

► WASTEWATER UTILITY

LED BY: GENERAL MANAGER, INFRASTRUCTURE

Our goal & community benefit:

Protect Okanagan Lake, human health and our environment through efficient collection and effective treatment of wastewater. Without treatment, we expose Okanagan Lake to unnatural levels of nutrients and toxins, threatening public health, wildlife habitats, fisheries, tourism and recreation.

Our customers:

- All citizens, businesses and visitors to Kelowna
 - Residential
 - Commercial (e.g., restaurants, hotels)
 - Industrial (e.g., breweries, wineries, food producers)
 - Institutional (e.g., hospitals, schools)

Our partners:

- Surrounding communities, including First Nations.
- Research from the University of British Columbia, consultants, and the National Benchmarking Initiative.
- Government agencies include Environment Canada, BC Centre for Disease Control, City of Vernon, and the Province.
- Biosolids customers, including the OgoGrow Composting Facility and the Ingerbelle Compost Facility.

What we deliver:

- The City collects, on average, 37 million litres of water per day (ML/d), and routes it through over 650 km of buried mains by gravity and 44 sanitary lift stations to the wastewater treatment plant.
- We operate a wastewater treatment facility that filters, removes nutrients and disinfects the finished product into a final high-quality effluent. The effluent is used for irrigation or immediate safe release to Okanagan Lake.
- Many of major components in the wastewater system are resilient to climate change and have redundancy in their backup processes that allow for quick repair while maintaining full time operation.
- We have highly trained professional staff to reliably service the needs of a growing City 24 hours a day and 365 days per year.
- We deliver competitive rates to other communities in the country.

Our key objectives:

- Collecting wastewater from all urbanized areas of the city and route it safely to the wastewater treatment facility.
- Effectively filter, treat and disinfect all wastewater to protect public health, the environment and Okanagan Lake.
- Assure that policies are consistent across the valley to prevent discharge of sanitary wastewater to Okanagan Lake.
- Sustain investment, resources and trained professional staff to service the needs of a growing City reliably for 24 hours a day and 365 days per year.
- Rates that reflect these objectives, a reasonable Level of Service, and that are competitive with other communities.

Our guiding plans:

- Kelowna's Water Security & Responsibility Plan (draft)
- 20-year servicing plan
- 10 Year Capital Plan
- 2040 Official Community Plan

Measuring performance:

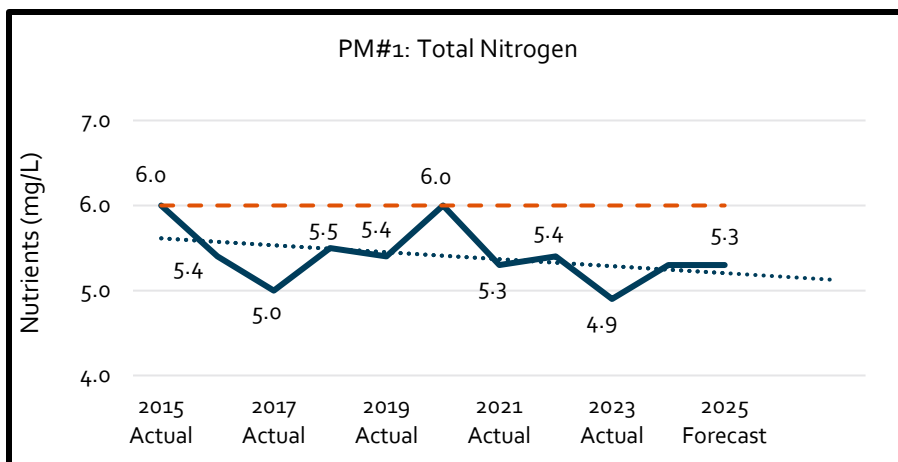
Treatment Capacity and Effectiveness

The City of Kelowna's wastewater treatment process effectively removes or reduces nutrients, toxins, soaps and other sanitary elements from being introduced to Okanagan Lake. Two of the more important elements we measure in our treated effluent are Nitrogen and Phosphorus. While nitrogen and phosphorus levels in Okanagan Lake are naturally low, higher nutrient levels in areas of the lake are the result of untreated wastewater and agricultural runoff. Extreme levels can lead to increased risk of algal blooms and lower oxygen levels for fish and plants, resulting in poor quality water for drinking water and recreation. Effective wastewater treatment reduces these risks.

