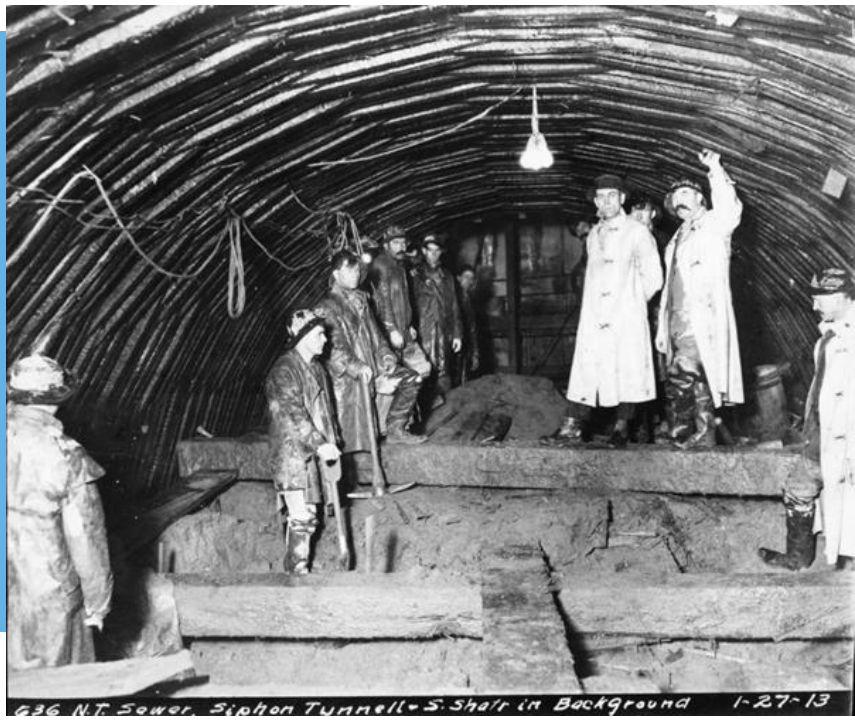
SEATTLE PUBLIC UTILITIES



Ship Canal Water Quality Project tunnel 1-8-24

AFFORDABILITY + ACCOUNTABILITY STRATEGIC PLAN

Accomplishments Report

2022-2023

Seattle Public Utilities

Table of Contents

SPU Affordability + Accountability Strategic Plan
Accomplishments Report 2022-2023

SPU's Affordability and Accountability (A+A) Strategic Plan identifies the utility's strategic priorities and commitments for improving SPU's overall ratepayer affordability and business performance. This ongoing work is integral to SPU's strategic business planning and was first initiated in 2017 by Council Resolution 31760.

SPU's overall goal is to deliver the highest quality service at the lowest possible predictable rate and to be transparent about how rate dollars are spent.

- **Affordability** outcomes focus on overall and individual "ability to pay." For SPU, this means providing essential services, pricing, and assistance to customers in ways that ensure everyone has access to SPU essential services based upon whatever life situation they are in.
- **Accountability** outcomes focus on meeting commitments and demonstrating results. For SPU, this means ratepayers understand how utility resources are being spent, the value for investments is clearly demonstrated, and the utility acts and makes progress on the long-range goals of the community.

Strengthening SPU affordability and accountability outcomes is also a critical expectation of our ratepayers. To strengthen SPU business practices and drive affordability and accountability outcomes, the A+A Strategic Plan prioritizes SPU commitments and improvements in key focus areas. This Plan is developed collaboratively with subject matter experts and Executive leadership across the utility to create agreement and a clear set of next steps for action.

For the 2022-2023 period, the Plan identified 15 strategies and 55 actions for improving affordability and accountability in seven focus areas:

1. Capital Planning and Project Delivery
2. Funding and Financial Management
3. Regulatory Strategies
4. Work Improvement and Efficiencies
5. Customer Assistance
6. Technology Management
7. Service Contract Negotiations

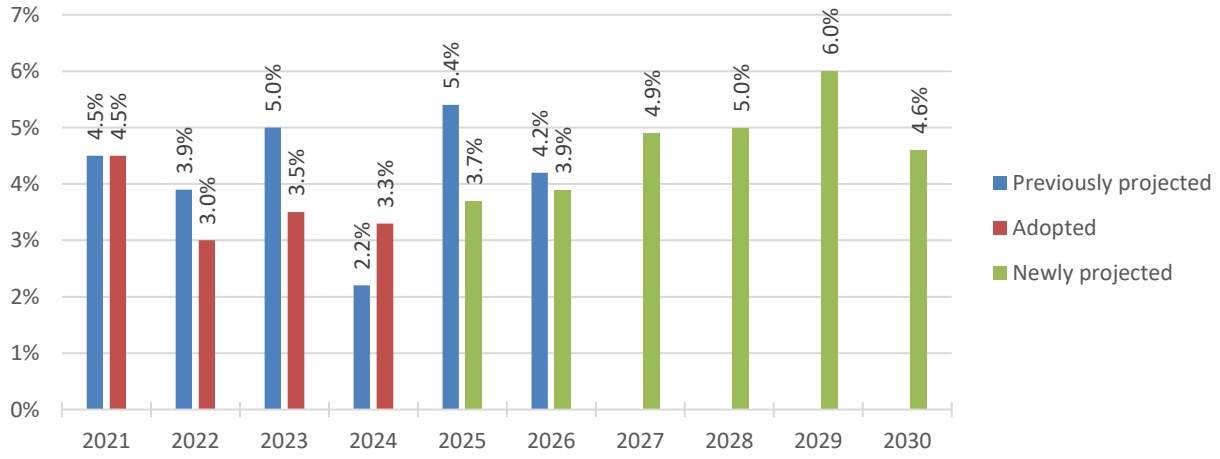
SPU also relies on our customers to do their part to keep costs low by conserving, minimizing pollution, and reducing or upcycling waste. Ultimately, SPU sees this work as a partnership where we deliver on the most reasonable balance of service for the customer's pocketbook and long-term sustainability of our infrastructure, health, and environment.

This report is divided into two parts. **Part A** provides a high-level overview of SPU's affordability and accountability outcomes and results for 2022-2023. **Part B** provides details about specific actions, accomplishments, and lessons learned within each of SPU's seven focus areas for 2022-2023.

A. Affordability + Accountability Strategic Plan - Outcomes

Overall, SPU's affordability and accountability work is characterized by focused actions, large and small, made across the organization as part of everyday work. Foundational to this approach is our commitment to building an empowered work culture where employees collectively share in the work of lowering ratepayer costs, delivering on SPU commitments, and continuously improving employee performance.

The main successful outcome from SPU's commitment to affordability and accountability is managing to its 6-year rate path as set in the 2021-2026 Strategic Business Plan (SBP). SPU's rate path in the SBP for 2021-2026 was projected to average 4.2% per year. The actual rate path for that time period averaged around 3.7% per year. This was achieved by focusing on affordability actions to lower costs, reduce waste, and improve efficiencies. Managing to the SBP projected rate path is one of the clearest signs of accountability for the utility: the rates SPU charges its customers are some of the most visible culmination of the work the utility does, and by keeping actual rates below the projected rate path, SPU is holding itself accountable to a public commitment to affordability. Rates are projected to increase by 4.7% a year through 2030, and the utility will continue to identify opportunities to lower rates, provide robust financial assistance to customers in need, and report on performance metrics and progress on major projects to the public, to keep rates as affordable as possible.



1. Evaluating SPU Affordability and Customer Assistance

In a recent survey of over 1,000 SPU customers, over a quarter of respondents used "expensive" as a word to describe the Utility. Only 40% of respondents felt that SPU does a satisfactory job of keeping the costs of its services affordable. This speaks directly to SPU's concern about the general affordability of our rates, and how more targeted assistance is likely necessary for many households. SPU continues to assess our customer's ability to afford or pay for water, wastewater and drainage, and solid waste services provided by SPU, including tracking a variety of household affordability and community economic capacity measures in an affordability dashboard (see the 2019-2021 Accomplishments Report for more detail).

While the affordability dashboard provides context for examining utility affordability issues broadly in Seattle, setting utility rates to these "affordable" levels is, at best, a general instrument for assessing affordability considerations. Customer rates based on affordability measures do not ensure that every individual household can afford access to services. This has led to a more detailed analysis of utility affordability across Seattle and an evaluation of the awareness and effectiveness of SPU's customer assistance programs.

