# Report to Utility Committee
# January 30, 2023

## EPCOR WATER SERVICES INC.

## 2025-2029 Drainage and Wastewater Treatment Performance Based Regulation Renewal

## Process and Timeline Report

## TABLE OF CONTENTS

1.0 Background and Purpose ..... 2
2.0 Performace Based Regulatory (PBR) Structure ..... 2
3.0 Approach to the 2025-2029 Applications ..... 3
4.0 Utility Committee - Application Review Timing ..... 12
5.0 Application Format ..... 13
Appendix A - Performance Based Regulation - Overview ..... 15
1.0 EWSI's Water Treatment Operations ..... 16
2.0 EWSI's Wastewater Treatment Services ..... 17
3.0 EWSI Drainage Services ..... 17
1.0 Performance-Based Regulation Methodology ..... 18
4.0 Water and Wastewater Treatment Rate Calculations ..... 22
5.0 Routine Rate Adjustments ..... 24
6.0 Non-Routine Rate Adjustments ..... 26
Appendix B – 2022-2024 Wastewater Treatment PBR Application – Table of Contents ..... 28

## 1.0 BACKGROUND AND PURPOSE

The EPCOR Drainage Services and Wastewater Treatment Bylaw (Bylaw 19627) expires March 31, 2025 and EWSI (EPCOR Water Services Inc.) intends to file Rate Applications by June, 2024 to seek City Council approval to set new rates and terms and conditions of service commencing April 1, 2025. This application will encompass the stormwater and sanitary utilities as well as the wastewater treatment utility. (Note - the EPCOR Water Services Bylaw (Bylaw 19626) covering water treatment, distribution and transmission does not expires until March 31, 2027 and will not be included in this application).

This report provides an overview of EWSI's proposed approach to the applications, planned inclusions and supplemental reports and the general timing of the various steps in the approval process. As with previous Process and Timeline reports, the intent is to ensure alignment with Utility Committee requirements and expectations and to receive early direction for any issues or concerns to inform the application's development.

## 2.0 PERFORMACE BASED REGULATORY (PBR) STRUCTURE

### 2.1 Regulatory Construct

Performance Based Regulation (PBR) has been the regulatory model used by the City of Edmonton to regulate EPCOR's non-electric utilities since 2002, when it was first introduced for Water Services. The same PBR model has been used for Wastewater Treatment since it was transferred to EPCOR in 2009. Similarly, the letter of intent developed as part of the transfer of Drainage Services to EPCOR, established City Council's desire to utilize a PBR structure to regulate drainage as defined in the clause that stated, "City Council will remain as regulator of drainage rates through a Performance Based Regulation, similar to water." The 2022-2024 Drainage Application approved in 2021 followed this direction.

EWSI proposes that the upcoming 2025-2029 Drainage and Wastewater applications continue under a PBR structure and should retain the same general terms and conditions as the current applications (2022-2024 for Drainage and Wastewater Treatment and 2022-2026 for Water). This includes the general financial risk/return framework, rate increases at inflation less an efficiency factor (i-x), utilization of special rate adjustment (SRA's) for cost increases above inflation, inclusion of non-routine adjustments (NRA's) for changes beyond EWSI's control and annual performance metrics set by the regulator with penalties to ensure the maintenance of a defined standard of performance. EWSI's believes that the current PBR regulatory structure continues to provide benefits that are not realizable under other regulatory models. The PBR process aligns with previous Utility Committee objectives, which include:

- Customers receive stable and predictable rates
- Risks from cost (and consumption) variances are borne by the utility not customers
- The utility have an incentive to seek efficiencies and cost savings
- The utility is accountable for meeting customer service, reliability, quality, environment, and safety performance standards
- Administrative burden is reduced by multi-year filings

See Appendix 1 for a high-level overview of the PBR Structure.

### 2.2 Application Terms

Prior to the current term, all PBRs completed to date have been based on 5-year terms as this is seen as the optimal time-period to balance the utilities risk and rewards and the regulatory burden of developing and assessing a PBR application. Currently, Water remains on a 5-year term while Drainage and Wastewater Treatment are on 3-year terms. These term lengths are an outcome of Utility Committee direction based on the desire to establish a staggered schedule for the applications so that not all three would be reviewed at a single point in time in the future given the inherent workload for City Council, the Utility Committee, City administration and EWSI. As the staggered schedule has now been established with the current terms, EWSI proposes that both Drainage and Wastewater Treatment's upcoming terms be set at 5 years.

## 3.0 APPROACH TO THE 2025-2029 APPLICATIONS

Prior to the 2022-2024 applications for drainage and wastewater treatment (and 2022-2026 for water services), EWSI followed a typical regulatory application submission process where discussions with the regulator regarding components of the application prior to its submission was generally limited. The end-result of this approach was that a number of pertinent topics would receive limited discussion during the hearing process, given the wide range and complexity of topics under consideration.

With the most recent PBR submissions, this approach was altered with several discussion papers being brought forward to the Utility Committee prior to the application's submission in order to have a more focused, fulsome review of the topic within a confined context. This approach allowed a more in-depth discussion on the topic and afforded Utility Committee the opportunity to provide initial feedback or non-binding direction to what would be included in the final application. Formal approval for these items was not sought, nor received, for these discussions as approval remains with City Council.

For the 2025-2029 PBR Applications, EWSI proposes to continue this approach and expand it beyond what has been done previously. Over the next 12-14 months, EWSI proposes to bring a number of

discussion papers forward with each addressing a specific component of the 2025-2029 applications. The planned topics are outlined below. This approach will allow a more detailed review of specific areas by Utility Committee and will facilitate those discussions and directions being reflected in the final applications.

### 3.1 Stakeholder Engagement Strategy

The PBR application process will result in a series of recommended operational and capital programs, performance measures and rate designs. As such, EWSI believes that stakeholder engagement provides an opportunity to consider and incorporate rate-payer and stakeholder expectations into the recommendations brought forward in the application. EWSI has historically completed stakeholder engagements prior to previous applications and rate-payer input has proven to be valuable in setting priorities.

For the 2025-2029 PBR applications, EWSI will present its Public Awareness and Engagement Plan to Utility Committee in September 2023 and invite feedback on whether the plan addresses the regulator's expectations. The plan will be consistent with the City's public engagement policy and carry out activities at the Refine level on the public participation spectrum. At this level, EWSI commits to working with stakeholders to ensure their concerns and aspirations are reflected in the alternatives developed, and will report back to them, and to the regulator, on how their input influenced decisions around policy, programs and services.

Based on the engagement plan that informed the 2022 applications, EWSI expects that the 2023 engagement plan will include a variety of methods and tools, including a combination of presentations, workshops, one-on-one meetings, face-to-face stakeholder outreach and public opinion research. The methods will be tailored to each stakeholder group based on the complexity of the topic and the type of input being sought. Due to the complexity of the PBR process, the engagement will focus on understanding the public's values and policy preferences at a high level. Concepts will be presented using non-technical language to help ensure a common basis for providing meaningful input.

EWSI's engagement activities will also take into account Utility Committee's feedback on the discussion papers brought forward throughout 2023. Utility Committee feedback on these topics will be used to inform the design of subsequent customer and stakeholder engagement on these topics, the results of which will be included in the final application. In order to maximize opportunities for stakeholder participation, some engagement activities may be initiated before the presentation of the engagement plan in September 2023, but the bulk of activities will follow Utility Committee's review.

