts had indicated.



BES states that the impact of this change is that it will be able to keep rates stable beyond ten years but will also carry higher balances in the RSF to maintain the smoothing of rates. Furthermore, although the bureau believes the 270-day minimum policy is reasonable and provides the bureau with flexibility to manage risk, it is a minimum, and maintaining balances reasonably above the policy minimum is viewed positively by credit rating agencies and allows access to credit markets at the lowest possible cost.

Changes to Non-Capital Operating Expenditures in the Operating Fund

BES's FY 2022-23 operating expenditures are estimated to increase by 5.2% or $21.2 million compared to the FY 2021-22 Revised Budget. Increased expenditures are expected on personnel ($4.6 million) and materials and services ($4.3 million). Personnel services expenditures are increasing due to non-discretionary increases related to cost of living, merit increases, and from increased retirement and wage-driven taxes and benefits, including $650,000 in merit increases for non-represented employees and $250,000 for FMLA benefits based on newly enacted Oregon and Washington laws. The recent settlement with the District Council of Trade Unions is expected to generate additional costs to the bureau, but BES states that these are minimal (less than 0.5% of its personnel budget) and will be covered by vacancy savings. Significant increases in materials and services costs in the non-capital budget include:

- biosolids land application costs of $736,000
- hazardous waste/contaminated media disposal costs of $360,000
- interagency costs with the Bureau of Technology Services of $905,000
- additional security services provided by OMF-Facilities of $334,000
- property and liability insurance costs of $329,000.

Concerning the recent high inflation rates and supply chain issues, BES states that although the supply chain problems have been driving up costs somewhat, the bureau has been able to navigate the problem so far for STEP. For other projects, it is impacting schedules which also drives up costs. However, the bureau indicates that it forecasts over the long-term, and unexpected increases like these are smoothed over several years. To the extent that the inflationary impacts are higher than what it has in the forecast and remain higher, the bureau intends to adjust its assumptions accordingly. The bureau states that the problems are not a budget issue specifically for next year, but the overall impact is that it will have less resources to complete the same work over the long term. For increased costs on the operating side like chemicals, electricity, etc., it will have incorporated much of these into its budget for next year, and what has not been incorporated and to the extent its estimates are low, the bureau notes that it will look to funding from within existing appropriation before considering use of contingency.

Portland Harbor Superfund Obligations

BES is the lead agency tasked with addressing the City's responsibilities concerning the Portland Harbor Superfund site and has identified the associated sewer system-specific financial obligations as one of the main risks to the bureau's five-year forecast. The FY 2022-23 Requested Budget includes $6.8 million for Superfund response costs including staffing, community relations, technical assistance, legal advice, consulting, and remedial design work. With the release of a Record of Decision (ROD) by the US Environmental Protection Agency (EPA) in 2017, focus has turned to working with other potentially responsible parties to design the needed in-water work and developing the partnerships with other agencies and City bureaus on community outreach needed to implement the work. Under a settlement agreement with the EPA, the City and the State of Oregon established a trust to help address City and State obligations as potentially responsible parties. This settlement is designed to reduce the City's risk of enforcement action by EPA, reduce transaction costs from negotiating and performing numerous separate design agreements, and encourage timely action.

BES notes that the current year continues to be focused on the Remedy Design phase of the Superfund cleanup process, and the City is a funding party at eight project areas and a performing party at three sites. The bureau indicates that work for this phase of the project is on time and on budget and is expected to continue for the next three to four years. Three remedial design efforts are currently being managed by the bureau and will continue into FY 2022-23 and beyond. Efforts to implement Superfund projects and to monitor the site will continue for years. As the remedial design phase of the project continues, program expenditures may increase in the near-term as costs are better refined.