Affordability Analysis

SPU performed an analysis of the distribution of theoretical utility costs versus household income for households in Seattle (it excludes customers in Lake Forest Park, Shoreline, Burien, and King County who receive direct services from SPU). Using the industry standard definition of utility affordability (water and wastewater costs exceeding 5% of household income; note that while this is industry standard, there is no empirical basis for the cutoff), roughly 10% of households have unaffordable utilities (about 5% for households with a white head of household and 20-25% for households headed by a person of color). Other findings include:

- Larger households tend to have higher utility costs relative to household income;
- Over 70% of households that have high utility costs are not receiving SNAP benefits (also known as EBT or food stamps; some of these households might not be eligible for SNAP, but that demonstrates the need to think about affordability more carefully and broadly);
- There is a large share of renters who, if they paid for their utilities, would have high utility costs (these high utility costs are instead wrapped into high rents), highlighting the importance of developing ways to provide customer assistance to hard-to-reach households; and
- Almost a quarter of Limited English Proficient (LEP) households have unaffordable utilities.

For a more detailed summary of the analysis, please see the Appendix.

Customer Assistance Evaluation

In 2023, SPU partnered with Seattle City Light (SCL) to launch a comprehensive Utility Assistance Evaluation. The evaluation included interviewing several Seattle staff, surveying over 1,000 customers (508 who were participants in a SPU customer assistance program and 504 who did not receive customer assistance), and interviewing over 20 customers whose participation in a customer assistance program lapsed, with the goal of using customer voices to inform program design recommendations to improve program offerings and customer experience, engagement, enrollment, and retention. The interviews and surveys will help SPU and SCL understand what different customer types need to address utility bill challenges and help evaluate how existing programs are meeting those needs. The following table contains some of the important research questions SPU and SCL are attempting to answer. Results will be reported in the second quarter of 2024, with work done through 2025 to improve utility assistance based on findings from the surveys and interviews.

What are customers' biggest utility-bill related problems and what are they accessing to help address them?
What are customers' everyday challenges? How do these challenges impact their ability to pay their bills?
What social services or programs are customers leveraging?
Do existing offerings (UDP, EBA, EAP, SPU Credits) meet customers' needs?
How are utility assistance programs meeting customer needs? What gaps exist?
Are customers aware of the utility assistance programs that are available to them? Why or why not?
What barriers do customers face in accessing utility assistance services?
What does the utility assistance customer journey look like?
What barriers prevent customers from accessing utility assistance programs?
How easy/difficult is the application process for each utility assistance program/pathway? Does this vary by customer type or demographic?
Who are SCL/SPU/HSD not reaching and how might they be reached?
Are there any demographic trends among participants, non-participants, and lapsed participants that might highlight unique experiences for Seattle to consider? (e.g., renter/owner, age, race/ethnicity, language)
How can Seattle improve outreach around utility assistance programs?
Why is the UDP attrition rate, specifically the failure-to-complete recertification rate, so high?
Do customers understand they are on UDP? If so, do they understand they receive a lower bill because of it?
Why are customers not recertifying for UDP?
What aspects of the UDP recertification process, if any, are difficult?
What changes does SCL/SPU/HSD need to make to enable customers to pay their bills on time and avoid carrying a balance?
What bill paying ideas are customers interested in?
What are their suggestions for improving utility assistance programs?
What do customers do to conserve water or electricity?

2. 2022-2023 Affordability Results

During the 2022-2023 period, SPU's affordability work has focused on reducing costs in the short-term and long-term. Highlights of key savings efforts are summarized below.

Focus area: Budget and Financial Management

Low-interest financing: One of the easier ways for SPU to reduce costs is to distribute bonds and identify loans and other funding sources that have a low interest rate. Low- to no-interest financing includes federal and state funding such as through the Water Infrastructure Finance and Innovation Act (WIFIA) program and the Washington State Revolving Fund. SPU can also lower its borrowing costs by regularly seeking opportunities to refinance or defease higher interest debt, and by prudently managing its funds to ensure favorable credit ratings. These efforts have led to significant savings:

- Issued **low-interest loans** for the Ship Canal Water Quality Project – saving $99 million
- Amended the Washington **State Revolving Fund (SRF) Loan** – saving $14.9 million
- Bought back **higher interest debt** – saving $31 million over the next decade
- Prudently managed Water, Drainage & Wastewater, and Solid Waste funds to ensure favorable credit ratings - reducing borrowing costs via lower interest rates

Focus area: Capital Project Delivery

Capital project prioritization and efficiencies: SPU works to reduce costs in its capital projects by reallocating its capital program to absorb increasing project costs, while coordinating and partnering with other City departments to achieve project cost efficiencies (e.g., reducing costs of digging up and replacing streets to install pipes by collaborating with SDOT for timing).

Increasing Customer Affordability Assistance

Ensuring equitable access to utility services is also a priority for SPU, with a focus on providing significant support to our most vulnerable customers. SPU financial assistance is about $30 million per year, though additional resources from the state and federal government led to an additional $5 million in assistance. In addition, SPU revisited its payment plan and water shutoff policies, providing repayment flexibility to customers and reducing the barriers to having water services reconnected. We hope to further improve customers' ability to repay their utility debt through Promise Pay, a new technology solution with a proven track record that uses innovative outreach methods to help customers successfully repay debt. SPU spent 2022-2023 working through the planning stage of Promise Pay implementation.

3. 2022-2023 Accountability Results

SPU continues to focus on improving accountability through increased transparency and reporting around SPU performance metrics, SBP progress reporting, and project-specific expenditures: (1) Strategic Business Plan (SBP) performance metrics and progress reporting is presented quarterly to the SPU Customer Review Panel (CRP) and posted publicly; and (2) reporting on the status of SPU capital infrastructure investments as needed online and through publicly available media channels whenever there are significant changes or key milestones. SPU is also committed to managing to its adopted rate path and forecast as set in the SBP as its most public-facing measure of accountability.

Expanding Strategic Business Plan Reporting

As part of SPU's 2021-2026 Strategic Business Plan (SBP) adoption, the utility committed to expanded quarterly performance reporting for the CRP in six areas:

1. essential service delivery metrics,
2. SBP-highlighted initiative and investment milestones,
3. SBP focus area progress,
4. capital investment portfolio progress,
5. financial performance, and
6. an annual utility accomplishments report card.

SPU is also committed to continuous improvement of SBP reporting. Current reporting details are outlined in SPU's SBP Appendix A. SPU SBP quarterly reports and CRP monthly meeting agenda and presentations can be found on SPU's CRP meeting schedule and notes website.

Capital Investment Transparency and Accountability

SPU spent around $260 million and $280 million on capital projects in 2022 and 2023, respectively. These amounts include investments in technology capital projects and upgrades/replacement of equipment that is capitalized, which amount to around $20 million a year. Major projects in 2022 and 2023 include the Ship Canal Water Quality project ($81 million in 2022 and $96 million in 2023); work along the Madison Bus Rapid Transit route, South Park drainage conveyance, and Tolt Pipeline rehabilitation ($11 million, 9 million, and $6 million, respectively) in 2022; and the Thornton Natural Drainage System improvements and Lake Union Tunnel pipeline ($8 million and 6 million, respectively) in 2023.

Some major projects that were completed in the 2022-2023 period include Pump Station 22 in Magnolia retrofit ($10 million for the entire project), East Montlake Pump Station retrofit ($7 million), and SPU infrastructure improvements related to the construction of the RapidRide H Line in the Delridge area ($7 million).

B. Affordability and Accountability Strategic Plan - Focus Area Reporting

For the 2022-2023 period, SPU focused its priorities and commitments into seven primary focus areas identifying 15 strategies and 55 actions to pursue. While staffing changes, the economic environment, and other factors resulted in the need for adjustments in SPU's specific actions, SPU continued to effectively advance progress in each focus area.

1. 2022-2023 Key Results by Focus Area

The table below provides a summary of key results by plan focus area for the 2022-2023 period.