Performance Measure 1

Wastewater Treatment Total Nitrogen Annual Average

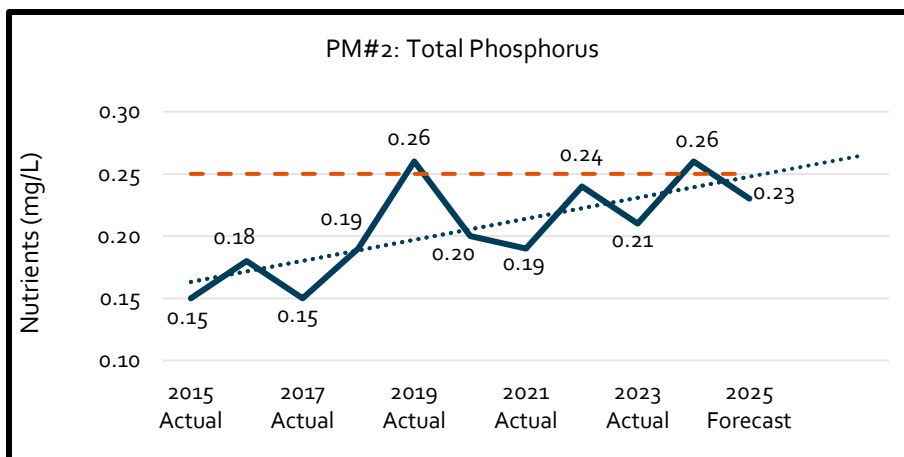
This measure is the annual total nitrogen discharge to Okanagan Lake from the wastewater treatment facility. The annual average permit limit is 6.0 mg/l as regulated by the Ministry of Environment and Climate Change. Continued limit exceedances will require process changes or upgrades at the plant.



Performance Measure 2

Wastewater Treatment Total Phosphorus Annual Average

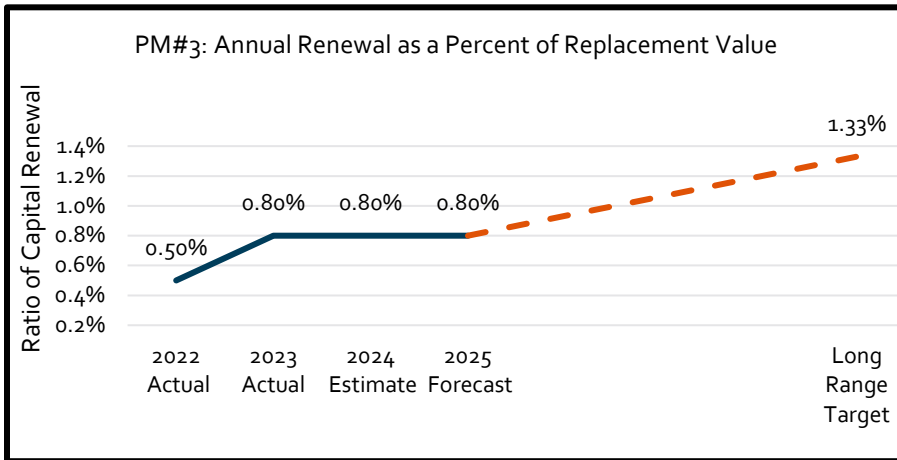
This measure is the annual total phosphorus discharge to Okanagan Lake from the wastewater treatment facility. The annual average permit limit is 0.25 mg/l as regulated by the Ministry of Environment and Climate Change. Continued limit exceedances will require process changes or upgrades at the plant.