EWSI's objectives for public engagement and communications throughout this process are to:

- Have public and stakeholder input inform policy choices and to support priority setting for operations and capital programs, performance measurement and rate design. Based on EWSI's past practice, the discussion will likely be focused on four topic areas:
    - **Values.** Understanding the values held by stakeholders and using these to guide the evolution of the utilities including the performance measures in the PBR.
    - **Performance Priorities.** Understanding the types of performance most valued by stakeholders, and the level of performance they are seeking, to guide the prioritization of capital and operating programs.
    - **Cost and Risk Sharing.** Understanding stakeholder views on how costs and risks should be shared between ratepayers, service recipients, insurers, government and the utilities, and using these views as an input to guide rate design and future communications;
    - **Rates**. Understanding stakeholder views on the cost and benefit trade-offs from different levels of investment in Edmonton's drainage and wastewater systems, and their preferences for future rates.
- Provide stakeholders with opportunities to ask questions, express concerns and raise issues with respect to the PBR renewal and their utility services;
- Maintain positive and productive relationships with the key decision makers and stakeholders throughout the PBR development and implementation; and
- Report back to stakeholders as the PBR renewal process progresses on how their feedback was used by EWSI.

### 3.2 Rate Structure and Design Review

Financial regulation is intended to ensure "Just and Reasonable Rates" that are fair to both consumers and the utility[1]. For the utility, fairness means that rates must allow the utility the opportunity to recover, over the long run, its prudently incurred operating and capital costs[2], including a return on capital employed in the provision of utility services (collectively, the utility's revenue requirement). At the most basic level, rates are designed to fully fund the utility's activities while, at the same time, not over-collecting revenue. For consumers, fairness means that rates are based on the cost of the services that they receive. Water rates are considered fair and equitable when each customer class pays the costs allocated to the class based on their level of use of the waterworks system and subsidization from one class to another is avoided.

[1] In Canada, this standard was defined in Northwestern Utilities Ltd. v. City of Edmonton, 1929 CanLII 39 (SCC), [1929] S.C.R. 186, at pp. 192-93, per Lamont J.

[2] In Alberta, the prudently-incurred cost standard is derived from EUB Decision 2001-110 and AUC Decision 3585-D03-2016. Although City Council is not bound by these decisions, these decisions provide guidance and direction.

While recovery of the full revenue requirement in a fair and equitable manner is a key objective, other objectives such as rate structure and design, or the manner in which rates are charged are also considerations. Some factors that can be considered when designing rates include:

- Rates that are easy to understand from the customers perspective;
- Rates which are cost effective for the utility to administer;
- Continuity, over time, of the rate making philosophy;
- Policy considerations (encourage efficient use of resources, economic development, etc.);
- Provide revenue stability from month to month and year to year;
- Promote efficient allocation of the resources;
- Equitable and non-discriminatory (cost based)

EWSI is currently reviewing the rate structures for all three utilities and intends to provide that analysis along with a series of recommendations to the Utility Committee for consideration. These recommendations will also be subject to customer and stakeholder engagement prior to the submission of the application. The rate review will evaluate the current rate levels and design on a number of dimensions. The review will start with determining whether cross subsidization exists between one customer class and another. In other words, whether changes in consumption patterns since the rates were originally set now results in one customer class benefiting from lower rates than they should based on their cost of service (and other classes subsidizing those lower rates through paying higher rates than they should based on their cost of service). The review will then extend to compare the current rate structures and designs to the contemporary rate design approaches used by other utilities. The manner in which these designs achieve broader policy objectives and support planned advancements and changes in the overall system (such as stormwater management programs) will also be considered.

Lastly, a plan to address the known administrative challenges will be developed. These challenges exist mainly in the stormwater utility and existed prior to the transfer of Drainage Services to EPCOR. These challenges include unverified agreements made prior to the transfer that ostensibly exempt some customers from payment, inconsistencies in charges across customer classes as well as charging City of Edmonton properties for stormwater services. Based on the premise that all customers should contribute to the stormwater system based on their use of that system, EWSI believes these challenges should be discussed and solutions developed for discussions with customers and the Utility Committee.

As rate design has a direct impact on ratepayers, the Public Awareness and Stakeholder Engagement plan will have a component for rate design review included. This is anticipated to

entail reviewing any alternative rate design with ratepayers for their feedback and addressing their feedback in the application.

### 3.3 Deferral Account Analysis (Motion)

At the conclusion of the 2022-2024/26 PBR Application review, Utility Committee issued a motion to review the use of *"deferral accounts and other adjustments mechanisms to deal with variations in usage."* In response, EWSI will provide Utility Committee with an analysis assessing the benefits and drawbacks for the continued use of deferral accounts.

As background, deferral accounts are a used in some regulatory jurisdictions to address risk. All cost and revenue forecasts within a PBR application are subject to forecast risk as the final actual results will be either higher or lower than the initial forecasts. Historically, the PBR has been structured so that EWSI assumes all forecast risk. The end-result of this approach is rate-payers have stable and predictable rates while EWSI receives an increased return on equity to compensate for the risk transferred to EWSI from customers. With some deferral accounts, such as the current EWSI consumption deferrals, variances between forecast and actuals are tracked separately and either charged to or refunded to rate-payers at a future point in time (as opposed to being borne by the utility). The end-result of this approach is that utility assumes a lower level of risk while the rate-payer is subject to greater price volatility.

Until the 2022-2024/26 PBR Applications, EWSI has never had a deferral account included in the final Bylaw. As the 2022-2024/26 applications were developed during the COVID pandemic, the consumption forecasts were developed based on information that displayed a wide divergence from historic norms (i.e. the general impact was a significant decrease in commercial consumption with significantly higher residential consumption). As the forecast risk was considered greater than historic levels (as it contained both the normal volume forecast risk in addition to the element of the timing of a return to normal consumption patterns), the temporary introduction of consumption deferral accounts was directed by the Utility Committee for all three utilities. The deferral accounts were intended to prevent under or over earning by the utilities based on the forecast risks. The awarded return on equity was correspondingly reduced by 0.25% in order to adjust for the utilities reduction in risk.

As defined by the motion, EWSI will provide a review of the implications of the continued use of deferral accounts. This review will be both from the perspective of the utility as well as the impact of the subsequent rate adjustments on the rate-payer. This topic will also be reflected into the Public Engagement plan, with customer and stakeholder feedback incorporated into the applications.

### 3.4 Developer Funding Review

Capital investments required to support both new greenfield and infill development across the city are allocated between developers and ratepayers differently across EWSI's various utilities. For water infrastructure, green-field costs are generally shared between developers and ratepayers with rate-payers paying for "backbone" assets such as treatment and transmission infrastructure as well as reservoirs. Developers are responsible for distribution level infrastructure that is generally added to lot prices. For infill development, developers have historically been responsible for all costs. For drainage assets, developers cover the majority of costs for new greenfield infrastructure and limited costs for infill. (Note – in the provincially regulated electrical system, ratepayers cover the majority of costs for electrical infrastructure).

EWSI has had discussions with developers to understand the historic rationale for these differences as well as the issues that the disparity in approaches causes. The scope of the discussion was originally limited to greenfield development. More recently, discussion regarding infill has been included given its increasing importance in the City Plan (one initiative that was an outcome of these reviews is the infill fire protection program in the current water PBR).

EWSI intends to continue these discussions, assess alternatives and bring a summary report to Utility Committee. As part of that assessment, different approaches are being reviewed with the goal of determining whether a more consistent framework for allocating costs of development between developers and ratepayers is required. Several objectives are included in the assessment including determining which approaches result in overall long-run cost minimization. Additional considerations would be the degree to which cost allocation and regulatory principles necessary to fund water and drainage infrastructure required to support growth are met. Considerations for transparency, predictability, stability and cost effectiveness of administration will also be included. A jurisdictional review will be completed and the approaches utilized in other jurisdictions assessed based on the established principles. The report will also include a discussion of how different funding models would impact the competitiveness of utility rates and developer costs with other municipalities.

