

November 14, 2019

To: Members
Public Works and Infrastructure Committee

Re: Wastewater Master Plan

RECOMMENDATION

1. That City Council approve the Wastewater Master Plan (WWMP) and authorize the use of the WWMP as a guide for future wastewater-related decisions and actions.
2. That Administration provide a progress report regarding implementation of the WWMP to the Public Works and Infrastructure Committee in 2022.
3. That this report be forwarded to the November 25, 2019 meeting of City Council for approval.

CONCLUSION

This report provides an overview of the Wastewater Master Plan (WWMP) and outlines the goals of the wastewater service. The WWMP can be found in Appendix A to this report.

The WWMP adheres to the Financial Principles of *Design Regina: The Official Community Plan Bylaw No. 2013-48* (OCP) related to the benefits model by ensuring that the costs of the wastewater service are paid through user fees by customers who directly benefit from the service.

Investments in utility services are based on providing the greatest benefits to stakeholders within four investment drivers:

- 1) Maintaining Levels of Service (LOS)
- 2) New Regulations and Improved Environmental Protection
- 3) Enhancing LOS
- 4) Growth

The WWMP groups its 13 goals within seven service categories, including:

- 1) Reliable Service
- 2) Regulatory Compliance
- 3) Environmental Stewardship
- 4) Service Delivery Support
- 5) Customer Service
- 6) Servicing Development
- 7) Financial Sustainability

The WWMP, through implementation, will provide a wastewater service that will maintain or improve LOS, reduce risk and vulnerabilities and accommodate growth. The WWMP is not a commitment for future investment but will help inform decisions made by Administration and Council, especially during rate reviews, annual business planning and budget processes.

BACKGROUND

Reliable wastewater service is vital to the health and safety of residents. The City of Regina (City) collects and treats wastewater from customers before safely releasing it into the environment. The City is committed to planning a sustainable wastewater service that supports growth and addresses challenges related to climate change, environmental conditions, aging and deteriorating infrastructure and funding constraints. The WWMP is an overall assessment of Regina's wastewater service and system.

The City defines a master plan as a long-term plan of up to 25 years that describes city-wide outcomes for a service or group of services and should have a strong link to the OCP. The WWMP describes the growth and renewal plans for infrastructure that support wastewater service delivery to maintain or improve LOS while minimizing risk. It considers the regulatory, social, economic and environmental outcomes expected of the wastewater service in evaluating problems and opportunities and proposing investment in the wastewater system. It is not a commitment for future investment but will help inform decisions made by Administration and Council, especially during rate reviews, annual business planning and budget processes.

The WWMP is a comprehensive wastewater service planning document to guide the way the City plans, constructs, operates and maintains the wastewater system based on an understanding of current conditions and future demands.

The City plays a key role in achieving the OCP goals by providing wastewater service to more than 220,000 customers in and around Regina through a diverse system of assets. Assets that support this service delivery include:

- Wastewater Treatment Plant (WWTP)
- McCarthy Boulevard Pump Station (MBPS)
- Hauled Wastewater Station (HWS)
- Nineteen lift stations
- More than 900 km of pipes and 600 km of building service connections
- More than 10,200 manholes
- Thirty-four valves

The City provides wastewater service as a public utility service in accordance with *Section 17 of The Cities Act*. The City established the Water and Sewer Utility (the Utility) to fund capital and operating requirements that support delivery of water, wastewater and stormwater services to Regina residents. *Section 22.4 of The Cities Regulations* requires Council to adopt a capital investment strategy that includes the method used for determining capital plans respecting the waterworks. The capital requirements (investment strategy) are determined based on studies and

assessments, including the WWMP, that consider the infrastructure needs of the Utility required to deliver wastewater service and meet the service goals.

DISCUSSION

The WWMP adheres to the Financial Principles of the OCP related to the benefits model by ensuring that the costs of the wastewater service are paid through user fees by customers who directly benefit from the service.

The WWMP is primarily made up of the following sections:

- Current Reality
- Future Vision
- Implementation Plan

Current Reality

The wastewater service is vital to the health and well-being of residents, as well as for institutional, commercial and industrial use. The current state of system assets (pipes, pumps, etc.) has been described in terms of the LOS they provide and risks at both the strategic and asset level. It has been found that the service is typically meeting the LOS. However, increased investments need to be made to meet the City's commitment to the Water Security Agency. Further analyses, planning, monitoring and ongoing commitment can allow for a robust wastewater system that meets the needs of customers.