Performance Measure 3

Wastewater Utility is Sustainably Funded

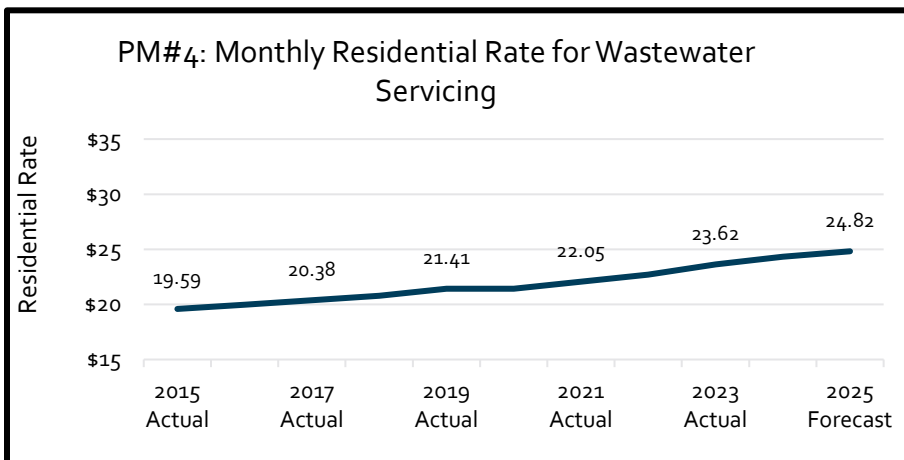
Identifies the ratio of capital reinvestment (renewal) divided by the current year estimated replacement value of infrastructure. Measure is in per cent. 0.8% implies renewal rate would take 125 years to renew existing infrastructure. The long run target should range from 1.2% to 1.5% (67 to 83 year average infrastructure life). The current renewal rate is adequate given the relatively young age of the assets, but renewal will need to increase in the longer term as the system ages.



Performance Measure 4

Residential rates are competitive

Residential rates are competitive with other communities. Kelowna has one of the lowest wastewater rates within the valley.



2025 Activities by priority:

Crime & Safety

- Increased security measures at utility infrastructure to protect citizens utility investment.

Affordable Housing

- Efficient and affordable wastewater service contributes to overall housing affordability.

Climate & Environment

- Ongoing involvement with Provincial and Federal bodies, gathering and evaluating data for facility effluent and its effects on public health and the environment.
- Continued teamwork with other Municipalities reviewing facility operations and discussing optimization of similar facilities.

Our People

- Every 3 years there is a confidential online employee engagement survey which is the first step in creating and fostering a workplace that offers purpose and inspires staff to achieve their best.
- Utility leaders actively pursue and support staff training and development.
- Ensure that all certified staff receive adequate training to maintain Provincial required certifications.

Digital Transformation

- The team continues working towards the creation of online forms and data sheets which will streamline data entry and allow for easier information transfer for operational optimization.
- Working with other groups within the city the utility is supporting development of a central data warehouse which will allow users to have easier access to data for operations, modeling, and development. This project is slated for completion late 2024. 2025 will see early implementation.
- Cityworks information is being used to create dashboards, these dashboard will eliminate repetitive and redundant work while supplying needed information across the organization.

Active Financial Management

- Continued work on alignment of utility operational budgets between different utility work groups allowing for a clearer view of operational spending and increased transparency for financial reporting.
- Work continues on the development of dashboards linking operational and financial information to provide easy one stop for utility updates and information.
- Continue to improve use of benchmarking for effective operations through ongoing participation in the Canadian Infrastructure Benchmarking Initiative

Base Business

- Efficient, effective wastewater collection and treatment, protecting the public health and the environment and increasing effluent reuse.
- Continue with effective renewal of end-of-life infrastructure