### 3.5 Cost of Capital (Return on Equity) Review

"Cost of Capital" is a fundamental concept in both financial theory and public utility regulation. At the highest level, cost of capital is an opportunity cost, meaning that investing in any asset (or security) implies a foregone opportunity to invest in an alternative asset (or security). For any investment to make financial sense, the expected return of that investment must be equal to the return available in other investments assuming that both investments are of comparable risk. Because investments with similar risks should offer similar returns, the opportunity cost of

an investment should equal the return available on an investment of comparable risk. The higher (or lower) the risk, the higher (or lower) the investor's expected return.

From a utility perspective, total cost of capital is a central component of the revenue requirement. In most instances, the total cost of capital is the combination of the cost of debt, the cost of common equity and the capital structure (how much funding comes from debt and how much from equity). The rate of return is developed from the cost of capital by weighting each of these components by the allowed capital structure to derive the weighted average cost of capital (WACC)[3]. Generally, regulators focus their reviews on the cost of equity and the capital structure while debt rates are generally determined by financial market information.

Under the PBR's constructs, EWSI is allowed to recover the operating expenses and depreciation deemed reasonable in the PBR approval process as well as a fair return on the assets utilized in providing service to rate-payers. In the past, EWSI followed the same approach seen in other regulatory jurisdictions by providing an external opinion for the proposed common equity costs in the application. These reports tend to be highly technical as they are based on the application of three market-based cost of common equity models, the Capital Asset Pricing Model ("CAPM"), Discounted Cash Flow Model ("DCF") and the Risk Premium Model ("RPM"), to the market data of a U.S. water proxy group and a Canadian utility proxy group.

EWSI and its external expert have also historically provided a comparison of the proposed return on equity to the Alberta Utilities Commission (AUC) generic cost of capital. In the 2017-2021 PBR application, both EWSI's cost of capital expert and Grant Thornton, the City's expert, recognized that EWSI's risk is greater than the gas and electric utilities regulated by the AUC. EWSI's expert concluded that water and wastewater treatment utilities experience greater levels of business risk relative to natural gas and electric utilities[4]. Grant Thornton indicated that their evidence of greater business risk was conflicting and could not support or refute that conclusion[5]. However, both consultants were aligned in the risk comparison of EWSI's PBR with that of the AUC. As a result of these conclusions, both consultants concluded that a risk premium above the AUC generic was warranted.

[3] While often used interchangeably, "rate of return" and "cost of capital" are distinct and actually represent two separate concepts. Rate of return refers to an *ex post* accounting concept that is effectively the return earned on an asset (rate base on the regulatory environment). It is measure of profitability that is usually determined through accounting records. Cost of capital is an *ex ante* economic and financial concept of expected or required return. It is an opportunity cost must be estimated from economic and financial data, rather the measured.

[4] Page 20, Sussex Economic Advisors, Opinion and Report on the Rate of Return, June 6, 2016.

[5] Page 142, Grant Thornton, EPCOR Performance Based Regulation 2017-2021 Filing Review, December 22, 2016.

Prior to the formal submission of the 2025-2029 PBR application, EWSI will provide Utility Committee with a report to review of the traditional methods for determining appropriate costs of capital as well as a discussion of the ways that the EWSI utilities assume greater business and financial risk than electric utilities regulated by the AUC. In addition to providing a foundation of the previous perspectives on cost of capital, the report will also present for consideration different approaches to determining an appropriate cost of capital for the 2025-2029 applications.

### 3.6 Equity

Equity, in this context, refers to just and fair inclusion—a condition where everyone has an opportunity to participate and prosper. Equity is achieved when life outcomes are not predetermined by racial, economic, or social identities. In water utilities, equity is achieved when all communities:

- have access to safe, clean, affordable drinking water and wastewater services;
- are resilient in the face of floods, drought, and other climate risks;
- have a role in decision-making processes related to water management in their communities; and

Both the City of Edmonton, in their long-range strategic plan, The City Plan, and EWSI recognize the importance of creating an inclusive and compassionate city, rooted in efforts to improve equity, end poverty, eliminate racism, and make clear progress towards Truth and Reconciliation.

The model of service delivery in the water industry is changing and evolving into emerging roles that focus on sustainability, social responsibility, and affordability. It is becoming increasingly important to ensure our policies, services, capital and operational programs are equitably designed and implemented. In order to ensure alignment with City of Edmonton goals and objectives in regards to equity, EWSI will provide a review of current operational programs and initiatives with an equity lens. From that basis, additional opportunities to increase equity will be assessed in order to facilitate the achievement of the underlying goals.

### 3.7 Metrics Review (Motion)

At the conclusion of the 2022-2024/26 PBR Application review, Utility Committee issued a motion for "a *review of the performance measures to ensure they are increasingly stringent and challenging over time."* In response, EWSI will provide an analysis assessing the impact of altering the current performance metrics structure and approach in order to align more closely with the stated intent of the motion.

As background, the current metrics framework was initially established at the inception of the water PBR in 2002 and had been adopted by both wastewater treatment and drainage services. The framework is based on a number of specific metrics grouped within over-arching indices to assess Water Quality (water only), Environmental Performance, Customer Service, System Reliability/Optimization and Safety. Each metric has an established "standard of performance" based on industry benchmarks, and where benchmarks are not available, on historic trending and targeted future performance. The benefit that ratepayers receive from the PBR metrics programs is the level of assurance they provide in establishing standards of performance and then ensuring that that level is maintained over the PBR term.

Historically, PBR metrics were established to ensure that a "standard" level of performance was maintained and not to incent increasing levels of performance (note - the expected level of performance in PBR materials are generally referred to as "standards" rather than targets – although the more conventional term "target" is occasionally used as it is the more common reference). In addition to being the established historic practice for EWSI's PBR, this approach also aligns with AUC Rule 002, which similarly sets "minimum service quality" measures for utilities under that PBR.

Standards of performance do generally reflect increasing levels of performance from one PBR term to another as they are typically based on the prior 10-year average of actual performance. This allows the standards to reflect on-going operational improvements. However, there are some metrics where the standards may not be adjusted from one PBR term to another. This occurs when an increased level of performance is not warranted from a customer service or cost/benefit perspective. As an example, water quality far exceeds all public health guidelines and increasing levels beyond the current levels is costly and would provide no material benefits to consumers. There are also instances, such as with response time metrics, where customers have expressed no concerns with the current standard and the underlying factors make achieving the current standard more difficult over time without adjusting the actual standard.

In response to the motion, EWSI will provide an analysis of the implications of moving away from the current metrics approach to one based on increasing level of performance within a shorter timeframe than currently used. These implications will include the type and style of metrics appropriate under these conditions as well as the impact on rate-payers as the costs of increasing performance is reflected in rates.

### 3.8 Sanitary IRP and Wastewater Treatment IRP

The PBR applications present capital plans over the 5 (or 3) years of the PBR terms. These plans are under pinned by much longer-term plans referred to as Integrated Resource Plans (IRP).

EWSI has traditionally been progressive in its approaches to long range planning through the development of the Integrated Resource Planning (IRP) approach for the Water and Gold Bar operations. Most recently, the development of the Stormwater Integrated Resource Plan (SIRP) has been well received across the industry and is seen as a leading approach to adapt for the changing climate conditions expected in the future.

The IRPs typically define the infrastructure needs over a longer timeframe (20-40 years) as well as the underlying long term drivers of those requirements (population growth, consumption trends, policy choices for managing growth and other factors, technological advancements, etc.). These plans have been presented to the Utility Committee in the past just prior to the PBR application submission so that the PBR capital plans can be viewed in the longer-term context.