In addition to the Remedy Design projects, the Portland Harbor team has been involved in the out-ofcourt settlement process that is currently determining which parties will pay for what obligations. BES states that this year marked a significant point in that process representing the largest legal case the City has ever participated in. The bureau believes that this stage in the process is the most resource intensive and is estimated to continue for a few more years. Moreover, the Portland Harbor effort also has a program dedicated to public education, awareness, and increased participation in the Superfund clean-up process, specifically by those who are most impacted. This year the program awarded $180,000 in grants to eight community organizations to fund outreach, engagement, and education activities. The program also received Council approval to increase funding for the Public Involvement Grants from $100,000 per year to $500,000 per year for the next three years.

BES's budget for the effort is housed in the Environmental Remediation Fund and is funded by a dedicated Portland Harbor charge on utility bills, funds from the Citywide Obligation Reserve Fund, and supplemented by property lease revenues and interest earnings. Specifically, rate revenues of $6.2 million will fund the majority of the program in FY 2022-23, as in the current year, and will support additional post-ROD appropriations. At present, BES has 5.0 FTEs dedicated to the program.

In FY 2021-22, there is a $1.2 million transfer to the Portland Harbor Superfund reserve account in the Citywide Obligations Reserve Fund, which jointly holds funds for Portland Harbor response work from BES, the General Fund, the Portland Bureau of Transportation, the Portland Water Bureau, and Prosper Portland. The planned transfer in FY 2022-23 is $636,000. The FY 2022-23 Requested Budget includes about $1.9 million to address the City's obligation for the remedy design phase of the Superfund process, and this is funded by an equal cash transfer from the Citywide Obligation Reserve Fund.

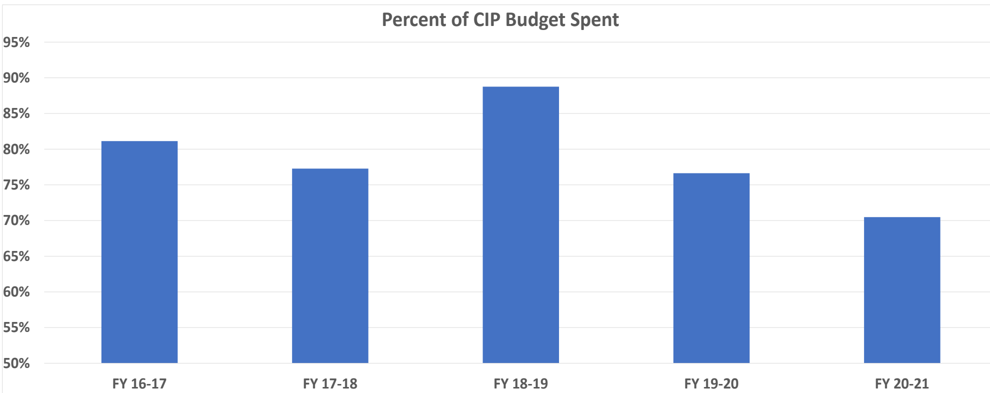
The City's involvement with the Portland Harbor Superfund site, which includes the anticipated costs for management, technical, and legal work, is currently forecasted at approximately $24.9 million over the next three years. These costs are supported by special rates on the water/sewer utility bill and reimbursements from a City-wide Portland Harbor Reserve Fund funded by affected City bureaus. The required cleanup plan identified in the ROD is estimated to cost $1.0 billion (in 2017 dollars) sitewide. The share of total implementation costs ultimately borne by the City is currently unknown, and the City cannot at this time predict the total financial impact or the financial impact to BES. Potential future capital costs associated with cleanup and natural resource restoration activities required by the ROD are not yet reflected in the bureau's forecast. The bureau has indicated that forecast amounts will continue to be modified as more information becomes available.

Key Issues in Capital

The Project Management Office, Bureau Reorganization, and Improving Capital Throughput

Ongoing process and organizational improvements are underway to support a more consistent and predictable CIP project delivery rate. The Project Management Office (PMO) was created specifically to advance the bureau's ability to increase capital throughput. It was formed with a small number of managers in March 2019, and the effort for the first couple of years has focused on process revamping and workgroup start-up. BES did not expect to immediately show reliable trends in CIP delivery, especially due to a broader bureau reorganization and constraints on the number of project managers and engineers. Full staffing build-out was initially planned for FY 2020-21, but this has been delayed by several years, limiting the number of CIP projects the bureau has been able to assign to dedicated project managers.