The Utility plans for current and future requirements over a 25-year horizon using an investment planning approach to define the right level of investment to deliver sustainable services while maintaining long-term financial viability. Investments in Utility services are made based on providing the greatest benefits to stakeholders within four investment drivers as follows:

- 1) Maintaining LOS** – Reduce risk to maintain current LOS to customers. This takes a risk-based approach to asset failure and considers the life cycle of assets. (e.g. relining large diameter wastewater mains to reduce the risk of wastewater main failure and interruption of service to residents).
- 2) New Regulations and Improved Environmental Protection** – Increased demand to comply with new regulatory requirements or higher level of environmental protection. This considers whether the project is intended to deliver improved environmental stewardship in terms of sustainable reductions on day-to-day environmental impacts regarding air, land, water, waste etc. (e.g. adding additional pumping capacity to reduce the risk of wastewater bypass to the environment during a major storm event).
- 3) Enhancing LOS** – Increased demand due to a permanent improvement in the LOS to customers. This considers the delivery of sustained and tangible improvement to the LOS, improving resiliency, or improving staff working environment. (e.g. reducing the risk of sewer backups by installing larger underground pipes and/or reducing inflow and infiltration into the wastewater system).

- 4) **Growth** – Increased demand due to increased population. This considers increasing capacity to accommodate projected growth and future demands (e.g. upsizing pump stations or adding additional underground pipes to accommodate more wastewater from an increased population).

Currently, most investments are directed towards maintaining LOS, while still investing to improve environmental protection, enhancing LOS and supporting growth. In 2019, of the \$18.8 million capital funding invested in the Wastewater Service, \$10.5 million went towards maintaining LOS. This demonstrates that commitments to reduce risk and move towards a reliable service that meets current regulatory, safety and service objectives are paramount.

Future Vision for Wastewater Service

The City aims to provide utility services to the community that are sustainable. The WWMP sets out actions and a 25-year capital upgrade plan to meet LOS that reflect regulatory, operational and economic outcomes, reduce risk and accommodate growth to achieve the vision of the OCP.

The Wastewater Service Categories, as described below, along with the Guiding Principles and the concept of integrated water resource planning, reflect the vision for Regina's wastewater service delivery and system.

Goals

Wastewater service goals are set out in seven service categories that reflect the regulatory, social, economic and environmental for sustainable wastewater service delivery. Each category includes an example of an action that supports the goals of that category. A detailed action plan is provided in the WWMP.

- **Reliable Service** aims to provide ongoing reliable service of a suitable quality and capacity.

Goal 1: Collect and deliver residential, commercial and industrial wastewater with minimal public impact.

A specific action to achieve this goal is to maintain investment in wastewater infrastructure renewal including more cleaning, inspecting and relining or replacement of wastewater pipes.

- **Regulatory Compliance** serves to protect customer interests by meeting or exceeding our regulatory obligations.

Goal 2: Collect and deliver wastewater for treatment in compliance with the operating permit.

Goal 3: Treat wastewater to a standard that meets the requirements of the operating permit.

A specific example to achieve these goals will be the implementation of the Wastewater Capacity Upgrade Project – South Trunk to reduce the risk of wastewater bypasses to Wascana Creek.

- **Environmental Stewardship** is about acting in the best interest of our customers and the environment.

Goal 4: Ensure that constituents (byproducts such as biosolids/effluent water/biogas) that are removed from the wastewater are treated and disposed of in an appropriate manner.

Goal 5: Minimize the discharge of industrial pollution and hazardous waste to the sewer system.

Goal 6: Enhance wastewater efficiency.

Goal 7: Support environmental conservation and sustainable wastewater management.

A specific example to achieve these goals will be to continue to develop and implement the source control program and the Wastewater and Storm Water Bylaw (*Bylaw No. 2016-24*) and ensure compliance by users.

- **Service Delivery Support** focuses on providing a prompt response to customer service appointments while minimizing the length of any service disruptions.

Goal 8: Be responsive to service requests.

Goal 9: Minimize length of service disruption.

A specific example to achieve these goals will be to review our operational procedure and reporting process for service disruptions to demonstrate responsiveness to interruptions.

- **Customer Service** fosters communication to customer inquiries and collecting on utility billings in an efficient, accurate and timely manner.

Goal 10: Be responsive to customer inquiries and needs.

Goal 11: Produce and collect on utility billings in an efficient, accurate and timely manner.

A specific action to achieve these goals will be to continue to implement upgrades to customer information systems used for billing and inquiries.

- **Servicing Development** focuses on providing access to service when and where it is needed.

Goal 12: Accommodate growth and redevelopment within planning policy by providing wastewater service.

A specific example to achieve this goal will be the implementation of the Creeks Wastewater Pump Station Expansion Project, which will include additional storage for wet weather flows.