Prior to the upcoming PBR applications, EWSI will present both the Sanitary IRP for Drainage sanitary infrastructure and the Gold Bar IRP for wastewater treatment infrastructure. These plans will cover the longer-term growth plans for each utility and be informed by public engagement. The presentation of these plans also provides an opportunity to confirm that the IRP's in all areas are in alignment with the growth and development plans for the City and the Region in terms of population numbers and locations of growth nodes.

## 4.0 UTILITY COMMITTEE - APPLICATION REVIEW TIMING

EWSI proposes to file both the Drainage and Wastewater Treatment PBR applications for the 2025-2029 term, by June of 2024. This timing, as outlined in the chart below, will allow approximately 300 days from submission to when the new rates become active and is the timing that has been used for most applications in the past (note – the 2022-24/26 applications coincided with an election year, so the submission timing was approximately 4 months earlier). The chart below also defines an earlier submission option should Utility Committee determine that a more advanced schedule is appropriate based on their requirements.

Both schedules are developed with the same time allotment for interim activities as these are seen as providing sufficient time for City Administration to complete their Reports of Reasonableness and EWSI to answer information requests and provide responses reports prior to the Hearing. Any changes to the application directed by Utility Committee will then be incorporated into the Compliance filing so that the rates and terms and conditions of service presented to City Council for approval reflect that direction.

The central difference between the schedules, in addition to the submission date, would be with the inclusion of actual financial results for the current term in the application. These results are intended

as the basis of comparison of actual results to what is being proposed in the application. With the Proposed Timing, the financial schedules would include actual results for 2022, 2023 and forecast results for 2024. With the Advanced Timing schedule, the actual results would be for 2022 only with forecasts results for 2023 and 2024 as EWSI internal timing would not allow the results to be completed and verified in time to be included for a March 1, 2024 submission.

**2025-29 Drainage and Wastewater Treatment PBR - CoE Application Review**

| | Proposed Timing | | Advanced Timing | | Notes |
|---|---|---|---|---|---|
| | Start | Finish | Start | Finish | |
| **Rate Report (Application) Submission** | **n/a** | **1-Jun-24** | **n/a** | **1-Mar-24** | |
| Councillor Information Requests (IR's) | 7-Jun-24 | 15-Jul-24 | 8-Mar-24 | 15-Apr-24 | 38 days for Information Requests |
| Administration/Utility Advisors IRs | 7-Jun-24 | 15-Jul-24 | 8-Mar-24 | 15-Apr-24 | 38 days for Information Requests |
| Information Request Responses by EWSI | 7-Jul-24 | 21-Jul-24 | 8-Apr-24 | 22-Apr-24 | 14 days |
| Public Submissions | 7-Jun-24 | 31-Jul-24 | 8-Mar-24 | 30-Apr-24 | Open for 45 days |
| Reports of Reasonableness Complete | 1-Jun-24 | 31-Jul-24 | 1-Mar-24 | 30-Apr-24 | 60 days to complete |
| EWSI Response to Reports of Reasonableness | 1-Aug-24 | 31-Aug-24 | 1-May-24 | 31-May-24 | 30 days to complete |
| Contingency | 1-Sep-24 | 30-Sep-24 | 1-Jun-24 | 30-Jun-24 | |
| **Hearing (Non Regular Committee Meeting)** | **1-Oct-24** | **31-Oct-24** | **1-Jul-24** | **31-Jul-24** | Within these dates |
| Compliance Filing | 1-Nov-24 | 30-Nov-24 | 1-Aug-24 | 31-Aug-24 | 30 days to complete |
| Contingency | 1-Dec-24 | 31-Dec-24 | 1-Sep-24 | 30-Sep-24 | |
| First/Second/Third Reading | 1-Jan-25 | 15-Feb-25 | 1-Oct-24 | 15-Nov-24 | 45 days for schedule |
| Rates Implementation | 1-Apr-25 | 1-Apr-25 | 1-Apr-25 | 1-Apr-25 | |

## 5.0 APPLICATION FORMAT

EWSI has historically followed a consistent structure and format for the PBR applications in order to provide consistency and ease of review from one application to another. Unless otherwise advised, EWSI intends to follow a similar course for the 2025-2029 applications (The Table of Contents from the most recent Wastewater treatment application is detailed in Appendix B for reference).

EWSI will submit separate applications for Drainage Services and Wastewater Treatment Services and provide all of the evidence supporting the requested rates for the upcoming PBR terms. Separate financial schedules for Drainage and Wastewater Treatment Services based on the minimum filing requirements (MFR) as approved by the Utility Committee in 2013 will be included. This standardized MFR was implemented in the 2017-2021 PBR applications and allows for comparability with these applications and with EWSI's PBR Progress Reports. The PBR applications will set out EWSI's operational plans for the upcoming PBR term in a similar format as pervious applications.

Capital expenditure justifications for capital investments over the PBR term will be included. Formal business cases will be prepared for all projects and programs that are at or above $5 million for Wastewater Treatment and at or above $10 million for Drainage Services. The business cases prepared for each of the three applications is anticipated to represent approximately 75% of the total capital expenditures for each business unit for the PBR term. Business cases for discrete projects will include an alternative analysis and business cases for programs will provide background on the

program criteria used to determine the level of spending. Overarching strategies will be included for some larger initiatives to provide the context behind the various programs and projects needed to support the strategy (e.g. Stormwater Integrated Resource Plan and CORe).

Additionally the applications will include a common set of appendices that will include (but will not be limited to):

- Summary of key changes to the Bylaws;
- Expert reports to support key parameters in the PBR (such as cost of capital, productivity factors, EWSI credit rating);
- PBR progress reports for the previous PBR term;
- Business cases and post implementation reviews (for 2022-2024 approved projects/programs where spending is more than 20% over/under the initial PBR forecast);
- A stakeholder engagement report;
- Cost of service studies; and
- Depreciation studies.

## APPENDIX A - PERFORMANCE BASED REGULATION - OVERVIEW

This PBR Overview is intended to provide an in-depth explanation of the various components of the performance based regulation (PBR) to enhance general understanding. Under EWSI's Performance Based Regulation (PBR), every five years (or three to achieve specific outcomes) EWSI submits an application to its regulator, Edmonton City Council, to extend the PBR methodology for a subsequent five-year period. These applications cover water treatment and distribution, wastewater treatment as well as sanitary and stormwater drainage. With each five-year application, EWSI applies the same general performance based regulation methodology and principles that underpinned the original Waterworks Bylaw developed in 2002.

The PBR model was initially approved by Edmonton City Council in 2001 and has been utilized to determine water rates charged to City of Edmonton customers since January, 2002. EWSI followed common industry practices in developing the performance-based regulation. Research was performed as to regulatory practices worldwide, looking at cross-utility experience including gas, electricity, telecommunications and water. Each aspect of the performance-based regulation was carefully reviewed and selected so that it would best suit the circumstances of EWSI, its regulator and its customers.

Beginning with the 2012-2016 PBR term, EWSI incorporated the wastewater treatment operations provided at the Gold Bar wastewater treatment plant into the PBR structure. Wastewater services are provided under a separate rate structure from water services. Similarly, in the 2022-2024 PBR Term, EWSI included sanitary and stormwater drainage in the PBR structure at the direction of City Council as part of the drainage transfer from the City to EPCOR. Each of these utilities also has a separate rate structure.

Each year since the inception of PBR, EWSI has filed a report with the City of Edmonton outlining the rates to be charged to the various classes of customers in the upcoming year. This report includes an audit opinion to provide assurance that the rates have been calculated in accordance with the provisions of the Bylaws. Since 2008, EWSI has also provided an annual PBR Progress Report to Utility Committee, which outlines in more detail EWSI's performance in the prior year with regards to its operational performance against its service quality standards, its financial results for the year compared to the PBR plan, and opportunities and challenges expected in the upcoming year.