Focus Area	Key Results
Capital Planning and Delivery	• Created the CIP Board for scaled Executive oversight. • Issued guidance to project teams to increase the overall maturity level of our project spending forecasts so that SPU becomes more efficient with the timing of capital project funding. • Drafted the Options Analysis chapter for inclusion into the revised Project Management Methodology guide to improve process accountability.
Funding and Financial Management	• Saved $11.7 million in 2022 through bond defeasances/refinancing. • Dedicated staff position to improve agency readiness to pursue and secure federal, state, local, philanthropic, and other funding opportunities. • Received more than $3.5 million in King County Flood Control District funds supporting South Park flood response and enhanced fish habitat. • Identified funding from new public and private sources through interdepartmental collaboration and proactive strategies. • Streamlined processes and reporting on budget and rates.

Regulatory Strategies	• Provided a formal Consent Decree Modification Request package to Ecology and the EPA in 2022.
	• Engaged in Consent Decree Modification negotiations with Ecology, EPA, and DOJ in 2023.
	• Made progress on key legislative priorities:
	  ○ The EPR for packaging and paper bill, one of the Environmental Priority Coalition's legislative priorities, made significant progress in 2022 and 2023. In 2023, the bill passed out of the House Environment and Appropriations Committees.
	  ○ The Right to Repair bill made significant progress in 2023, passing out of the House Consumer & Business Protection and Appropriations Committees, as well as off the House floor.

	• Legislative successes:
	  ○ The Legislature allocated $115M to MTCA Remedial Action Grants program in 2023-25 biennium.
	  ○ The Legislature passed the Extended Producer Responsibility (EPR) for batteries bill in 2023. It goes into effect in 2027.
	  ○ Worked with the bill sponsor to amend HB 1329 (utility shutoffs – extreme heat) to be less onerous and expensive to implement.
	  ○ Opposed duplicative reporting and testing requirements in HB 1365 (Puget Sound water quality); it did not pass.

Work Improvements and Efficiencies	• Launched SPU's Continuous Improvement Champions Program, which will bring Continuous Improvement practices throughout SPU that can save thousands of hours through small-scale projects. • Trained employees on SimplifyWork, to build skills and introduce continuous improvement concepts and tools. • Assessed high impact improvement opportunities for change readiness. • Established a quarterly City of Seattle Community of Practice for Continuous Improvement. • Closed the first batch of SPU's innovation contest, The Big Idea, with 11 projects.
Customer Assistance	• Launched a comprehensive Utility Assistance Evaluation in partnership with Seattle City Light. • Received a $4M grant from Washington Department of Commerce that helped address customer arrearages accrued during the COVID-19 pandemic. • Distributed over $565k in Federal LIHWAP funds over the life of the program to about 320 households in Seattle that met the income criteria (150% of poverty and below). • Resumed collections activity after the COVID-19 shutoff moratorium by developing payment plans to provide repayment flexibility to any customer that needed it and by reducing the barriers to having water service reconnected.
Technology Management	• Completed Initiation and Current State Evaluation phases of Strategic Technology Plan. • Upgraded a variety of SPU applications critical to operations.
Service Contract Negotiations	• Continued negotiating the Full and Partial water supply contract with 16 of Seattle's wholesale water supply customers. • Commissioned a study and evaluation of the governance structure of King County's regional wastewater system and possible alternatives to the current governance structure.

2. 2022-2023 Actions and Learnings by Focus Area

This section details many of the specific actions taken for each affordability and accountability plan focus area during 2022-2023, in addition to observations and lessons learned for each focus area.

Capital Planning and Delivery: SPU set strategic goals to better integrate capital planning, improve project delivery, and enhance capital reporting to streamline efforts, reduce costs, and maximize benefits of SPU capital investments. To meet these goals, SPU:

- Created the CIP Board to allow for scaled Executive oversight of projects between $100k and $10M, improving turn-around times for projects in Stage Gates 1 or 2 to one or two days (convening a large number of executives for the full Asset Management Committee process can extend a schedule by months). Meetings are scheduled on-demand.
- Managed at the project level in PPM, an enterprise project management solution, identifying and mitigating the impacts of these decisions at the Master Project and Budget Control Level.
- Created a draft of the Options Analysis chapter for the update of the Project Management Methodology to make informed and accountable decisions at the project planning stage; a final draft is expected later this year.
- Began assessing and updating our Operations and Maintenance (O&M) cost planning spreadsheet for new assets by reviewing past and current processes with stakeholder work groups and documenting a new process to capture these critical future costs.
- Began developing PPM training for Line of Business (LOB) representatives to more efficiently manage projects using SPU's software tools.
- Began updating the O&M cost estimating spreadsheet for better new asset management forecasting.
- Continued to make small improvements in everyday delivery of capital projects. A recent example is the issuance of guidance to project teams developing construction phase cashflow projections, creating consistency and accountability in project financial management.

Observations and Learnings: Project planning and delivery can be a long and costly process, due to many decisions that need to be made across numerous parties. Comprehensive access to all CIP projects, their Budget Controls Levels, Master projects, adopted and revised budgets, Governance Approved Amount, project spend plans, purchase orders, and life-to-date actuals will provide SPU with comprehensive tactical and strategic information to make more informed decisions. The Options Analysis phase of capital planning is critical to identifying capital solutions to our evolving infrastructure needs. Understanding the requirements for operations and maintenance on new assets is important to ensure we have the resources to maintain our assets and we are updating our O&M cost planning spreadsheet for increased understanding of these future resource needs. Focusing solely on data from the Project Delivery and Engineering Branch (PDEB) to track capital spending at SPU is problematic, as PDEB is only a portion of capital planning and projects; improved coordination is required among the lines of businesses to better track capital spending. LOB-specific training on PPM will increase skills in planning and reporting.

Funding and Financial Management: SPU set strategic goals to review financial policies, revamp the budget and rate-making process, pursue strategic funding opportunities, and improve financial and performance and monitoring. During the 2022-2023 timeframe, SPU:

- Filled the strategic funding and partnerships advisor position, which will better position SPU to pursue funding opportunities and develop funding strategies for key agency priorities.
- Ensured Seattle residents are benefitting from their contributions to the King County Flood Control District by securing District funds for critical SPU investments, including an initial $1.5 million for flooding response and prevention in South Park and more than $2 million for flood reduction projects that will also improve habitat for salmon and replace failing culverts.
- Secured funding for key SPU priorities by leveraging collaboration across City departments and pursuing new sources, including FEMA Building Resilience Infrastructure and Communities (BRIC) program, various EPA programs, congressionally directed appropriations, and philanthropic funding.
- Refinanced/defeased SPU Bonds to save ratepayers over $11.7 million in 2022.
- Obtained additional low-interest loans from the State Revolving Fund for the Ship Canal Water Quality Project.
- Reviewed financial policies as part of the rate setting process.
- Restructured the annual Budget process to better fit the Utility's needs.
- Began an annual Budget survey to track performance and leverage feedback for future changes and improvements.
- Increased quarterly financial reporting to outside stakeholders (CRP and Mayor's Office).

Observations and Learnings: The Finance and Risk Services (FARS) branch in conjunction with the LOBs continuously monitors projects for potential to qualify for WIFIA funding, as well as pursuing other alternative funding options such as the Corp of Engineers Infrastructure Financing Program. Readying capital projects to take advantage of significant and sudden increases in Federal water infrastructure funding through the Bipartisan Infrastructure Law (BIL) and other subsequent large funding such as the Inflation Reduction Act (IRA) has been a challenge, given the long lead time for large project development and approval through SPU's multi-year planning process. Due to the complexity of applying for and managing federal and state grant and loans, SPU is conducting some strategic analyses to evaluate what sources are most effective to pursue.

Regulatory Strategies: SPU set strategic goals to prioritize and align regulatory resources towards meeting community needs and moving from prescriptive to performance-based regulations to reduce costs and enhance community outcomes. During the 2022-2023 period, actions taken to meet these goals included:

- Making significant progress negotiating a modification to Seattle's Combined Sewer Overflow Consent Decree with Ecology and EPA that is more adaptable to changing conditions.

- Lobbying to protect state grant funding for critical SPU priorities, such as regulatorily-required cleanup of Lower Duwamish Waterway and East Waterway, Model Toxics Control Act (MCTA) projects, and the Brian Abbott Fish Barrier Removal Board.
- Lobbying for extended producer responsibility (EPR) for packaging & paper and EPR for batteries through meeting with legislators, staff, partners at cities, counties, non-profits, ports, etc., which included developing talking points, coordinating tours, and outreach.
- Lobbying for Right to Repair through meeting with legislators, staff, coordinating with PIRG and other stakeholders, testifying in committee, developing talking points and social media posts, and other activities to promote the bill.
- Lobbying for policy and funding to address 6PPD-Q, a chemical found in car tires that is lethal to salmon: supporting efforts to study 6PPD in waste tires, collaborating with Puget Soundkeeper and Ecology, and monitoring funding for Ecology to find safer alternatives.
- Finding opportunities for toxins-reduction policy and funding opportunities, including participation in stakeholder meetings with the Hazardous Waste Management Program to discuss potential policy and meeting with Toxics Free Future.