When the PMO was initially formed in 2019, the plan was to have the group fully staffed to manage the majority of CIP projects by 2021. This was projected to require approximately 36 Project Managers (PMs), including supervisors, and 13 controls staff. The Controls Division is currently staffed at ten (including contractors) and is providing project management process and procedures support as well as CIP program controls and monitoring for all capital projects in the bureau, regardless of where the project manager is positioned in the bureau. The Project Management Division is staffed with ten PMs, including one vacancy that is in the process of being filled. These positions manage 56 projects, or 15% of the total number of active projects. From a value perspective, excluding STEP, the PMs directly manage $290 million, or 37% of the CIP. This figure increases to $701 million or 56% of the CIP when including STEP.



Full build-out is constrained by available positions at the bureau. BES states that as no new PM positions have been approved in the last two budget cycles, and very few new Engineering positions, the bureau continues to be short-staffed on both the PM and the Engineering side. Incremental shifts have been made to bring more projects and PMs into the PMO. Full-build out to the original plan is not expected, but BES does anticipate it will continue toward the target identified in the transition plan as resources become available. The bureau expects to bring on at least one temporary contract PM in the next year and is planning for potentially three additional City positions reallocated from elsewhere in the bureau over the next year or two.

In the meantime, BES is working to manage and mitigate the staffing issues. The bureau notes that it has considered the following viable alternatives:

- Hiring more temporary contract staff for both engineering and project management roles can help, but the bureau does not have the supervisory capacity for this.

- Grouping smaller projects into larger programmatic bundles can streamline planning, administration, management, and contracting time.

- Continuing to outsource more engineering design work to consultants instead of performing work in-house may be the most viable option.

While the bureau considers the last option as the most likely avenue to deliver more work within staffing constraints, it also acknowledges that there is a tradeoff with its goal of keeping a balance of in-house engineering work that builds and retains institutional knowledge, as well as being able to cost-effectively deliver certain kinds of projects. This approach is also constrained by available BES staff to oversee the consultant contracts and task orders.

The bureau believes that its efforts are showing initial pay-off, though, as prior to the establishment of the PMO, CIP throughput averaged $88 million annually, or approximately 80% of the capital budget, while the two-year average since the establishment of the PMO has been close to $120 million annually, with CIP output last year at its highest since the Combined Sewer Overflow program a decade ago. BES also cites the establishment of new and revamped processes and procedures, including the establishment of Stage Gates during the development and predesign phases of delivery which provide more efficient and clearer decision-making processes, as one of the achievements of the PMO. Since the establishment of the PMO, 45 projects have passed at least one Stage Gate. Finally, the bureau points to feedback from key internal stakeholders, especially the Operations & Maintenance Group, that the model is working for them and results in projects that better meet their needs.

Next steps for further improvements in the work of the PMO include continued collaboration with other BES groups to prioritize capital needs more closely aligned with requirements, asset needs, service levels, and risk reduction. Moreover, the bureau is planning an overhaul of capital project cost estimating practices based on consultant work, as well as continuing to improve project scheduling practices. BES is moving towards more proactive management of capital projects through the use of Project Management Institute standards including Earned Value Management and change control, and the bureau will continue to update and build-out its online manual with tools and resources for PMs and project team members.