In March 2013, City Council approved EWSI's proposed Minimum Filing Requirements (MFR) to be used for the subsequent PBR application (2017-2021 PBR term). The MFR includes both financial and non-financial filing requirements and takes guidance from the Alberta Utilities Commission MFR. The intent of EWSI's MFR is to provide: (i) greater visibility and transparency; (ii) improved consistency and comparability in terms of structure and format of application consistent with filings by other regulated

entities in Alberta; and (iii) better functionality in terms of decision-useful information in a readily extractable form.

EWSI's MFR has been maintained since the 2017-2021 PBR application and includes the following for all three utilities:

- detailed financial schedules underlying the revenue requirement;
- rates schedules and an explanation of the linkage between cost of service by customer class and rates;
- detailed business cases providing supporting rationale for capital projects;
- operating cost variance explanations providing greater visibility on significant changes impacting operating costs;
- forecast assumptions and methodologies for consumption volumes, customer growth and operating and capital costs.

The remainder of this document outlines EWSI's operations and customers and summarize its performance-based regulation model and the key concepts and principles which underlie it.

## 1.0 EWSI'S WATER TREATMENT OPERATIONS

EWSI's Edmonton water system is comprised of water treatment, transmission and distribution operations. EWSI provides water service to three distinct regulated customer segments: (i) retail water services to in-city customers; (ii) wholesale water services to regional water customers surrounding the city of Edmonton; and (iii) fire protection services within the city of Edmonton which have been incorporated into general rates since 2022, where prior to that they were a separate charge to the City of Edmonton and collected as part of taxes. EWSI also provides non-regulated commercial water services. These commercial operations are independent from the regulated water utility and are not included under the PBR cost of service calculation. Separate financial records and transfer pricing conventions are followed to ensure the independence of these operations.

### 1.1 In-City Retail Services

The primary function of EWSI's water operations are the treatment and distribution of water within the City of Edmonton. This customer segment represents all metered customers within the municipal boundaries of the City of Edmonton. Within this segment are three primary customer classes: residential, multi-residential, and commercial. These customer classes are determined based on similar demand patterns and service characteristics.

### 1.2 Wholesale Water Services

Wholesale water services are provided to the communities surrounding Edmonton represented by the Regional Water Customers' Group (RWCG). The current members of the group are: City of St. Albert, Strathcona County, Capital Region Parkland Water Services Commission, Town of Morinville, Capital Region Northeast Water Services Commission, Capital Region Southwest Water Services Commission and Sturgeon County. EWSI charges a wholesale water rate to these customers for bulk water supplied at a number of delivery points. This wholesale water rate is determined on an actual cost of service basis and is outside EWSI's PBR Bylaw. From their respective delivery points, the RWCG members distribute the water to their end-use customers through their own systems. The RWCG members are responsible for billing their end use customers and determine the associated rates independently of EWSI.

## 2.0 EWSI'S WASTEWATER TREATMENT SERVICES

Edmonton's regional wastewater System consists of the Edmonton Wastewater Collection System, the Alberta Capital Region Wastewater Collection System, the Gold Bar WWTP, and the Alberta Capital Region WWTP. These systems provide wastewater services to domestic, commercial and industrial customers in Edmonton and a wide geographic area surrounding Edmonton (the "Alberta Capital Region").

The configuration of the wastewater collection systems determine how wastewater generated within the region is distributed between the two treatment plants. Currently Gold Bar WWTP receives the majority of the wastewater from within Edmonton and the Alberta Capital Region WWTP receives the majority from the surrounding areas. Both the Gold Bar WWTP and the Alberta Capital Region WWTP provide treatment of wastewater, and treated effluent from these plants is returned to the North Saskatchewan River. The treated effluent is required to meet environmental requirements established by Alberta Environment and Parks and set out in each facility's Approval to Operate.

EWSI charges its city of Edmonton customers for wastewater treatment services while the Capital Region is responsible for their customer rates and billing.

## 3.0 EWSI DRAINAGE SERVICES

EWSI's Drainage system provides Edmonton with sanitary and stormwater services through more than 6,900 kilometers of underground pipes and tunnels and 430,000 service connections to homes, businesses and industrial/commercial customers in the city. The overall Drainage system consists of three different types of sewer systems: the sanitary sewer system, the combined sewer system and the stormwater sewer system. Nearly one third of the sewers are combined sewers which are typically

located in older areas of the city and collect and convey sanitary and stormwater in a single pipe. In newer areas, sanitary sewers collect and convey wastewater in a system separate from the stormwater sewers.

EWSI charges its city of Edmonton customers for sanitary and stormwater separately with individual rates set for each service.

## 1.0 PERFORMANCE-BASED REGULATION METHODOLOGY

EWSI's PBR methodology reflects several key components described below.

### 1.1 Cost Based Rates - Methodology

EWSI's PBR methodology is predicated on establishing cost based rates, fees and charges. Cost-based rates provide sufficient funding to allow water and wastewater utilities to be operated and maintained in a sustainable manner while meeting all regulatory requirements for water quality. The cost based, or cost of service, methodology has long been the basis of EWSI's water and wastewater rates and has been incorporated into the methodology for determining drainage rates.

Utilizing cost based rate making methodologies is the most commonly accepted basis of rate setting for water and wastewater utilities in North America. Cost based methodologies are endorsed by Canadian and American water utilities, their regulators and by the American Water Works Association (AWWA) and the Water Environment Federation (WEF). The AWWA, an organization of representatives from water utilities, regulators and other interested parties, is the authority on rate setting for water utilities and defines the accepted practices for North America. Similarly, the Water Environment Federation defines accepted practices for wastewater. While the methodology followed by EWSI in determining its water rates meets AWWA and WEF guidelines, it must also meet the scrutiny of the Alberta Utilities Commission (AUC) in its capacity of regulator for EWSI's Regional customers (complaint basis), and Edmonton City Council in its capacity of regulator for EWSI's customers within the City of Edmonton.

Under the cost based methodology, the regulator determines the revenue requirement (cost of service) that reflects the total amount that must be collected in rates for the utility to recover its prudently incurred costs for maintaining, operating and investing in the utility system plus a fair return on investment. As long as a utility makes prudent decisions that are in the public interest, regulators will allow it to recover those costs and earn a fair return through customer rates. EWSI determines the revenue requirements for water, wastewater treatment, sanitary drainage and stormwater drainage individually and sets rates based on those individual requirements.

Once the respective revenue requirements are determined, each cost component is assigned or allocated on an appropriate basis to determine the costs to serve various customer classes with similar end uses and demand. The allocation process is based on a Cost of Service Study (COSS). The allocation process used to determine EWSI's proposed rates are consistent with AWWA recommended practices for water and WEF practices for wastewater and follows traditional practices of regulated water utilities.

The following calculations are conducted through the COSS:

- costs are categorized by major business function (water treatment, reservoirs, water distribution and transmission, customer billing and administration or primary treatment, secondary treatment, customer billing, etc.),
- appropriate allocations of these functional costs by customer segments/classes are developed, based on engineering and operational assessments, and
- rates are designed to recover the forecast cost of service for each customer segment or class.