Observations and Learnings: 2023 was the second State Legislative session SPU attempted to pass the Right to Repair bill and EPR on packaging. While we worked hard to address the challenges identified in 2022, these bills did not pass due to continued opposition from the tech industry and waste industry. Many valuable lessons were learned from the 2023 legislative session on the EPR for packaging bill based on the significant opposition from the waste industry that need to be addressed; this is a time-consuming process requiring a lot of communication, and legislators are having some difficulty grasping the urgency of the legislation because of the bill's complexities. Negotiating with multiple parties on the modification to the City's Combined Sewer Overflow Consent Decree has taken longer than expected, reaching agreement in principle on the modification in 2023 with an anticipated completion of the modification in 2024.

Work Improvements and Efficiencies: SPU set a strategic goal to develop a culture of continuous improvement that is focused on enhancing value to customers and improving SPU efficiency and performance. SPU took the following actions to meet these goals in the 2022-2023 timeframe:

- The Continuous Improvement Champions program was developed and kicked off in 2023Q4. This cohort of 12 people from across the organization are dedicated to learning and practicing lean continuous improvement, creating connections across the Utility, and advocating for SPU's developing continuous improvement program.
- Five employees were trained in SimplifyWork, a training designed around simplifying process through the reduction of wasted effort and inefficient processes. This training provides leadership skills to solve problems, and build relationships and engagement.
- Identified the Drainage/Flooding Investigation process as an opportunity for improvement, with a work improvement process planned in 2024 to develop a new technology solution.
- Initiated a community of practice on program development and best practice sharing, demonstrating leadership by opening the community of practice to City of Seattle Employees.

- "The Big Idea", SPU's pilot innovation contest closed out with 11 projects from across SPU, including enhancements to the graffiti abatement program, developing accessible training materials, and improving communication with customers through fliers and outreach exhibits.

Observations and Learnings: SPU re-evaluated the direction that we wanted to move towards with a community of practice, learning that the organization was interested in practicing and doing lean continuous improvement while learning about it. SPU also developed the baseline for what the Champions program would look like and utilized feedback from across SPU to fine tune details of the program in 2023. The program launched with success and is a platform for creating tangible results to share back in 2024. A broader community of practice still exists involving separate departments in the city, with a different intent, which is to learn from other program structures for a "#OneSeattle" approach. Finally, the Big Idea innovations pilot yielded results on what additional resources and information project owners needed to be successful. SPU ensured feedback from participants was captured and can be used to make improvements to the program in the future. We intend to offer this innovation contest to our workforce again in 2025.

Customer Assistance: SPU set strategic goals to expand the types of, access to, and participation in, customer assistance programs, with a focus to align these efforts to community need. During the 2022-2023 timeframe, SPU took the following actions to meet these goals and respond to community need:

- Launched a comprehensive Utility Assistance Evaluation in partnership with Seattle City Light to better understand the needs of our customers and their barriers to getting the financial assistance they need; results will inform a program redesign process in 2024.
- Received a $4M grant from Washington Department of Commerce that helped address customer arrearages accrued during the COVID-19 pandemic.
- Resumed collections activity after the COVID-19 shutoff moratorium by developing payment plans to provide repayment flexibility to any customer that needed it and by reducing the barriers to having water service reconnected.
- Completed the IT planning stage to implement Promise Pay, a new technology solution with a proven track record of helping customers successfully repay debt over time through innovative outreach methods.
- Implemented protocols to restore water service and prevent water disconnections during extreme heat events.
- Contracted with Byrd Barr to administer the Federal LIHWAP Assistance money helping 269 extremely low-income families access nearly $500,000 in federal assistance.
- Piloted the Side Sewer Assistance program to support the affordability of side-sewer and other costly private infrastructure repair costs for lower-income homeowners. Six loans and grants were issued to homeowners to fix emergency side sewer issues with an average loan amount of about $16,000. The program was marketed (along with other SPU affordability programs) to over 7,000 Utility Discount Program single-family households in 2023 via contracts with various community-based organizations through in-person events, presentations to senior centers, and tabling.

- With the support of a US Water Alliance grant, SPU worked with Lake City Collective and Neighborhood House to increase community-based organization involvement in helping connect SPU customers to assistance and preventing water shutoffs.

Observations and Learnings: SPU entered 2022 with nearly $18M in customer arrearages, roughly six times pre-pandemic levels. The pause in business-as-usual allowed for innovative thinking about how to recover past-due bills by putting the customer at the center of policy decisions and service offerings. What started as a temporary shift - offering customers more flexibility on repayment terms before resorting to shutoffs – has proven to be a helpful offering that we will continue with the implementation of Promise Pay and other future initiatives.

Technology Management: SPU set a goal to identify technology investments and solutions to improve value and service to customers. During the 2022-2023 timeframe, SPU took the following actions to meet this goal:

- Began work on the SPU Strategic Technology Plan, which is set to be completed 2024Q3. Completed Initiation and Current State Evaluation phases and began Future State Vision in 2023.
- Initiated the approval and adoption process of Advanced Metering Infrastructure through our planning and legislative processes as part of the Strategic Business Plan update.
- Upgraded SPU applications for Real Property, Safety Compliance, IS View (used by Customer Care to view customer bills online), and the Watershed Security Mobile App to more secure, reliable, and supportable platforms.

Observations and Learnings: SPU initially viewed strategic planning (with its Strategic Technology Plan) and operational change management (OCM) as two separate but related projects, with shorter-term OCM a distinct effort from longer-term strategic planning. However, while assessing the implementation of the Strategic Technology Plan, we noticed some misalignment that arose from treating the projects separately, with some OCM actions in conflict with long-term strategies. This required us to change to incorporating OCM into the strategic planning. Throughout this process, it became clear that OCM is needed at SPU.

Service Contract Negotiations: SPU set a goal to shape utility service contracts to reduce costs, share risks, improve accountability to the communities we serve, and create opportunities for broader benefit. During the 2022-2023 period, actions taken to meet this goal included:

- Meeting with the Full and Partial water supply contract holders and attorneys every two months on average, including clarifying contract provisions and other financial aspects with the Full and Partial water supply contract holders.
- Presenting the Final Recommendation from the study of King County's regional wastewater system's governance structure to a variety of stakeholders (several mayors and sewer district commissioners, the director of King County Wastewater Treatment Division, and the King County Regional Water Quality Committee).

Observations and Learnings: Many of the contract holders wanted the interactions with SPU to be a partnership relationship instead of buyer-seller relationship, especially with respect to communicating critical outcomes in a timely fashion. King County Wastewater Treatment Division (KC WTD) has been receptive to feedback during and after the governance structure study, with positive changes being implemented in the Regional Water Quality Committee. KC WTD has also incorporated much of SPU's feedback in their Regional Wastewater Services Plan (RWSP) update. Looking ahead, the City's long-term wastewater treatment contract with King County expires in 2036. As part of planning for negotiating a new 50+ year contract it is important to review all options and fully understand the benefits and trade-offs of governance approaches.

Appendix: Rate Affordability Study

The more common ways to measure affordability is to take the cost of consuming some average or minimum amount of water (and wastewater) as a percentage of some income level (median household income, lowest quintile disposable income, etc.). This produces one easy-to-understand number, and can be easy to calculate, but this strategy has some limitations:

1. By providing only a single number, these strategies don't address household-by-household affordability; in particular, they don't account for differences in household composition (household size for water/wastewater consumption, household size and makeup for non-utility spending), nor do they account for the role customer assistance programs can have on affordability.
2. There is generally limited-to-no empirical or analytical basis for what should be considered "affordable". Furthermore, using a percentage-of-income as a cut-off point implies that customers who pay slightly less than the cut-off are in much better financial shape than those who pay slightly more than the cut-off, which is almost certainly not the case.
3. The analysis usually focuses on single-family homes and/or homeowners, as residents of multi-family buildings and renters are usually not direct customers of water/wastewater utilities.