2024 Key accomplishments:

- Continued community outreach and educational opportunities to inform customers about wastewater collection and treatment and the direct impact actions have on the utility, public health, and the environment
- Operational projects will be completed or are on track for completion
- Environmental Operator Certified staff met all their continuing education required for Provincial Certification
- Added new collection mains and sewer connections for 31 residences previously on septic treatment in the Rio Drive/Terrace Drive area.
- Completed the Burtch transmission relining project, the complete re-lining of 2.7 km of failing concrete sewer main from Enterprise to Byrns Road.
- Allowed discharge of treated effluent from the District of Lake Country in the Jim Bailey Industrial Area.
- Addressed urgent need to provide interim effluent disposal from an agricultural processor in the RDCO service area to support local agriculture.

Continuous improvements:

- Utility staff are continually increasing levels of knowledge and using outreach opportunities to help keep them in tune with the latest treatment, collection and disposal of wastewater liquid and solids
- We are future focused and closely monitor our developing community and impacts of climate change and how those can affect the utility
- Increased nutrient loading at the treatment facility is still under review, this situation is not isolated to Kelowna and is being experienced at many other locations. Discussions and further exploration to address this issue are planned for 2025

Operating budget needed to achieve results (\$ thousands):

	Revised 2024	Annualized Budget	Maintaining Service	Enhancing Service	Preliminary 2025
Revenue budget:					
Property tax					
Fees and charges	23,433	—	1,159	—	24,592
Grant	5,012	(4,850)	(49)	3,917	4,030
Other revenue	6,408	(2,972)	681	75	4,193
Transfers from reserve	29,254	(29,185)	4,381	19,656	24,106
Total revenue budget	64,108	(37,007)	6,172	23,648	56,921
Expenditure budget:					
Salaries and wages	6,039	1	257	94	6,390
Material and other	7,946	(643)	189	324	7,763
Contract services	735	(34)	2	—	703
Debt service	1,026	—	(186)	—	840
Capital Expenditure	46,799	(46,799)	4,500	34,289	38,789
Transfers to reserve	742	33	795	(75)	1,508
Enabling allocation	820	—	—	107	927
Total Expenditure budget	64,108	(47,442)	5,557	34,738	56,921

Note: Totals may not add due to rounding

2025 Operating Requests (\$thousands)

Priority 1

Description	2025	2026	2027	2028	2029
Wastewater Collection Operations - Growth	26	26	26	26	26
Wastewater Treatment Planning	325	—	—	—	—
Operating and Maintenance Impacts from Capital Requests	99	189	189	189	189
Operating Requests Priority 1 Total	449	215	215	215	215

2025 Capital Requests (\$thousands)

Priority 1

Description	2025	2026	2027	2028	2029
Programs					
Wastewater Network & Facilities	4,637	5,488	9,950	8,707	8,086
Wastewater Treatment	4,500	4,250	3,000	2,000	2,000
Projects					
Frost Rd Upgrades (w/utilities)	100	—	—	—	—
Hydro-Vac Disposal Facility	250	1,000	1,250	—	—
KLO Bridge Replacement (w/utilities)	800	200	—	—	—
Sewer Connection Areas	6,958	2,981	380	—	—
Wastewater System Upgrades	19,794	11,764	1,600	—	300
WWTF Expansion	500	500	1,000	10,000	10,000
* Wastewater Vacuum Truck and Building	1,250	—	—	—	—
Capital Request Priority 1 Total	38,789	26,183	17,180	20,707	20,386

* denotes capital request has operating & maintenance impacts included in the request

2025 Operating Request Details

Service Area: Wastewater Utility	Priority 1	Enhance
		ON-GOING
Title: Wastewater Collection Operations - Growth		PRELIMINARY

Justification:

The City of Kelowna's Wastewater collection system consists of 44 lift stations and over 650 km of pipes that service approximately 95 per cent of the Kelowna population. As the City grows, additional operation and maintenance budget is requested to maintain this 24 hour/day, 365 days/year service level.