- **Financial Sustainability** aims to recover the full cost of service delivery.

Goal 13: Ensure wastewater service is financially sustainable.

A specific example to achieve this goal will be to continue the annual review and update of the Utility Capital Investment Plan and process, including improvements from other action items, to reflect better information or changing conditions and ensure the full costs of wastewater service are identified and considered.

Each goal has a rationale and several identified policies and actions that will assist the Administration in tracking, measuring and achieving the outlined goals. The attached WWMP outlines in detail each rationale, policy and action. The Service Categories identified for the wastewater service align with the direction of the OCP, support the Community Priorities and move toward sustainable wastewater service delivery. Collectively, the Service Categories and associated LOS, along with the cost of managing wastewater assets to deliver service, enable the assessment of the sustainability of Regina's wastewater service.

Implementation Plan

The WWMP goals are intended to be realized over the next 25 years through staged implementation of the policies and actions outlined in the WWMP. Several factors will influence the implementation of planned actions and capital investments, including:

- Changing operating conditions
- Financial capacity
- Pace of growth

The wastewater system exists to provide wastewater service to customers. Initiatives that support maintaining current LOS include ongoing operating and infrastructure renewal work. Initiatives that address future wastewater demand include system infrastructure upgrades to support growth, new regulatory requirements, greater environmental protection and improved LOS.

Most operational activities will be maintained at current levels in the short term but may be refined as a result of continuous improvement efforts. The attached WWMP document provides the full proposed five-year wastewater capital plan.

The WWMP sets out the goals and capital investment needed to meet LOS that reflect regulatory, operational and economic outcomes, reduce risk and accommodate growth to achieve the vision of the OCP. Financing scenarios with a mix of rate increases and debt were evaluated with the Utility Model to assess financial sustainability in line with the WWMP goals and principles. Financial analysis of the proposed 25-year wastewater capital plan using the Utility Model indicates that low to moderate rate increases along with some debt issuance will be needed to fund the plan. In general, operating expenditures are expected to increase, primarily due to new infrastructure added to the system.

RECOMMENDATION IMPLICATIONS

Financial Implications

The budget requirements from the WWMP are included in the long-term 25-year Utility Model and will be reflected in future budget requests. The five-year capital plan is also included in the attached WWMP for review.

Environmental Implications

There are no direct environmental implications with this report.

Policy and/or Strategic Implications

The WWMP sets out the long-term plans and strategies for providing wastewater service and contributes strongly to following OCP Policy Goals:

- Section B: Financial Policies: Goal 1 – Financial Principles: Use a consistent approach to funding the operation of the City of Regina.

- Section B: Financial Policies: Goal 2 – Sustainable Services and Amenities: Ensure that City of Regina services and amenities are financially sustainable.

- Section B: Financial Policies: Goal 3 - Financial Planning: Ensure the sustainability of the City by understanding and planning for the full cost of capital investments, programs and services in advance of development approval and capital procurement.

- Section C: Growth Plan: Goal 2 – Efficient Servicing: Maximize the efficient use of existing and new infrastructure.

- Section D2: Environment: Goal 3 – Water Protection: Maintain the integrity of Regina’s aquifers, surface and groundwater resources.

- Section D4: Infrastructure: Goal 1 – Safe and Efficient Infrastructure: Meet regulatory requirement and industry best practices for design, construction and operation of infrastructure.

- Section D4: Infrastructure: Goal 2 – Asset Management and Service Levels: Ensure infrastructure decisions result in long-term sustainability.

- Section D4: Infrastructure: Goal 3 – Planned Infrastructure for Growth: The infrastructure needed for growth will be planned from a long-term perspective.
- Section D4: Infrastructure: Goal 4 – Conservation and Environment: Design infrastructure that conserves resources and minimizes impacts on the environment.

Other Implications

None with respect to this report.

Accessibility Implications

None with respect to this report.

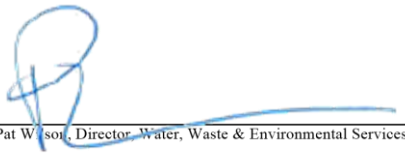
COMMUNICATIONS

The Water Security Agency (WSA), the provincial water regulator, was consulted and engaged in the development of the WWMP and the review of the recommended plan. The Regina and Region Homebuilders' Association (RRHBA) was also provided a presentation of the WWMP process and recommended capital plan.

DELEGATED AUTHORITY

The recommendations contained in this report require City Council approval.

Respectfully submitted,



Pat Wilson, Director, Water, Waste & Environmental Services

Respectfully submitted,



Kim Onra, Executive Director, Citizen Services