Accordingly, to analyze Seattle Public Utilities' (SPU) rate affordability, this report uses microdata from the American Community Survey to estimate water and wastewater consumption costs by household as a percentage of household (disposable) income for Seattle households, and assesses the distribution of these percentages. The analysis takes no stance on what an "affordable" cut-off point is, though it uses various percentages as reference points for some demographic analysis. All non-group quarter households are included in the analysis (though separate analyses are for households who pay for their water). Disposable household income is calculated for each household using various cost-of-living or "family budget" estimates.

Finally, to assess whether SPU's rate structure is broadly progressive or regressive, income distributions across different household sizes are compared. SPU uses an increasing block tariff structure for water during peak season, where the first 10 centum cubic feet (CCF, or 100 cubic feet; 1 CCF is approximately 758 gallons) of water consumed costs less than the next 26 CCF, which costs less for any additional CCF. If the distribution of household size was the same across all income levels, then the current rate structure would more likely be progressive – wealthier households tend to consume more water, though wealthier households are more likely to have water conserving appliances and less likely to have leaking pipes. However, if wealthier households tended to have fewer members and poorer households had more members, then this increasing block tariff would be regressive, as the increasing block tariff would result in poorer households paying more per capita per gallon of water.

Analysis

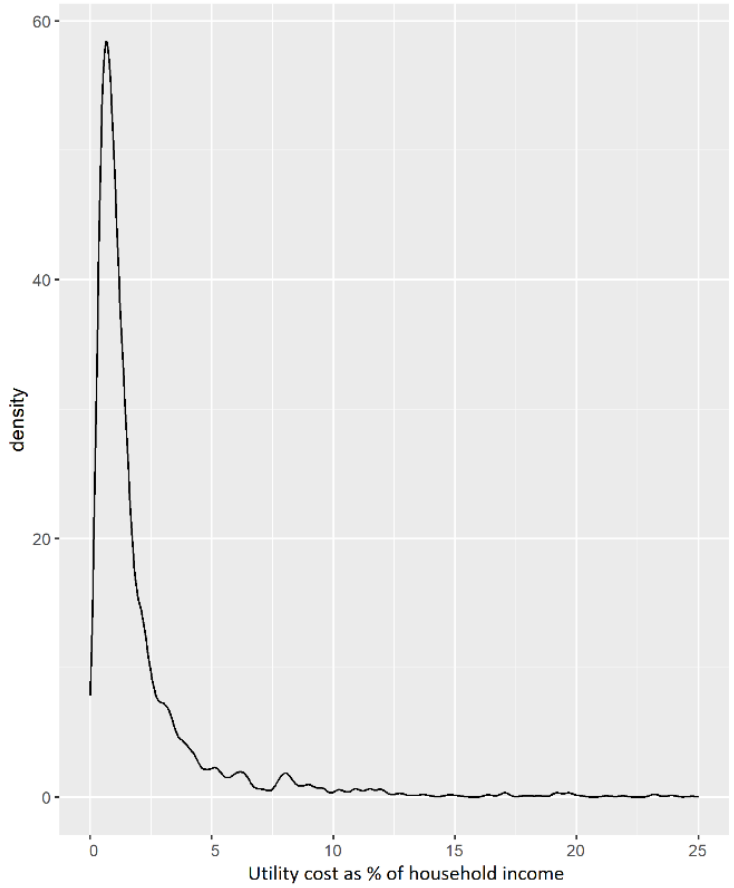
There are three main analyses done for this report:

- An analysis of the distribution of utility costs as a percentage of household (disposable) income; this is done for all survey respondents, as a broad evaluation of affordability in the SPU system (i.e., imagining if all households paid for their own water), and for respondents who pay for their own water, to more closely reflect SPU's affordability to its actual customers. This analysis is done across various demographics, to identify specific populations that might face more or less affordability concerns. As noted earlier, no stance is taken on what constitutes "affordable", though attention is paid to 4.5% and 7%, and 10% for disposable income.
- A comparison of the demographics of households in three groups: those whose utility costs are less than 4.5% of household income, those whose utility costs are between 4.5% and 7% of household income, and those whose utility costs are greater than 7% of household income. This is to examine if there are certain "at-risk" populations who are more likely to have unaffordable utilities, while allowing for a degree of flexibility with how affordability is defined. This is done for all survey respondents, as a broad evaluation of affordability as described above.
- An analysis on the distribution of household income by household size, to help evaluate if SPU's current tiered structure might be regressive.

Results

Utility Costs as a Percentage of Household Income

- Water and wastewater costs in Seattle are broadly affordable.
    - A majority of households (around 80%) have water and wastewater costs total less than 2.5% of household income.
    - Nearly all households (around 90%) have these costs total to less than 5% of household income.
    - Very few households have water and wastewater costs exceed 7% of their household income, though there's a small concentration of households around 7.5%.
- There are no glaring differences between different Seattle neighborhoods.
- Comparing utility cost affordability by race of the head of household, households where the head of household is American Indian, Black or African American, or some other race tend to have bills that are less affordable than others, but most of these households still have bills that are around 5% of household income or less.
    - A little under 95% of households with a white head of household have utility bills that are 5% of household income or less
    - Around 75% for American Indian and Black or African American head of households have utility bills that are 5% or less.
    - A little over 80% for households where the head of household is some other race have utility bills that are 5% or less.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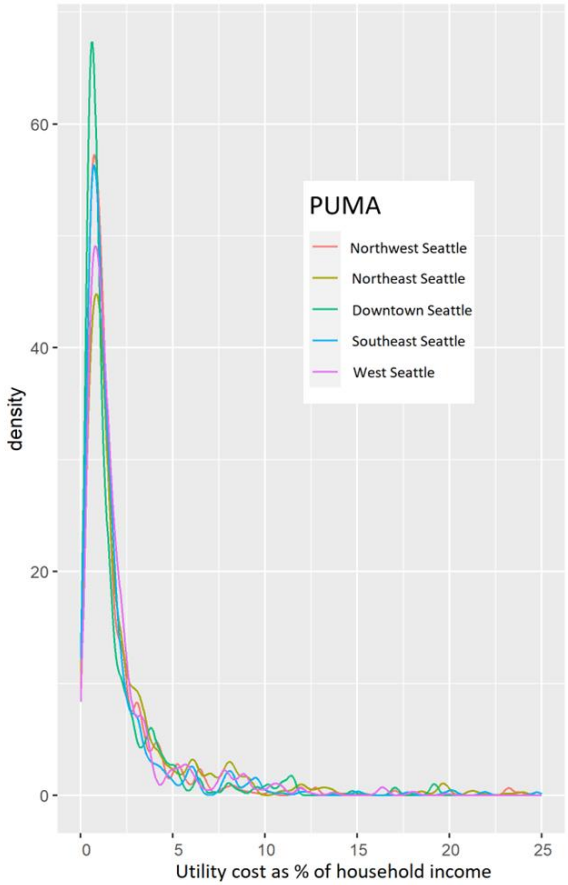
Utility cost as % of household income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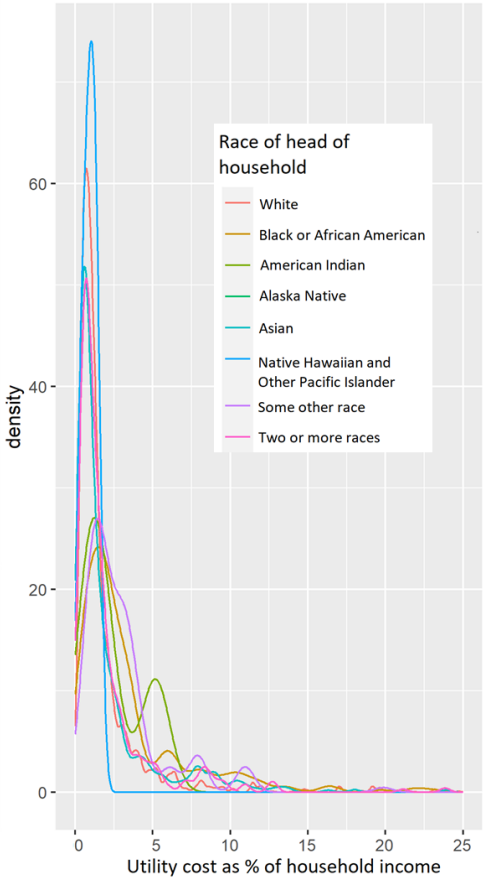
Utility cost as % of household income
PUMA
Northwest Seattle
Northeast Seattle
Downtown Seattle
Southeast Seattle
West Seattle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Utility cost as % of household income
Race of head of household
White
Black or African American
American Indian
Alaska Native
Asian
Native Hawaiian and Other Pacific Islander
Some other race
Two or more races

Narrowing in on households who pay for their water to more closely reflect SPU customers, and utilities on average tend to be more affordable; the density graph for those who pay for water has a slight leftward shift compared to the "all households" graph.

