

October 11, 2018

To: Members
Public Works and Infrastructure Committee

Re: Water Master Plan

RECOMMENDATION

1. That City Council approve the Water Master Plan (WMP) and authorize the use of the WMP as a guide for future water-related decisions and actions.
2. That Administration provide a progress report regarding implementation of the WMP to the Public Works and Infrastructure Committee in 2021.
3. That this report be forwarded to the October 29, 2018 meeting of City Council for approval.

CONCLUSION

This report provides an overview of the WMP and outlines the goals of the water service. The WMP can be found in Appendix A to this report.

The WMP 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 water service are paid through user fees by customers who directly benefit from the service.

Investments in utility services are made on the basis of 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 WMP groups its 11 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 WMP, through implementation, will provide a water service that will maintain or improve LOS, reduce risk and vulnerabilities, and accommodate growth. The WMP 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

Clean and safe water is essential to the health and well-being of the community. The City of Regina (City) is committed to providing potable water to customers and planning for a sustainable water service that supports growth and addresses challenges related to climate change, environmental conditions, deteriorating infrastructure and funding constraints. The WMP is an overall assessment of Regina's water service and system.

The City defines a master plan as a long-term plan of up to 25 years that describes citywide outcomes for a service or group of services and should have a strong link to the OCP. The WMP describes the growth and renewal plans for infrastructure that support water service delivery to maintain or improve LOS while minimizing risk. It considers the regulatory, social, economic and environmental outcomes expected of the water service in evaluating problems and opportunities and proposing investment in the water 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 WMP is a comprehensive water service planning document to guide the way the City plans, constructs, operates and maintains the water system based on an understanding of current conditions and future demands.

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

- Buffalo Pound Lake (provincial asset)
- Buffalo Pound Water Treatment Plant (BPWTP; managed by BPWTP Corporation)
- Five water storage reservoirs
- Three water pump stations
- More than 1,700 km of water pipes and building service connections
- More than 5700 hydrants
- Nearly 73,000 water meters
- Eight groundwater wells

The City provides water 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 WMP, that take into account the infrastructure needs of the Utility required to deliver water service and meet the service goals.

DISCUSSION

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

The WMP is primarily made up of the following sections:

- Current Reality
- Future Vision
- Implementation Plan

Current Reality

The water service is vital to the health and well-being of residents, as well as for irrigation, 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 generally meeting LOS, but still has room to improve. Further analyses, planning, monitoring and ongoing commitment can allow for a robust water 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 on the basis of 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. replacing a small diameter watermain to reduce watermain breaks).
- 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 in terms of air, land, water, waste etc. (e.g. adding a chlorine booster station to treat well water during water shortage events).
- 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. adding additional water wells to improve resiliency during water shortage events).
- 4) **Growth** – Increased demand due to increased population. This considers increasing capacity to accommodate projected growth and future demands (e.g. Eastern Pressure

solution to add an additional pump station, reservoir and pipes to support new growth areas).

Currently, the majority of investments are directed towards maintaining LOS, with relatively smaller investments going towards improving environmental protection, enhancing LOS and supporting growth. In 2018, of the \$25 million capital funding invested in the Water Service, \$21.5 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 is paramount.

Future Vision for Water Service

The City aims to provide utility services to the community that are sustainable. The WMP sets out the actions and 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 Water Service Categories, as described below, along with the Guiding Principles, reflect the vision for Regina's water service delivery and system.

Goals

Water service goals are set out in seven service categories that reflect the regulatory, social, economic and environmental for sustainable water 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 WMP.

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

Goal 1: Provide water at adequate pressure and in sufficient quality and quantity to satisfy the requirements for domestic and commercial use and for fire protection.

Goal 2: Ensure water will be available with only minimal local disruptions for system maintenance and rare large-scale disruptions due to unforeseen catastrophe.

A specific action to achieve these goals is to increase investment in water infrastructure renewal. This includes more condition assessment of large diameter watermains and more small diameter watermains being replaced or rehabilitated.

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

Goal 3: Provide water that meets Provincial water quality standards and objectives.

A specific example to achieve this goal will be the implementation of chlorine stations for emergency well water usage.

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

Goal 4: Enhance water efficiency.

Goal 5: Support environmental conservation and sustainable water management.

A specific example to achieve these goals will be a water audit to quantify non-revenue water and determine actions to improve water efficiency.

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

Goal 6: Be responsive to service requests.

Goal 7: 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 and enable comparison to other similar Cities.

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

Goal 8: Be responsive to customer inquiries and needs.

Goal 9: Produce and collect on utility billings in an efficient, accurate and timely manner.

A specific example to achieve these goals will be to evaluate and implement the Water Meter replacement project, which includes evaluating the benefits of implementing Advanced Metering Infrastructure.

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

Goal 10: Accommodate growth and redevelopment within planning policy by providing water service.

A specific example to achieve this goals will be the implementation of the Eastern Pressure Solution Project, which will include a new pump station, reservoir and large diameter pipes.

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

Goal 11: Ensure water 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 water service are identified and considered.

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

Implementation Plan

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

- Changing operating conditions
- Financial capacity
- Pace of growth

The water system exists to deliver water service to customers. Initiatives that support maintaining current LOS include ongoing operating and infrastructure renewal work. Initiatives that address future water 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 WMP document provides the full proposed five-year water capital plan.

The WMP 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 WMP goals and principles. Financial analysis of the proposed 25-year water 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 WMP 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 WMP for review.