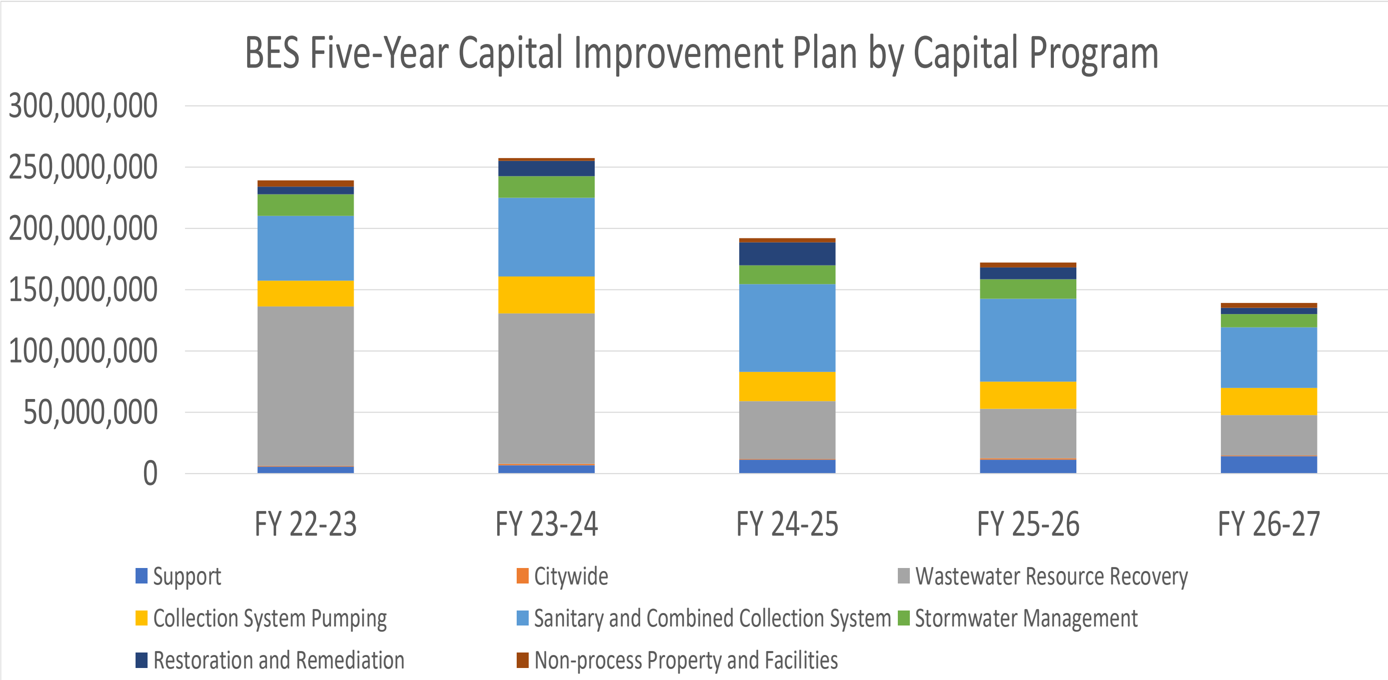
In addition, the bureau implemented bureau-wide realignments in March of 2020. The Future BES Transition is a long-term change management and process improvement effort, which was kicked off with the re-organization and is expected to last several years. The bureau also established the Portfolio Management structure and process including its first portfolio needs assessments, with a significant focus on the operations side of the budget, which formed the basis of this year's budget prioritization process and enabled the bureau to prioritize based on a comprehensive portfolio view. Furthermore, new governance steps, such as the establishment of Stage Gates for the Integrated Planning Group and the Strategy Group, are being refined; these are process improvements that are expected to bring efficiency and clarity to the planning process and other decisions in the bureau.

During the fall of 2021, BES hired a consultant to support process development and mapping and change management across the bureau to integrate old, new, in-progress and to-be-developed processes across bureau teams, as well as support the development of the new processes and supporting materials. Teams across the bureau have been working on various process improvements and developments, including drafting an inventory of the bureau's major drivers for incorporation into the capital portfolio and decision-making processes and bringing together teams doing condition assessment work across the bureau's systems to coordinate efforts. However, BES acknowledges that further improvements are needed, including improving the transition where capital project concepts come out of planning recommendations and are prioritized in the CIP delivery process. The bureau is also currently developing an asset management policy and a strategic asset management plan that will inform investment recommendations.