- Around 85% and 95% of households who pay for water have utility costs of 2.5% and 5% of household income, respectively, compared to 80% and 90% of all households.
- Breaking down by PUMAs and race of head of household show similar shifts in the density graphs towards water and wastewater being more affordable.
- Populations with a larger percentage of renters see the largest increase in affordability. West Seattle and northeast Seattle see the largest shifts, while households with Asian and Black or African American head of households see the largest shifts.

The higher percentage of households who have "affordable" utility services is unsurprising, as SPU customers are homeowners for the most part, who tend to have higher income than renters.

Disposable Income

When calculating disposable income, there appears to be a considerable number of households in Seattle who have "negative" household disposable income; in other words, these households' non-discretionary, non-utility spending exceed their household income.

- Using UW's Self-Sufficiency Standards, around 15% of households have "negative" disposable income.
- EPI's Family Budget Calculator suggests up to 25% of households have negative disposable income
- The percentage of households with negative household disposable income using MIT's Living Wage Calculator is somewhere in between UW and EPI.
- Most of these households, 14% for the UW estimate and 22% for the EPI estimate, have non-discretionary spending exceed their household income by $50,000 or less.

Of the households with positive disposable income, there are no major differences in the distribution of utility cost as a percentage of disposable household income

- Most of the differences are in the 0-2.5% of disposable household income range.
- There is a smaller percentage of these positive-disposable-income households that have "unaffordable" utilities (10% using Teodoro's standard) compared to using the "5% of household income" standard.

There are effectively no differences when comparing utility cost distributions based on PUMAs across the UW, MIT, and EPI measures of household costs. Differences in the three measures of household cost are more pronounced when comparing affordability across the race of the head of household, though it's inconsistent.

This all suggests a general concern about affordability in Seattle more so than a utility affordability concern.

Identifying "At-Risk" Populations (see tables at end)

Household size

- Two- to four-person households generally have fewer affordability issues.
- Single- and five-person households have slightly more affordability concerns.
- Six-or-more-person households have major affordability concerns.
- Most of the households with affordability problems are single-person households.

SNAP Benefits

- Most households that receive food stamps have utility affordability issues. Over a third of these households having utility costs exceed 7% of household income.
- **A major concern for affordability in general (not just utility affordability)**: over 70% of households that have high utility costs relative to household income are not on food stamps.

Housing Tenure

- A higher percentage of households that have unaffordable utilities relative to households that have a mortgage. How? The "free and clear" population is likely not rich individuals who cash-buy their house, but rather is likely to be an older population that has paid off their mortgage, and thus are retired with low household income.
- **The large share of renters who have high utility costs** highlights the importance of developing ways to provide customer assistance to hard-to-reach households.

Household Language

Non-English-speaking households generally have higher utility costs as a percentage of income compared to English-speaking households.

- Almost a quarter of Limited English Proficient (LEP) households have unaffordable water and wastewater utilities.
- Of the non-English-speaking households with unaffordable utilities, Asian and Pacific Islander languages are the majority, then Non-Indo-European, Non-API languages.

Household Type and Work Experience

- Married and cohabiting couples generally have affordable utility costs relative to household income; cohabiting couples with children looks like an exception, though this is a small population, so it could be a sampling issue.
- For both single males and single females, the presence of a child or other relative leads to even more unaffordable utility costs.
- Single males living alone make up about a third of these households with unaffordable (greater than 7%) utility costs, then by single females living alone making up just under 20%.
- Working less than full time increases the likelihood of having unaffordable utilities. Having at least one of the householder or spouse work full time generally meant affordable utilities (95% of the population with utility costs lower than 4.5% of household income).

Evaluating SPU's Rate Tier Progressivity

This section evaluates whether SPU's rate tier is generally progressive by analyzing how household income and household size are distributed relative to each other. If poorer households tend to be larger, and thus tend to consume more water, then SPU's increasing rate tiers is more likely to be regressive.

Looking at SPU's rate tier during peak season, there are three tiers: 0-10 centum cubic feet (CCF, or 100 cubic feet; 1 CCF is approximately 758 gallons) consumed per two-month billing cycle, 10-36 CCF, and over 36 CCF. The second tier rate is around a dollar more expensive per CCF compared to the first tier rate, and the third tier rate is almost double the second tier rate. Moving from the first to second tier translates consuming around 125 gallons per household per day, consumption for one to two people. Going from the second to third tier translates to over 450 gallons per customer per day, or a household size of six to nine people (or a house with a large lawn).

As such, the distribution of two- and three-person households, as well as five- and six-person households are of particular interest. The large number of one- and two-person households with lower household incomes, and the three- to five-person households generally having higher incomes than the single-person households is suggestive that the first and second tier structure is not regressive. **That being said, the high density of wealthier two- and three-person households would suggest that the rate tier structure is not particularly progressive**.

There is stronger concern for the second-to-third tier structure, as six-or-more-person households appear to be mostly poorer. These larger households will pay more per capita for their water, despite not having a noticeably higher household income compared to smaller households. Importantly, the wealthier two- and three-person households would likely need to have impressively large lawns to move from the second to third tier: households use around 50,000 gallons of water per household per year for outdoor use, or around 140 gallons per household per day, leaving around 300 gallons of water per household per day for indoor use, more than enough for a most three- to four-person households.

Thus, to limit the regressivity of the current second- and third-tier structure it is important for SPU to ensure that these larger households are on the Utility Discount Program (UDP).