Expected Completion:	December, 2025							
Strategic Direction:	Other							
	Cost	Reserve	Borrow	Grant	Other	Revenue	Utility	Taxation
2025	25,700	—	—	—	—	—	(25,700)	—
2026	25,700	—	—	—	—	—	(25,700)	—
2027	25,700	—	—	—	—	—	(25,700)	—

Service Area: Wastewater Utility	Priority 1	Enhance
		ONE-TIME
Title: Wastewater Treatment Planning		PRELIMINARY

Justification:

Wastewater treatment protects Okanagan Lake and public health by preventing untreated wastewater from contaminating freshwater sources. To ensure the City is ready for future growth, budget is requested to update the Wastewater Master Plan and to complete a facility asset management assessment on the Brandt's Creek Tradewaste Treatment Facility, which is fully recovered by industry partners. These plans will update the sanitary water model, revising population figures, identifying growth areas for the next 20 years, and listing major projects and costs to ensure wastewater continues to meet regulatory standards and minimize impacts to Okanagan Lake.

Expected Completion:	Jun 2026							
Strategic Direction:	Other							
	Cost	Reserve	Borrow	Grant	Other	Revenue	Utility	Taxation
2025	325,000	—	—	—	(75,000)	—	(250,000)	—
2026	—	—	—	—	—	—	—	—
2027	—	—	—	—	—	—	—	—

2025 Capital Request Details

Service Area: Wastewater Utility	Priority 1	Enhance
		ONE-TIME
Title: Wastewater Network & Facilities		PRELIMINARY

Justification:

Budget is requested for this annual program to ensure reliable wastewater service delivery for City customers connected to the sanitary collection system. Annual items for consideration will renew existing mainlines and lift stations.

Expected Completion:	December, 2034						
Strategic Direction:	Other						
	Asset Cost	Reserve	Borrow	Fed/Prov	Dev/Com	Utility	Taxation
2025	4,637,000	(2,930,000)	—	—	—	(1,707,000)	—

Service Area: Wastewater Utility	Priority 1	Maintain
		ONE-TIME
Title: Wastewater Treatment		PRELIMINARY

Justification:

Budget is requested for this annual program to ensure reliable wastewater service delivery for City customers connected to the sanitary collection system. Annual items for consideration will renew existing wastewater treatment assets.

Expected Completion:	December, 2034						
Strategic Direction:	Other						
	Asset Cost	Reserve	Borrow	Fed/Prov	Dev/Com	Utility	Taxation
2025	4,500,000	(4,450,000)	—	—	—	(50,000)	—

2025 Capital Request Details

Service Area: Wastewater Utility	Priority 1	Enhance
		ONE-TIME
Title: Frost Rd Upgrades (w/utilities)		PRELIMINARY

Justification:

Budget is requested to realign a section of existing sanitary sewer currently traversing along private property through a narrow right of way; moving it on to the road alignment of the soon to be completed Frost/Chute Lake Connection. A developer for 5000 Frost Road will also contribute a portion of the cost for the removal of the existing sanitary and its respective alignment that favors the development. This work aligns with other Transportation and Stormwater projects on Frost Road.

Expected Completion:	December, 2025						
Strategic Direction:	Other						
	Asset Cost	Reserve	Borrow	Fed/Prov	Dev/Com	Utility	Taxation
2025	100,000	(100,000)	—	—	—	—	—

Service Area: Wastewater Utility	Priority 1	Enhance
		ONE-TIME
Title: Hydro-Vac Disposal Facility		PRELIMINARY

Justification:

Budget is requested for at least one new hydro-vac disposal facility to replace the existing evaporation pond at City yards. The old ponds are undersized to manage the large volumes of effluent from these large trucks. The City's fleet is growing regularly to meet the increasing importance of these machines to the community. Costs will include equipment and permitting.