Current Five-Year Capital Improvement Plan (CIP)

BES' requested budget includes $999.9 million in capital expenditures over the next five years, reflecting the bureau's vision for a greatly expanded capital program to address aging assets and improve system reliability. Compared to the prior year's submitted five-year CIP, there are several changes resulting in a net increase of $124.0 million or a 16.8% increase when comparing the capital plan between FY 2022-23 through FY 2025-26 (i.e. the four years shared by both plans). The bureau has noted the primary drivers of the increase between the common four years. First, peak expenditures for the largest program, STEP, are being spread out over the next two years. In addition, the forecast was updated based on a reevaluation of program prioritization and conditions. Due to COVID-19 related City-wide budget constraints, the bureau states that its immediate CIP emphasis continues to be toward projects addressing imminent threats or risk to human health and safety, asset failure, and projects addressing regulatory compliance. Projects with longer term risks and benefits, or with reduced urgency, have been postponed where possible. Finally, new projects have been added to the CIP, including the $45 million

Advanced Metering Infrastructure project, and updated estimates for large programs such as the Large-Scale Sewer Rehabilitation Program.



The City's financial policies direct bureaus to develop financial plans that include investments necessary to manage existing and future capital assets and equipment, and to develop and maintain Capital Improvement Plans (CIP) that identify the individual capital acquisitions, projects, or procurements necessary to meet planned levels of service (FIN-2.03).[4] BES's CIP is developed using a multi-step process to identify, develop, review, score, and rank projects for funding and scheduling priority. Projects originate from recommendations in BES system plans, urgent and emergency projects to address asset failures, regulatory mandates, watershed planning, and inter-bureau collaborations. An internal BES stakeholder and subject matter expert review team investigates, scores, and ranks all proposed CIP projects in accordance with identified CIP criteria, in order to evaluate relative priorities across all systems and project types. The Project Management Office's (PMO) CIP program controls team evaluates all the information from the process, works with bureau project and program managers to refine costs and schedule data, and submits a recommendation to the Director for approval of the CIP. The CIP planning process also includes "feasibility projects" that are funded with initial pre-design budgets only, in order to support more robust project scope and cost information to include in future CIP requests. The Five-Year Financial Plan also assumes that the final two years of the plan will include additional projects, yet to be identified in the capital budget.

Scoring criteria to prioritize projects are based on an asset management approach and weighted to account for the likelihood and consequence of failure of the asset if the proposed project is not completed. Criteria includes impacts to human health and safety, business and residential customers, and impacts to public infrastructure such as streets. Additional prioritization is given to those projects mandated by federal and state laws and those projects that address City Council direction, including collaborative projects between BES and other bureaus. In planning for both the combined sewer system and the stormwater system, projects within those systems are ranked and prioritized against each other based on multiple factors of risk, including equity impacts on vulnerable communities. While equity

[4] https://www.portlandoregon.gov/citycode/article/200789

considerations are not yet explicitly and consistently factored into the scoring criteria, the ongoing organizational transition work within the bureau includes efforts to align equity considerations across system planning, portfolio management, and the CIP prioritization processes.

The FY 2022-23 Requested Budget includes 13 projects that are new to the CIP with estimated costs of $66.2 million over the next five years and $101.2 million in total new project costs. The procedure for adding new projects into the CIP was modified from the bureau's usual scoring and evaluation system to better align with Citywide concerns around the COVID-related budget impacts and to fit in with the peak delivery years of STEP. As noted above only projects fitting a specific profile were considered for the CIP - projects addressing imminent threats or risk to human health and safety, asset failure, and regulatory compliance - and all other projects recommended out of longer-term planning efforts were placed on hold pending more certainty in the resource planning forecast. Submissions were reviewed by the bureau's Leadership Team and scored, with only those projects scored to move forward and start in the first three years of the five-year plan added. The five new projects in the CIP with the highest total project costs are:

- Advanced Metering Infrastructure (Five-year costs: $30.3 million; life-time costs: $44.7 million)
- Urgent System Capacity Program, FY 22-26 (Five-year costs: $7.1 million; life-time costs: $14.6 million)
- Columbia Blvd. Wastewater Treatment Plant Outfall Surge Modifications (Five-year costs: $3.0 million; life-time costs: $11.2 million)
- Sump Rehabilitation and Replacement Program, FY 23-27 (Five-year costs: $7.5 million; life-time costs: $7.5 million)
- Owner Controlled Insurance Program, Phase VII (Five-year costs: $4.0 million; life-time costs: $5.1 million)

Jointly funded with the Portland Water Bureau (PWB) as BES's billing agent, the Advanced Meter Infrastructure (AMI) project is perhaps the most controversial new project. AMI is a system of water meters, communication technology and data management systems that enable two-way communication between meters and utilities. The system allows an employee in the office to receive a read from the meter whenever it is needed, without a staff person having to physically retrieve the read. AMI will also allow customers in their homes to know what their consumption and consumption patterns are, in amounts that are relatable to them, and at times of their choosing.

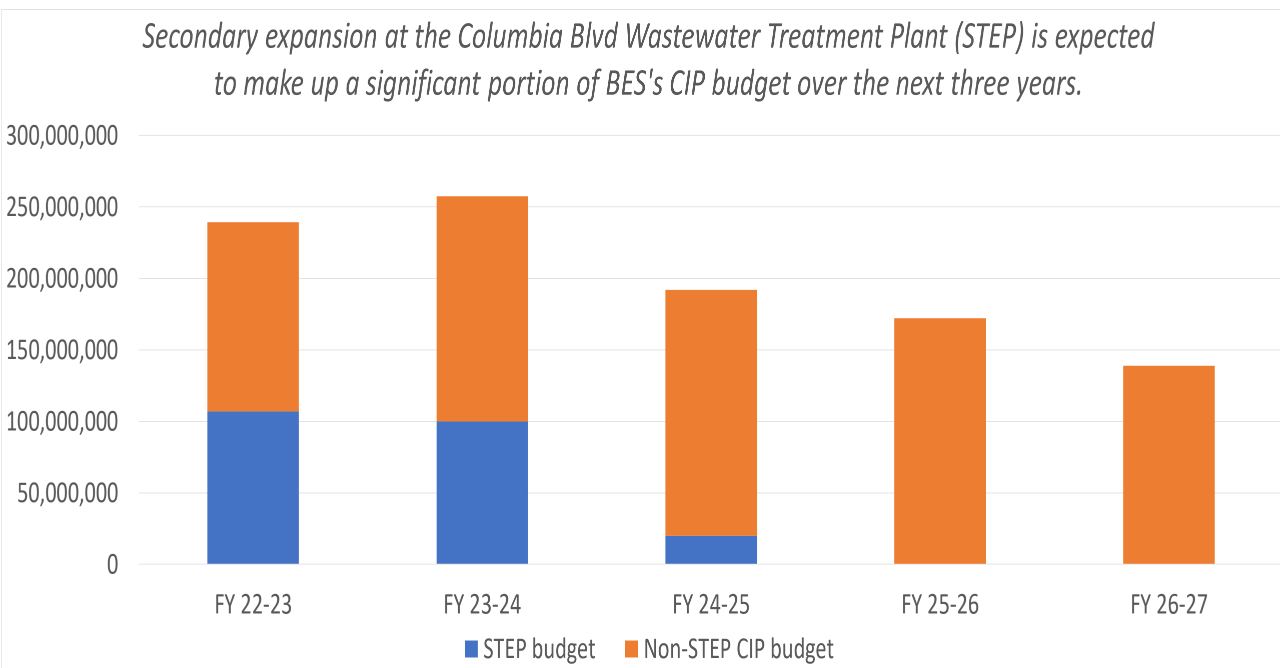
The bureaus state that Portland lags technologically, with similar technology already adopted by utilities of similar size on the West Coast. They contend that postponement of the City's adoption of the technology is resulting in a continued lack of data that would allow them to operate in more efficient, proactive ways. The resource requirements of the current manual meter-reading process limit PWB's ability to read meters more frequently than once per quarter, which translates into large quarterly bills for customers. The bureau contends that this meter reading and billing schedule limits its ability to accurately forecast consumption and revenues, which has operational and financial planning implications. Among other benefits, the bureaus state that AMI will result in more accurate meter reading; the ability to immediately identify water theft and broken meters; increasing efficiencies by requiring fewer field visits, decreased manual entry, and better revenue forecasting for financial planning; better data to support improved affordability and equity; and reductions of carbon emissions.