### 1.2 Revenue Requirement

EWSI's revenue requirements for each utility comprise its prudent costs to operate, maintain, manage and expand the waterworks or wastewater systems. These costs are recovered from customers through the rates they pay for water, wastewater treatment or drainage services. The components of the revenue requirement are:

- Operating Costs
- Revenue Offsets
- Taxes and Franchise Fees
- Depreciation
- Interest
- Return on Equity

For EWSI's Edmonton water operations, regulated operating and capital costs are managed and reported for the total Edmonton waterworks system (i.e. including RWCG requirements). EWSI first develops a forecast of the costs for the total system for the five-year PBR term. Then, using the cost of service model, EWSI allocates the operating costs, capital costs, depreciation expenses and rate base amounts between the three regulated customer segments in order to determine the cost of service for each customer segment. The forecast revenue requirement (cost of service) required to provide water service to EWSI's in-city customer segment is similarly allocated to the residential, multi-residential and commercial customers classes. These amounts then form the basis for establishing EWSI's water rates under its performance based regulation plan. These calculations are detailed in EWSI's water rate application.

A similar process is used for the wastewater treatment and drainage utilities although the process tends to be less complex as there is not the same distinctions between customer classes.

EWSI prepares its financial information in accordance with regulatory accounting standards which are the collective accounting guidelines, procedures, policies and practices used by utilities when providing financial information to the AUC for rate-making purposes. Regulatory accounting differs from the International Financial Reporting Standards (IFRS) used by EWSI for all other financial reporting. Accordingly, EWSI maintains separate IFRS and Regulatory financial records, so that it is able to meet regulatory reporting requirements.

### 1.3 Operating Costs

EWSI's operating costs includes the following general categories:

**Water Treatment Plant** - Water treatment plant costs include all the costs associated with treating raw river water to a quality that is fit for consumption and then storing that water in the on-site reservoirs. Types of costs in this category include employee costs to operate and maintain the facility, electricity, natural gas, chemicals, pumping and quality assurance testing.

**Water Reservoirs and Pumphouses** - Once treated, water is pumped to reservoirs throughout the city. Sufficient water pressure and quantity of water is maintained to meet the demands of customers throughout the year.

**Water Distribution and Transmission** – EWSI operates a large and complex integrated network of over 3,500 kilometers of buried transmission and distribution mains, 17,000 fire hydrants, 54,000 valves as well as 240,000 water meters and customer services. This infrastructure must be maintained to ensure water is delivered to customers with the minimum of interruption and in the same excellent quality as when it left the treatment plant.

**Wastewater Treatment** – Wastewater Treatment costs include the costs associated with treating wastewater to the level where it can be returned to the river (or reused in industrial applications). The costs in this category relate to specific wastewater treatment functions such as: pre-treatment, primary, secondary and tertiary treatment, solids processing and solids transportation, storage and management. Specific costs in this category include employee costs to operate and maintain the facility, electricity, natural gas, chemicals and quality assurance testing.

**Drainage Services -** Costs associated with the provision of sanitary and stormwater collection services are generally managed on a combined basis, as there are shared facilities and resources. However, sanitary and stormwater collection are separate and distinct utility services, with separate rates. Therefore, separate revenue requirements are developed for each utility using the cost of service

models including the allocation of costs to the respective utilities based on the underlying cost drivers). As with water distribution and transmission, these costs ensure infrastructure is maintained to provide service to customers with the minimum of interruption.

**Customer Services** - This cost category includes the costs to read meters, generate customer invoices and answer customer inquiries and service calls.

**Administration** - This category captures the business costs of operating a utility. This includes governance, environmental and safety management, security, information services, finance, and human resource functions.

### 1.4 Taxes and Franchise Fees

This category includes the taxes payable by EWSI (property taxes, linear taxes and business taxes) and franchise fees payable to the City of Edmonton.

### 1.5 Depreciation

Capital assets are depreciated over the shortest of the assets' physical, technological, commercial or legal life. Depreciation expense is a non-cash expense reflecting the portion of a tangible capital asset that is deemed to have been consumed or expired. The depreciation rates used by EWSI are typically based on Depreciation Studies completed by an external firm.

### 1.6 Interest Expense

This cost category represents the cost for EWSI to service its existing debt and to finance new debt requirements. A waterworks system is very capital intensive with an ongoing need to invest in assets with service lives of 40 or more years. As a result, debt financing is a necessary part of operating a utility. EWSI's cost of new debt is based on its credit rating of A (low) as assessed by the DBRS credit rating agency.

### 1.7 Return on Equity

New capital projects are financed by a combination of debt and equity. Just as debt attracts an interest cost for borrowing, equity investment attracts a cost as well. EWSI's return on equity is determined based on its equity investment in plant assets (net of depreciation and including working capital investment). For regulated utilities, the cost of plant assets less depreciation plus working capital is referred to as the rate base. Capital structure is the proportion of investment in debt and equity.

The regulator determines the fair rate of return that the utility is allowed to earn on their investment in utility assets (rate base). A cost of capital expert typically recommends the appropriate return on equity for EWSI based on its business and financial risk.

## 4.0 WATER AND WASTEWATER TREATMENT RATE CALCULATIONS

Water rate standards set by the AWWA and WEF are based upon a number of common principles. The purpose of these principles is to balance the interests of the customers with the utility. EWSI has set its water, wastewater treatment and drainage rates in accordance with these principles.

- **Rates are based upon the cost of service -** This means that rates are set at a level sufficient to recover EWSI's annual operating and capital costs associated with providing safe and reliable utility services, plus a fair rate of return on its investment in utility assets.

- **No cross-subsidization of water rates between customer classes -** Rates are set so that each customer segment or class pays for its fair share of the cost of producing and distributing the water, collecting storm or sanitary drainage or treating the wastewater based on the cost to provide that level of service to the particular customer segment. Each segment or class includes customers with similar characteristics (consumption, demand).

- **No cross-subsidization of rates between generations of customers -** Intergenerational equity is maintained by ensuring that EWSI's customers pay rates based on the cost of the utility service they receive and costs are not unfairly borne by past or future generations of customers.

- **Equity of rates to customers who are within a single customer class -** Once a customer is assigned to a class, there is no further distinction of individual customer characteristics such as the distance water travels after it is treated. All customers in a class share in the costs assigned to their customer class based upon their individual water consumption.

- **Rate stability and predictability -** An important principle of utility rate setting is that of rate stability. Under the PBR framework, EWSI's rates are based on a formula which provides stable and predictable rates, minimizing any unexpected rate increases. To ensure customers receive this benefit, EWSI bears the risk of annual variances in the cost of service

### 4.1 PBR Rate Structure

EWSI's in-city customers pay both a consumption charge and a fixed monthly service charge. The fixed charge recovers costs that are directly attributable to a customer including the cost of the water meter, customer service and billing. The consumption charge captures all the costs of operations,

maintenance, administration and capital investment associated with operating the water or wastewater utility. While the cost categories remain the same, the level of cost within each category can change from year to year.

Service charges include the miscellaneous costs that are incurred by specific customer requests and do not form part of the Consumption Charge or the Fixed Monthly Service Charge. The rates for individual service charges are set on a cost of service basis.

### 4.1.1 Water Rate Structure

EWSI's residential water rates are based on an inclining block structure to promote water conservation. EWSI charges a higher consumption charges to residential customers who use larger amounts of water and lower consumption charges to residential customers who use less water. The intent of this approach is to incent water conservation.

Many of EWSI's commercial customers use large volumes of water as a primary input to their business operations and these large businesses tend to have stable consumption patterns by using the same amount of water evenly throughout the day, and each day of the year. This type of water use causes less cost and is a more efficient use of the water system. Therefore, the commercial class has a declining rate structure. A declining block rate structure is designed so that as a customer uses more water, they are charged a lower rate per cubic meter. EWSI has set the size of the blocks within the rate structure based upon the results of a statistical study of water usage by the type of customer within the commercial class. This allows EWSI to ensure that similar customers within the class pay a similar water rate. This promotes equity within the rate class.