Figure 1. Distribution of Household Income by Household Size

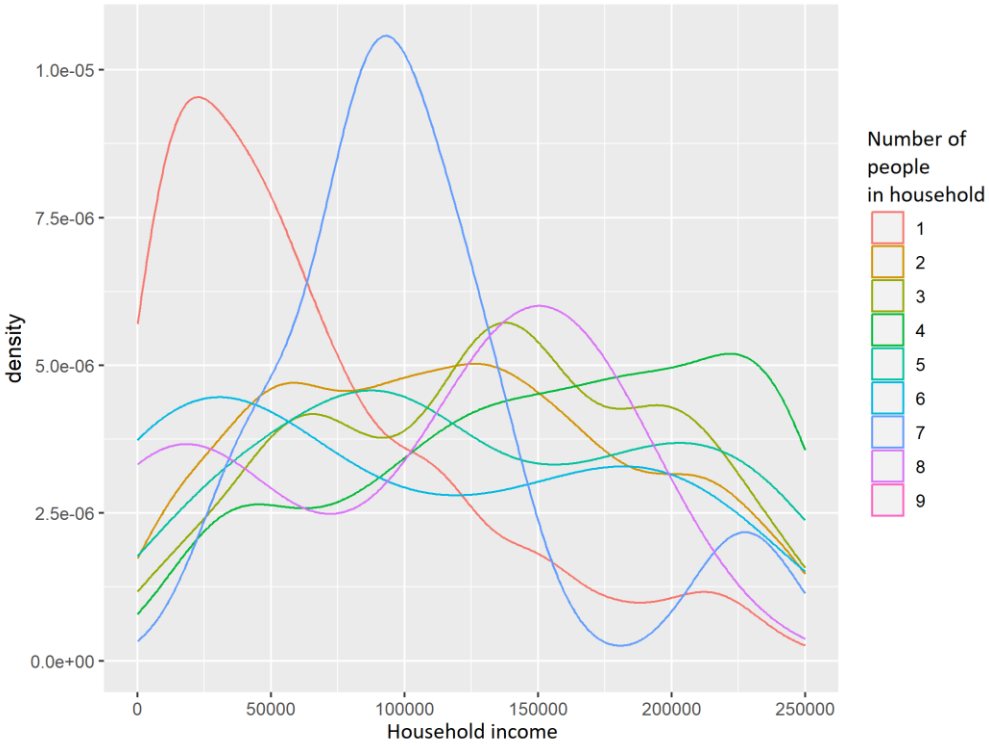
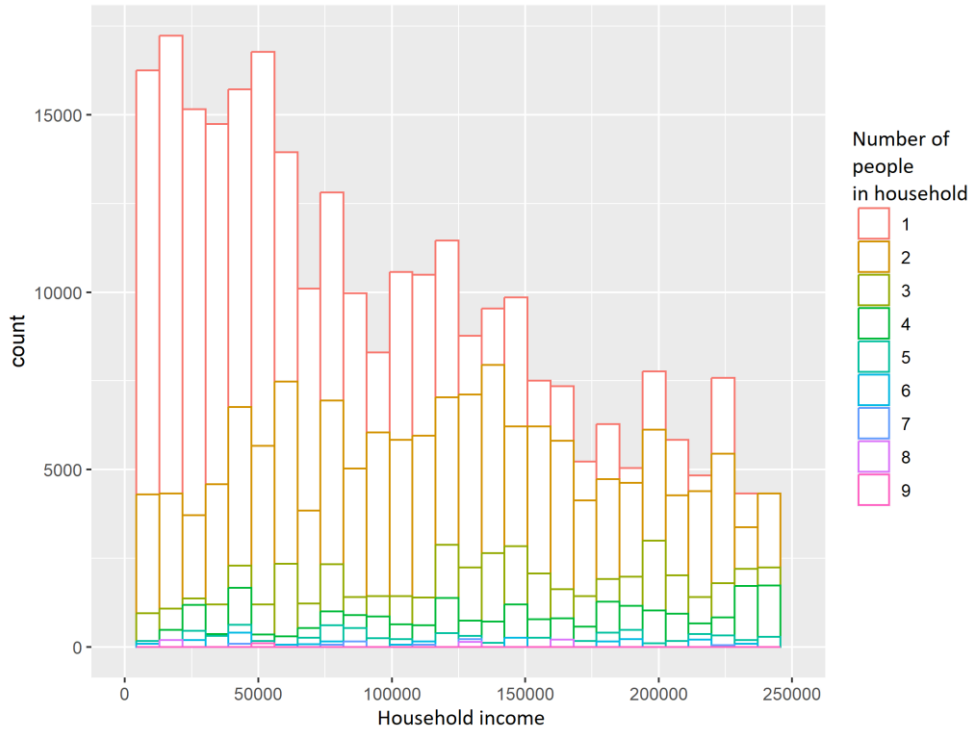


Figure 2.Histogram of Household Income



Background

The most prevalent method of assessing household affordability of water/wastewater comes from the Environmental Protection Agency's (EPA) 1995 guidance to evaluate whether federal wastewater-related mandates might lead to "undue economic hardship" within a community (EPA 1995). Household affordability, referred to as the Residential Indicator (RI) compares average per household cost of wastewater[1] services relative to the service area-wide median household income, using a benchmark of 2% - high financial impact was defined as average costs per household of greater than 2% of median household income.

EPA's RI has faced several critiques as a measure of household affordability:

- Using median household income as the baseline fails to incorporate that status and prevalence of the most economically vulnerable residents.
- Drinking water costs are not included in the measure.
- Using average water consumption does not reflect the amount that low-income households, who are unlikely to have large lawns or swimming pools, pay.
- Other household economic burdens, which can vary substantially across geographies and household types, are not considered.

Accordingly, numerous stakeholders have recommended that a household affordability measure should:

- Use lower income quintile (20th income percentile) instead of median household income.
- Include drinking water costs.
- Base service costs on water use of 50 gallons per person per day.
- Adjust household income by subtracting out other non-discretionary household expenditures, such as housing, food, and healthcare costs.

The other key consideration to evaluating affordability, in addition to how to calculate an affordability measure, is what benchmark is used to define "affordable". EPA uses 2% of median household income for wastewater (and implies 4.5% for water and wastewater), while Teodoro (2018) uses 10% of disposable income of the 20th percentile. Raucher, Clements, Rothstein, and Mastracchio (2019) suggest a baseline of 7% of lowest quintile income for low to moderate burden and 10% of lowest quintile income for moderate to high burden. Unfortunately, these benchmarks do not appear to have an empirical reason for why the amount was chosen. Only one empirically-based benchmark was found during a literature review: in a University of Michigan Survey of the Detroit Metro area (Rockowitz, et al, 2018), found that the lowest-income households estimated that they could afford to pay approximately 7% of their monthly income on water.

[1] EPA's definition of affordability for drinking water is limited to a national-level affordability calculation of small communities (10,000 people served or less), with a benchmark of 2.5% of national median household income in such communities.

Data and Methodology

Data

The data come from the 2021 American Community Survey, focusing on the "Seattle City" (11601-11605) Public Use Microdata Areas[2], with group quarter responses removed.

Monthly Utility Consumption and Costs

There are two sets of monthly water and wastewater utility consumption calculations. To estimate a household's utility costs, peak season rates in 2021 are applied to the estimated amount of water and wastewater consumed.

Water base service	$18.45
Water flow charge: 0-10 CCF	$5.55 per CCF
Water flow charge: 10-36 CCF	$6.86 per CCF
Water flow charge: 36+ CCF	$11.80 per CCF
Sewer flow charge	$16.67 per CCF

Note: 1 CCF = 758 gallons

The first calculation is for a baseline level of water and wastewater consumption for each household, multiplying the number of individuals in the household by a baseline level of water consumption per person per day, for 31 days. For the purposes of this analysis (and similar to Teodoro's analysis), the conservative minimum of 50 gallons per person per day is used.

The second calculation is specifically for renters who have water costs built into their monthly rent. For this calculation, it is assumed that landlords do not adjust rental costs based on water costs that would fluctuate according to the number of tenants. Instead, landlords are more likely "projecting" water costs based on some average or expected number of tenants in the unit, based the number of bedrooms in the unit on the number of people in the household. Furthermore, landlords likely expect tenants to use an average amount of water, as opposed to the minimum amount, so renters are assumed to use 80 gallons of water per person per day, for 31 days.

Household Income and Household Costs

Household income data are taken directly from survey responses. To calculate disposable income, three different resources are used to estimate the cost of "necessities": the Economic Policy Institute's (EPI) Family Budget Calculator, Massachusetts Institute of Technology's (MIT) Living Wage Calculator, and the University of Washington's (UW) Center for Women's Welfare Self-Sufficiency Standard. Note that for lower income households, these household cost estimators could be slightly higher than the actual costs the household faces, as lower income households likely make tradeoffs (either on the amount of "necessities" or the quality [and therefore cost] of "necessities", or both) to fit into their lower household budget.

Affordability Variables

There are two sets of calculations to create variables used for the affordability analysis. The primary focus is on utility costs as a percentage of household (disposable) income. To get these variables, utility costs are multiplied by 12 to get an annual utility cost, and then divided by household (disposable) income to get a percentage.

[2] The 2021 ACS uses the 2010 Census PUMAs: 11601 Seattle City (Northwest); 11602 Seattle City (Northeast); 11603 Seattle City (Downtown) – Queen Anne & Magnolia; 11604 Seattle City (Southeast) – Capitol Hill; 11605 Seattle City (West) – Duwamish & Beacon Hill

The second calculation is used to examine how projected utility costs affect rent affordability. In order to assess how projected utility costs affect rent affordability, rent as a percentage of household income is compared to rent minus projected utility costs as a percentage of household income. The former is monthly rent taken from survey responses multiplied by 12, and then divided by household income. The latter subtracts projected utility costs (the second calculation in the *Utility Costs* section) from monthly rent, multiplies the difference by 12, and then divides that number by household income.