However, these benefits are quite costly, with project cost currently estimated at $90 million, and BES's share at $45 million. It is understood that there are many reasons, not just hard costs associated with system efficiencies, to pursue new technology such as AMI. If indeed the project will result in such efficiencies, CBO recommends that the utility bureaus better communicate with customers and the Portland Utility Board what savings will be realized by both the bureaus and their customers and the timelines when these savings may be achieved.

Secondary Treatment Expansion Program Updates

The Wastewater Resource Recovery program comprises 37% of the total CIP for the next five years, partly due to facilities expansion through the Secondary Treatment Expansion Program (STEP) at the Columbia Boulevard Wastewater Treatment Plant (CBWTP), which may cost over $400 million over the lifetime of the project. The City's Mutual Agreement and Order (MAO) with the Oregon Department of Environmental Quality (ODEQ) requires the CBWTP to treat all the combined sewage while meeting water quality standards with the purpose of protecting water quality, public health, and the environment. Per the agreement, expansion of secondary wet weather treatment capacity is required for captured Combined Sewer Overflows (CSOs) sent to the CBWTP during storm events. The effort also includes the replacement of two secondary treatment clarifiers by calendar year 2024, as well as long overdue solids processing for effective plant operation and to meet permit requirements.

The FY 2022-23 Requested CIP budget is $239.4 million, with STEP already making up $107.0 million of that, or 44.7%. Future years are projected to peak at approximately $257 million, as the Secondary Treatment Expansion Program (STEP) goes into construction in FY2022-23 through FY2023-24, before scaling back down to approximately $172 million of known projects in FY 2025-26.



Last year, accomplishments on STEP mainly focused on design, including:

- development and completion of overall 30% design documents and the basis of design report
- initiation of the first large construction package for site preparation and temporary facilities

- development and completion of 60% design, cost reconciliation, and value engineering of the second large construction package
- initiation of 90% design phase for the second construction package
- overall continuation of preconstruction services during design work with the Construction Manager/General Contractor (CM/GC)

BES states that all these milestones were achieved on time and reported to the Oregon Department of Environmental Quality in June of 2021.

Activities in the current fiscal year focus on:

- ground improvements and temporary facilities installation for the first large construction package
- completion of the structural rehabilitation of a pair of aeration basins
- initiation of the main substation replacement
- completion of design for elements of the second large construction package
- negotiation of the overall guaranteed maximum price inclusive of the second large construction package and in compliance with Community Benefits Agreement goals
- ground improvements for the new clarifiers will also be completed this year

During the next year and FY 2023-24, the bureau will focus on heavy construction on the permanent facilities, with the highest planned spending in FY 2023-24.

Concerning budget and spending, the project budget was last amended in November of 2019 based on 20% design estimates, benefiting from the early involvement of the CM/GC in the design phase. At that point, the planning budget of $146 million was amended to $411 million, and BES prioritized overall capital spending on the project. The bureau notes that while the project is on schedule and meeting delivery milestones, the spending has been lower than planned to date, and it will have more certainty with the final cashflow once it enters into a final agreement encompassing all design scope. Work will extend into early FY 2025-26 for final facilities startup on non-clarifier work and final demolition, pushing expenditures to that year. The bureau’s latest estimates at completion, based on 60% design documents, are projecting expenditures of up to $470 million, or approximately 14% over the budget developed on 20% design documents and prior to the COVID-19 pandemic and supply chain issues. BES states that it is putting much effort into value engineering to control costs.

DECISION PACKAGES

The Bureau of Environmental Services does not have any decision packages for FY 2022-23 budget development.