EWSI also incorporates a classification for multi-residential customers as research has determined that the cost to provide water to multi-residential customers is not the same as for the residential or commercial customers. For example, multi-residential customers do not change their consumption patterns seasonally as is the case with residential customers. At the same time, multi-residential customers do not use the same volume of water or have the same infrastructure requirements as commercial customers. As a result, they also have a unique declining rate pricing structure.

### 4.1.2 Wastewater Treatment Rate Structure

EWSI wastewater rates are based on a common consumption charge for both residential and commercial customers and additional over-strength charges for a limited number of commercial, industrial and institutional customers. The common charge for residential and commercial customers recognizes that wastewater received for processing has been comingled from a variety of sources, including those outside the city. As a result, there are limited means to broadly determine a strength based distinction between the customer classes and to adjust rates accordingly. Surcharges are

applied for some customers where on site monitoring enables particular wastewater constituents to be determined. These customers pay a surcharge above the charge for domestic strength wastewater based on the unique composition of their wastewater.

### 4.1.3 Sanitary Drainage Rate Structure

Sanitary utility rates consists of a flat monthly charge levied on each customer's premises that varies with the size of the premises' water meter and a variable monthly charge based on a rate per cubic metre of either metered water consumption for the premises, or, if a sewer meter has been installed, the sewer discharge for the premises. The sanitary utility rate design also includes a provision for EWSI, under the conditions of the Utility Credit Programs, to provide a utility credit to discount metered water volumes. There is only currently only one customer, the University of Alberta that receives a utility credit. This credit provides a 44% reduction to the sanitary utility variable rate to recognize that the University of Alberta is a large wholesale customer that owns and operates its own on-campus collection system.

### 4.1.4 Stormwater Drainage Rate Structure

EWSI's stormwater utility rates are designed to collect the costs associated with the management of stormwater runoff. The current stormwater utility rate design consists of a single rate applied to the product of:

- The area of the property in square meters and, for multiple units sharing a single building, the proportion of the building lot area attributable to each unit;
- The development intensity factor, which measures the portion of lot being used for its intended development. The development intensity factor is set at 1.0, except for those properties where owners demonstrate that they contribute significantly less stormwater runoff per property area to EWSI's land drainage system during rainfalls than other similarly-zone properties through the use of retention/detention ponds or other stormwater best practices. Applications for changes to the development intensity factor are made in accordance with the terms and conditions of the Utility Credit Programs; and
- The runoff coefficient, which measures the permeability of the lot's surface (i.e., grass versus concrete), based on land zoning. The runoff coefficient ranges from 0.20 (e.g., agricultural zone AG) to 0.95 (e.g., commercial business zone CB2). As point of reference, a single-detached residential home (Zone RF1) has a runoff coefficient of 0.50. The runoff coefficients are included in Schedule 1 of the Drainage Services and Wastewater Treatment Bylaw.

## 5.0 ROUTINE RATE ADJUSTMENTS

An annual rate adjustment is applied to each class of customer contained in the respective Bylaws. Each year, certain components appear as an adjustment to the fixed monthly service charge and/or consumption charge. The categories falling under this heading are inflation, the efficiency factor and special rate adjustments.

### 5.1 Inflation

As set out in Sections 1 and 2 of Schedule 3 to the PBR Bylaw, consumption charges and fixed monthly service charges are adjusted annually by the forecast rate of inflation for the upcoming year plus an adjustment for the difference between actual and forecast inflation rate for the prior year. EWSI relies on an external independent source for the inflation factor forecasts. For the 2022-2024/26 PBR term, EWSI utilized the Conference Board of Canada for inflation factor forecasts.

EWSI's inflation factor is intended to reflect EWSI's input cost escalation and includes both a labour and non-labour component. The inflation factor is calculated based on two Statistics Canada indices: Alberta CPI for the non-labour component and Alberta Hourly Earnings for the labour component. The inflation factor is calculated as 60-65% times the annual escalation in Alberta CPI index and 35-40% times the annual escalation in Alberta Hourly Earnings index (depending on the utility). These ratios reflects each utility's proportion of internal non-labour and labour related input costs.

### 5.2 Efficiency Factor

As set out in Sections 1 and 2 of Schedule 3 to the PBR Bylaw, the efficiency factor is a reduction to the inflation factor applied to the rates on an annual basis. The efficiency factor reduces the increase in rates to customers. It recognizes that as a business grows, it should become more efficient and the efficiency factor therefore represents the minimum amount by which EWSI must improve operational efficiency to maintain its net income. The efficiency factor also drives efficiencies during the first few generations of the PBR as the utility transitions from cost of service regulation. This is a measurable benefit because the efficiency factor is written into the PBR Bylaw as an annual reduction to the rates.

### 5.3 Special Rate Adjustments

The special rate adjustments are outlined in Section 2.3 of Schedule 3 of the PBR Bylaw. The special rate adjustments are added to the consumption charge and fixed monthly service charge for all rates. After the special rate adjustments have been factored into each year's rates, these adjustments will continue to form part of the basic consumption charges and fixed monthly service charges for water services in all subsequent years. Special rate adjustment are used for factors that are increasing at rates other than inflation, for special initiatives (such as environmental programs), or for rebasing costs from one term to another.

The special rate adjustments for re-basing are required to reset EWSI's going-in year rates (initial rates for the upcoming PBR term) to reflect the following: (i) adjusted going-in year rate base to allow EWSI to recover higher than forecast capital expenditures during prior term; (ii) adjusted going-in year operating costs to allow EWSI to pass on operating cost savings or increases attributable to the prior term; and (iii) capital expenditures planned for current PBR term.

### 5.4 Service Quality Measures and Penalties

Each utility maintains a number of performance metrics grouped under common indices, which are intended to ensure the maintenance of a standard level operational performance. Since 2002, these measures have been an integral part of performance-based regulation. These measures ensure that EWSI does not compromise customer service levels as it seeks to identify cost saving opportunities during the PBR period. In the event that service or quality drops below a benchmarked standard, EWSI is financially penalized and that penalty amount is refunded to customers through a rebate on their water or wastewater treatment bill.

Any penalty arising will be applied to the fixed monthly service charge as set out in Bylaws. There is a maximum penalty of up to $2,400,000 ($1,000,000 for water services, $1,000,000 for drainage services and $400,000 for wastewater treatment services) that could be assessed if EWSI does not fully meet the performance criteria. The service quality measures are based on a 100 point system for each of water, wastewater and drainage and there points attributable to each index. By design, EWSI can obtain a maximum score of 110 points, although there is no reward for exceeding 100 points. Bonus points are allotted for performance above the standard. Although EWSI has been able to meet the service standards since 2002, the variation in scores achieved in each year indicates that the measures are challenging but achievable.

## 6.0 NON-ROUTINE RATE ADJUSTMENTS

EWSI assumes the forecast risk on all operating and capital related costs. However, there are cost factors that are beyond the control of EWSI. In the rare or unlikely situations where these factors result in a significant impact to EWSI, these costs can be passed through to customers based on City Council or City Manager approval.

By example, if EWSI received approval for the costs associated with moving water pipes to accommodate a specific LRT alignment, and that alignment is subsequently changed, EWSI has the opportunity to request a non-routine adjustment. Under the performance-based regulation structure, the non-routine adjustment would be the mechanism through which the change is approved and rates adjusted. Non-routine adjustments are, by their nature unusual, significant in size

or nature and beyond the scope of control of EWSI. Examples of the types of items that may be requested as a non-routine adjustment of rates include:

- Injuries and Damages
- Government Regulation
- System Deterioration
- Franchise Fee Changes
- Government Taxes Fees & Levies
- River Water Quality
- Customer Driven System Expansion
- City Requested Relocations

If EWSI anticipates making a request for one or more non-routine adjustments, EWSI will submit its request for non-routine adjustments to the City Manager, and will include with such request sufficient information to enable the City Manager / City Council to evaluate and approve the request, if appropriate. A business case supporting the request is typically provided to the Utility Committee prior to the NRA submission to the City Manager.