Environmental Implications

There are no direct environmental implications with this report.

Policy and/or Strategic Implications

The WMP sets out the long-term plans and strategies for providing water service and contributes strongly to the 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.*

1.1 Allocate the cost of delivering programs and services based on the following principals, which shall be referred to as the benefits model:

1.1.2 Where the benefits of a program or service are directly attributable to specific beneficiaries, the costs are to be paid through user fees or other similar charges.

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

1.3 Optimize the use of existing services/amenities:

1.3.1 Establish an asset management framework and program;

1.3.2 Provide affordable and cost-effective services and amenities in accordance with available financial resources and capabilities; and

1.3.3 Require that new development meets City standards for infrastructure servicing and require the development proponent to provide any upgrades necessary as a result of the new development.

1.4 Develop infrastructure in accordance with the phasing and financing policies adopted in Section E, Goal 5 of this Bylaw and Map 1b – Phasing of New Neighbourhoods and New Mixed-Use Neighbourhoods.

1.5 Provide infrastructure that meets expected growth and service levels, in accordance with financial resources and capabilities.

- *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.*

1.6 Make decisions on capital investment based on an understanding of the strategic priorities of the City and overall fiscal limitations.

1.7 Align capital development plans with the policies of this Plan:

1.7.1 Coordinate capital plans with phasing of growth and development in accordance with the phasing and financing policies adopted in Section E, Goal 5

of this Bylaw and Map 1b – Phasing New Neighbourhoods and New Mixed-Use Neighbourhoods;

1.7.2 Update capital plans annually to account for changes in the timing and location of development;

1.7.3 Identify and evaluate each capital project in terms of the following, including but not limited to:

- Costs;*
- Timing and phasing in accordance with the phasing and financing policies adopted in Section E, Goal 5 of this Bylaw and Map 1b – Phasing of New Neighbourhoods and New Mixed-Use Neighbourhoods;*
- Funding sources;*
- Growth-related components;*
- Required financing and debt servicing costs;*
- Long-term costs, including operations, maintenance and asset rehabilitation costs;*
- Capacity to deliver; and*
- Alternative service delivery and procurement options.*

1.7.4 Identify a range of applicable funding sources over the lifecycle of an asset.

1.8 Consider the following prioritization in developing capital investment plans:

1.8.1 Support INTENSIFICATION AREAS;

1.8.2 Completing BUILT OR APPROVED NEIGHBOURHOODS; and

1.8.3 Developing NEW NEIGHBOURHOODS.

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

1.4 Make use of residual capacity of infrastructure in existing urban areas.

2.6 Phase and stage development in accordance with the phasing and financing policies adopted in Section E, Goal 5 of this Bylaw and Map 1b – Phasing of New Neighbourhoods and New Mixed-Use Neighbourhoods.

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

4.8 Develop strategies to protect the quality and quantity of surface and ground water resources from contamination and impacts.

4.9 Work with stakeholders to establish an AQUIFIER management framework that protects AQUIFIER water quality.

4.11 Work with the province and other stakeholders to develop and update an inventory and assessment of the status of surface water and watersheds.

4.12 Implement an integrated watershed planning approach to deal effectively with relationships between land use, water quality management, and water supplies.

4.13 Work with stakeholders to protect the City of Regina's primary and secondary water sources to ensure they are not compromised by new development or other impacts.

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

6.1 Design, construct and operate infrastructure to comply with relevant legislative and regulatory requirements.

6.2 Ensure new and reconstructed infrastructure follows industry best practices and overall City standards for design and construction.

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

6.3 Prepare and implement an asset management strategy for infrastructure to:

6.3.1 Guide City planning and operations;

6.3.2 Establish a service framework and LOS for existing and new assets; and

6.3.3 Focus resources for managing and investing in infrastructure.

6.4 Adopt a continuous improvement framework to address the current infrastructure gap and ensure that future requirements for infrastructure are aligned with the priorities, goals and policies of this Plan.

6.5 Determine requirements to upgrade and finance existing infrastructure to service new developments at defined service levels.

- *Section D4: Infrastructure: Goal 3 – Planned Infrastructure for Growth: The infrastructure needed for growth will be planned from a long-term perspective.*

6.6 Develop infrastructure plans that will:

6.6.1 Address both short- and long-term growth requirements;

6.6.2 Manage the impacts of new development on system-wide services;

6.6.3 Optimize use of existing infrastructure to minimize financial and environmental impacts of growth; and

6.6.4 Align the approval process for capital funding with requests for ongoing operating funding.

6.8 Assess infrastructure requirements prior to reconstruction to ensure that the design accommodates future growth, where feasible.

- *Section D4: Infrastructure: Goal 4 – Conservation and Environment: Design infrastructure that conserves resources and minimizes impacts on the environment.*

6.10 Monitor the demand for City Water and develop environmental conversation strategies.

Other Implications

None with respect to this report.

Accessibility Implications

None with respect to this report.

COMMUNICATIONS

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

DELEGATED AUTHORITY

The recommendations contained in this report require City Council approval.

Respectfully submitted,

A handwritten signature in blue ink, appearing to be 'Pat Wilson', with a long horizontal stroke extending to the right.

Pat Wilson, Director
Water Works

Respectfully submitted,

A handwritten signature in blue ink, appearing to be 'Karen Gasmo', written in a cursive style.

Karen Gasmo, Executive Director
Transportation & Utilities

Report prepared by:
Water and Sewer Engineering