Bureau of Environmental Services

600 - Sewer System Operating Fund

		2021-22 Adopted Budget	2021-22 Requested Base (A)	Bureau Decision Packages (B)	CBO Recommended Adjustments (C)	Total Recommended Budget (A+B+C)
Revenue	Beginning Fund Balance	$85,180,000	$94,180,000	$0	$0	$94,180,000
	Charges for Services	$362,623,350	$412,478,835	$0	$0	$412,478,835
	Fund Transfers - Revenue	$258,000,000	$256,900,000	$0	$0	$256,900,000
	Interagency Revenue	$1,723,170	$1,258,677	$0	$0	$1,258,677
	Intergovernmental	$227,500	$237,500	$0	$0	$237,500
	Licenses & Permits	$1,572,000	$1,821,000	$0	$0	$1,821,000
	Miscellaneous	$4,647,500	$5,820,000	$0	$0	$5,820,000
Revenue	**Sum:**	**$713,973,520**	**$772,696,012**	**$0**	**$0**	**$772,696,012**
Expense	Capital Outlay	$162,737,512	$177,666,500	$0	$0	$177,666,500
	Contingency	$74,781,547	$71,758,920	$0	$0	$71,758,920
	Debt Service	$4,310,458	$4,474,165	$0	$0	$4,474,165
	Debt Service Reserves	$180,000	$180,000	$0	$0	$180,000
	External Materials and Services	$92,400,682	$98,073,735	$0	$0	$98,073,735
	Fund Transfers - Expense	$233,527,338	$267,869,758	$0	$0	$267,869,758
	Internal Materials and Services	$54,737,225	$56,115,198	$0	$0	$56,115,198
	Personnel	$91,298,758	$96,557,736	$0	$0	$96,557,736
Expense	**Sum:**	**$713,973,520**	**$772,696,012**	**$0**	**$0**	**$772,696,012**

SUMMARY OF REQUESTS & RECOMMENDATIONS (ALL FUNDS)

Bureau of Environmental Services

		2021-22 Adopted Budget	2021-22 Requested Base (A)	Bureau Decision Packages (B)	CBO Recommended Adjustments (C)	Total Recommended Budget (A+B+C)
Revenue	Miscellaneous	$6,223,100	$6,850,500	$0	$0	$6,850,500
	Licenses & Permits	$1,572,000	$1,821,000	$0	$0	$1,821,000
	Intergovernmental	$232,500	$237,500	$1,325,000	($1,325,000)	$237,500
	Interagency Revenue	$2,234,873	$1,787,180	$0	$0	$1,787,180
	Fund Transfers - Revenue	$488,682,735	$518,574,234	$0	$0	$518,574,234
	Charges for Services	$369,796,115	$420,016,552	$0	$0	$420,016,552
	Bond & Note Proceeds	$0	$385,000,000	$0	$0	$385,000,000
	Beginning Fund Balance	$448,040,000	$369,760,418	$0	$0	$369,760,418
Revenue	**Sum:**	**$1,316,781,323**	**$1,704,047,384**	**$1,325,000**	**($1,325,000)**	**$1,704,047,384**
Expense	Personnel	$91,961,218	$97,391,226	$0	$0	$97,391,226
	Internal Materials and Services	$56,538,345	$58,166,417	$0	$0	$58,166,417
	Fund Transfers - Expense	$492,613,682	$525,346,531	$0	$0	$525,346,531
	External Materials and Services	$101,425,575	$104,613,628	$1,325,000	($1,325,000)	$104,613,628
	Debt Service Reserves	$41,430,000	$55,484,917	$0	$0	$55,484,917
	Debt Service	$177,055,111	$186,450,395	$0	$0	$186,450,395
	Contingency	$193,019,880	$498,927,770	$0	$0	$498,927,770
	Capital Outlay	$162,737,512	$177,666,500	$0	$0	$177,666,500
Expense	**Sum:**	**$1,316,781,323**	**$1,704,047,384**	**$1,325,000**	**($1,325,000)**	**$1,704,047,384**