**APPENDIX B – 2022-2024 WASTEWATER TREATMENT PBR APPLICATION – TABLE OF CONTENTS**


| | | | |
|---|---|---|---|
| **1.0** | **APPLICATION OVERVIEW** | | **1** |
| | 1.1 | Introduction | 1 |
| | 1.2 | Applied-For Wastewater Treatment Rates | 3 |
| | 1.3 | Applied-For Performance Measures | 5 |
| | 1.4 | EWSI Background and Corporate Structure | 5 |
| | 1.5 | Forecast Revenue Requirement | 6 |
| | 1.6 | Proposed Cost of Capital | 8 |
| | 1.7 | Annual Wastewater Treatment Rate Setting (2017-2021) | 9 |
| | | 1.7.1 Inflation Factor | 11 |
| | | 1.7.2 Efficiency Factor | 11 |
| | 1.8 | Special Rate Adjustments to Wastewater Treatment Rates | 12 |
| | | 1.8.1 Special Rate Adjustments for Re-Basing | 12 |
| | | 1.8.2 Special Rate Adjustments for the 90 Day Deferral Program | 13 |
| | 1.9 | Customer Bill Impact | 14 |
| | 1.10 | Stakeholder Consultation | 16 |
| | 1.11 | Organization of EWSI's Wastewater Treatment Rate Application | 18 |
| **2.0** | **SYSTEM OVERVIEW AND FUTURE EXPECTATIONS** | | **20** |
| | 2.1 | Wastewater System Overview | 20 |
| | | 2.1.1 Sources of Wastewater | 23 |
| | 2.2 | Gold Bar Wastewater Treatment Plant | 24 |
| | | 2.2.1 Hydraulic System | 28 |
| | | 2.2.2 Pre-Treatment | 28 |
| | | 2.2.3 Primary Treatment | 29 |
| | | 2.2.4 Enhanced Primary Treatment | 29 |
| | | 2.2.5 Secondary Treatment – Biological Nutrient Removal (BNR) | 29 |
| | | 2.2.6 Secondary Treatment – Final Clarification | 30 |
| | | 2.2.7 Tertiary Treatment – UV Disinfection | 30 |
| | | 2.2.8 Membrane Filtration for Industrial Process Water | 31 |
| | | 2.2.9 Solids Handling and By Products | 31 |
| | | 2.2.10 Support Systems, Buildings, etc. | 33 |
| | 2.3 | Gold Bar WWTP Long Range Planning and Asset Management | 34 |
| | | 2.3.1 Integrated Resource Plan | 34 |
| | | 2.3.2 IRP Implementation | 35 |
| | 2.4 | 2017-2027 Performance Overview – Accomplishments and Challenges | 35 |
| | | 2.4.1 Operational Performance and Metrics Review for 2017-2019 | 35 |
| | | 2.4.2 Financial Performance Review for 2017-2021 | 38 |

2.5 Future Expectations 40
2.5.1 Environmental Regulations 41
2.5.2 Demand Projections versus Plant Capacity – Long-Range Outlook and Strategic Alternatives 43
2.5.3 GHG Emissions Reduction Plan 45
2.5.4 Climate Change Strategy and Flood Plan 46
2.5.5 Technology Changes 47
2.5.6 Clover Bar Biosolids Recycling Facility 48

**3.0 REVENUE REQUIREMENT SUMMARY 50**

**4.0 METHODOLOGY AND KEY ASSUMPTIONS 52**
4.1 Accounting Policies 52
4.2 Cost Forecasting Process 53
4.2.1 Inflation Factor Forecast 55
4.2.2 Operating Cost Forecast Process 56
4.2.3 Capital Cost Forecast Process 59
4.3 Capital Structure and Cost of Capital 68
4.3.1 Rate of Return on Equity 68
4.3.2 Cost of Debt 69
4.4 Depreciation and Amortization 70
4.5 Capitalized Overhead Methodology 72
4.6 Inter-Affiliate Transactions Summary 73
4.7 Wastewater Volume and Customer Count Forecast Methodology 75
4.7.1 Impacts of the COVID-19 Pandemic 76
4.7.2 Customer Count Forecasting Process 76
4.7.3 Volume per Customer Forecasting Process 79
4.7.4 Consumption Volume Forecast 81

**5.0 OPERATING COSTS 83**
5.1 Operating Costs by Cost Category 84
5.2 Operating Costs by Function 88
5.2.1 Power, Other Utilities and Chemicals 90
5.2.2 Wastewater Treatment 93
5.2.3 Operational Support Services 96
5.2.4 Capitalized Overhead 99
5.2.5 Billing, Meters and Regulatory Service 100
5.2.6 EWSI Shared Services 102
5.2.7 Corporate Shared Services 103
5.2.8 Franchise Fee and Property Taxes 105

**6.0 Capital Expenditures 107**
6.1 Capital Expenditures for the 2017-2022 PBR Term 107
6.1.1 Regulatory Category Capital Projects 111
6.1.2 Growth/Customer Requirements Capital Projects 111
6.1.3 Health, Safety and Environment Capital Projects 113
6.1.4 Reliability and Life Cycle Improvement Capital Projects 113
6.1.5 Performance Efficiency and Improvement Capital Projects 124
6.2 Forecast Capital Expenditures 2022-2024 PBR Term 125
6.2.1 Regulatory 128
6.2.2 Growth/Customer Requirements 129
6.2.3 Health, Safety and Environment (HSE) 129
6.2.4 Reliability and Life Cycle 129

**7.0 DEPRECIATION AND AMORTIZATION 134**
7.1 Depreciation 134

**8.0 RATE BASE 135**
8.1 EWSI Rate Base 135
8.2 Working Capital 136
8.3 Average Materials and Supplies 136

**9.0 RETURN ON RATE BASE 137**
9.1 Return on Rate Base Calculation 137
9.2 Rate of Return on Equity 137
9.3 Cost of Debt 142
9.4 Capital Structure 143

**10.0 REVENUE OFFSETS (NON-RATE REVENUES) 144**

**11.0 COST OF SERVICE 146**
11.1 Cost of Service Methodology Review 146
11.2 Revenue Requirement 146
11.3 General Cost of Service Procedures 147
11.4 Summary of the Cost of Service Results 148

**12.0 PBR Rates 150**
12.1 PBR Rate Structure by Customer Class 150
12.1.1 Residential 150
12.1.2 Multi-Residential 150
12.1.3 Commercial 150
12.1.4 Overstrength Surcharges 151
12.2 2022-2024 Wastewater Treatment Rates and Special Rate Adjustments 151

12.2.1 Special Rate Adjustment for Re-basing 151
12.2.2 Special Rate Adjustment for 90 Day Deferral Program 155
12.3 Summary of Rate Impacts 157

**13.0 Performance Measures 159**
13.1 Overview 159
13.1.1 Framework for Performance Measures 159
13.1.2 Assessment of Performance 160
13.1.3 EWSI's Performance Experience 161
13.1.4 Performance Benchmarks 162
13.2 Wastewater Treatment Performance Benchmarks 163
13.2.1 Water Quality and Environmental Index 164
13.2.2 Customer Service Index 169
13.2.3 System Reliability and Optimization Index 173
13.2.4 Safety Index 177