Economic Policy Institute Family Budget Calculator, available at: https://www.epi.org/resources/budget/

Massachusetts Institute of Technology Living Wage Calculator, available at: https://livingwage.mit.edu/metros/42660

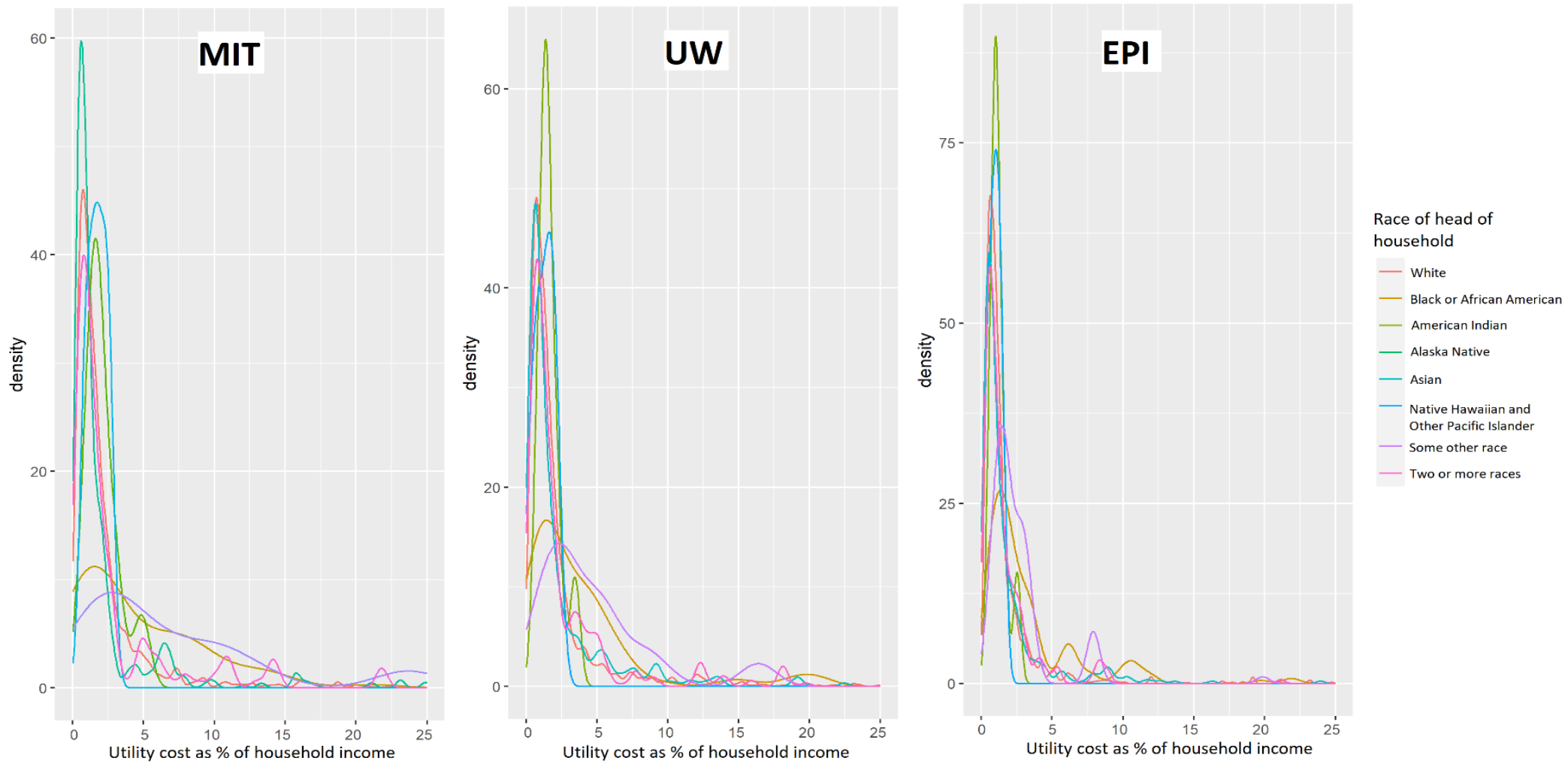
Rockowitz, D., Askew- Merwin, C., Sahai, M., Markley, K., Kay, C., Reames, T. (2018). Household Water Security in Metropolitan Detroit: Measuring the Affordability Gap. University of Michigan Poverty Solutions. Available at https://poverty.umich.edu/10/files/2018/08/PovertySolutions-PolicyBrief-0818-r2.pdf

Teodoro, M. (2018). Measuring Household Affordability for Water and Sewer Utilities. Journal of American Water Works Association, 110:1.

University of Washington Center for Women's Welfare Self-Sufficiency Standard, available at: https://selfsufficiencystandard.org/Washington/

US EPA (n.d.) WaterSense Statistics and Facts. Available at: https://www.epa.gov/watersense/statistics-and-facts

Water Research Foundation (2016). Residential End Uses of Water, Version 2: Executive Report. Available at: https://www.waterrf.org/research/projects/residential-end-uses-water-version-2



The MIT measure suggests that households with a Black or African American head of household and households with “some other race” as a head of household have a slightly higher distribution of households with utility costs as a percentage of disposable household income that exceed 10%. The UW measure has a similar distribution as the MIT measure, though the distribution shows slightly fewer households that have “unaffordable” utilities. The EPI measure has a higher distribution of households with a Black or African American head of household and households with “some other race” as a head of household with utility costs as a percentage of household income of less than 5%

Distribution of utility affordability by household size

# of people in hh	Utility costs as percentage of hh income		
	< 4.5%	4.5 – 7%	≥ 7%
1	86.5%	3.7%	9.8%
2	94.2%	1.7%	4.0%
3	94.8%	1.8%	3.4%
4	94.3%	3.9%	1.8%
5	87.5%	1.1%	11.4%
6	72.3%	2.0%	25.7%
7	63.5%	36.5%	0.0%
8	72.5%	0.0%	27.5%
9	43.0%	0.0%	57.0%

Distribution of household size by utility affordability

Utility costs as percentage of hh income	Number of people in household								
	1	2	3	4	5	6	7	8	9
< 4.5%	29.6%	41.0%	14.8%	10.9%	2.4%	0.9%	0.2%	0.2%	0.0%
4.5 – 7%	43.9%	25.8%	9.6%	15.6%	1.0%	0.8%	3.2%	0.0%	0.0%
≥ 7%	50.8%	26.5%	8.0%	3.2%	4.7%	4.7%	0.0%	1.3%	0.7%

Distribution of utility affordability by SNAP benefits

Food stamps	Utility costs as percentage of hh income		
	< 4.5%	4.5 – 7%	≥ 7%
Yes	46.7%	17.2%	36.1%
No	93.5%	1.9%	4.6%

Distribution of SNAP benefits by utility affordability

Utility costs as percentage of hh income	Food stamps	
	Yes	No
< 4.5%	2.3%	97.7%
4.5 – 7%	29.9%	70.1%
≥ 7%	27.4%	72.6%

Distribution of utility affordability by housing tenure

Tenure	Utility costs as percentage of hh income		
	< 4.5%	4.5 – 7%	≥ 7%
Owned, mortgage	97.1%	1.4%	1.5%
Owned, free and clear	89.8%	4.2%	6.1%
Rented	86.8%	3.1%	10.0%
Occupied without paying rent	61.2%	8.9%	29.9%

Distribution of housing tenure by utility affordability

Utility costs as percentage of hh income	Tenure			
	Owned, mortgage	Owned, free and clear	Rented	Occupied w/o paying rent
< 4.5%	44.0%	16.1%	39.4%	0.6%
4.5 – 7%	22.0%	25.8%	49.3%	3.0%
≥ 7%	10.5%	16.5%	68.6%	4.4%

Distribution of utility affordability by household English proficiency

LEP household	Utility costs as percentage of hh income		
	< 4.5%	4.5 – 7%	≥ 7%
Yes	76.2%	5.2%	18.6%
No	92.0%	2.5%	5.5%

Distribution of utility affordability by language spoken in household

Household language	Utility costs as percentage of hh income		
	< 4.5%	4.5 – 7%	≥ 7%
English	92.5%	2.2%	5.2%
Spanish	90.2%	1.1%	8.7%
Other Indo-European	94.7%	1.9%	3.3%
Asian, Pacific Islander	88.1%	3.4%	8.5%
Non-Indo-European, Non-API	59.1%	18.5%	22.4%

Distribution of household English proficiency by utility affordability

Utility costs as percentage of hh income	LEP household	
	Yes	No
< 4.5%	3.7%	96.3%
4.5 – 7%	8.9%	91.1%
≥ 7%	13.8%	86.2%

Distribution of language spoken in household by utility affordability

Utility costs as percentage of hh income	Household language				
	English	Spanish	Other Indo-European	Asian, Pacific Islander	Non-Indo-European, Non-API
< 4.5%	72.9%	4.9%	8.4%	12.3%	1.4%
4.5 – 7%	60.8%	2.0%	5.9%	16.3%	15.0%
≥ 7%	62.3%	7.2%	4.5%	18.0%	7.9%