Expected Completion:	December, 2027						
Strategic Direction:	Other						
	Asset Cost	Reserve	Borrow	Fed/Prov	Dev/Com	Utility	Taxation
2025	250,000	(250,000)	—	—	—	—	—

2025 Capital Request Details

Service Area: Wastewater Utility	Priority 1	Enhance
		ONE-TIME
Title: KLO Bridge Replacement (w/utilities)		PRELIMINARY

Justification:

Budget is requested for sewer works required to connect the system through the new proposed KLO Bridge at Mission Creek. This will connect the Hall Road connection area by gravity across the bridge.

Expected Completion:	December, 2026						
Strategic Direction:	Other						
	Asset Cost	Reserve	Borrow	Fed/Prov	Dev/Com	Utility	Taxation
2025	800,000	(800,000)	—	—	—	—	—

Service Area: Wastewater Utility	Priority 1	Enhance
		ONE-TIME
Title: Sewer Connection Areas		PRELIMINARY

Justification:

Budget is requested for work on the Belcarra, Central Rutland Sanitary and Chamberlain sewer connection areas. Customers will benefit from a safe, reliable, and environmentally sustainable wastewater collection, treatment and effluent disposal to Okanagan Lake. This work will connect over 550 properties.

Expected Completion:	December, 2026						
Strategic Direction:	Other						
	Asset Cost	Reserve	Borrow	Fed/Prov	Dev/Com	Utility	Taxation
2025	6,958,000	(3,041,000)	—	(3,917,000)	—	—	—

2025 Capital Request Details

Service Area: Wastewater Utility	Priority 1	Enhance
		ONE-TIME
Title: Wastewater System Upgrades		PRELIMINARY

Justification:

Budget is requested for this annual program to ensure reliable wastewater service delivery for City customers connected to the sanitary collection system. Annual items will upgrade existing or install new mainlines and lift stations including projects required to adequately service existing serviced population and projected growth.

Expected Completion:	December, 2027						
Strategic Direction:	Other						
	Asset Cost	Reserve	Borrow	Fed/Prov	Dev/Com	Utility	Taxation
2025	19,794,000	(12,035,000)	—	—	—	(7,759,000)	—

Service Area: Wastewater Utility	Priority 1	Enhance
		ONE-TIME
Title: WWTF Expansion		PRELIMINARY

Justification:

Budget is requested to install an additional treatment train to the existing biological nutrient removal process at the Raymer Wastewater Treatment Facility (WWTF). This expansion is part of the longer term plan to expand the existing site to its ultimate capacity. This additional process needs to address the changing influent loadings due to water conservation from more efficient water fixtures and appliances. The effluent quantity has remained the same for the best part of the last 10 years; however, the loading or concentration of the effluent has increased substantially. The trend suggests that the WWTF will need some help (an additional treatment train) to ensure Regulation is sustainably met in the long term. Preliminary budget estimates including a building expansion to accommodate growing staff.

Expected Completion:	December, 2030						
Strategic Direction:	Other						
	Asset Cost	Reserve	Borrow	Fed/Prov	Dev/Com	Utility	Taxation
2025	500,000	(500,000)	—	—	—	—	—

2025 Capital Request Details

Service Area: Wastewater Utility	Priority 1	Enhance
		ONE-TIME
Title: Wastewater Vacuum Truck and Building		PRELIMINARY

Justification:

Growing and aging Wastewater and Stormwater infrastructure along with supporting other city department critical needs is preventing the Wastewater and Stormwater core work from being completed due to lack of available equipment. Budget is requested to add an additional vacuum truck, an equipment operator crew of two, and the associated costs of building expansion to accommodate the truck. This equipment and crew will allow for current needs of Wastewater and Stormwater to be supported, continue with critical support for other departments and increase resiliency in addressing increase stormwater quality and quantity (flooding) events.

Expected Completion: December, 2025

Strategic Direction: Other

	Asset Cost	Reserve	Borrow	Fed/Prov	Dev/Com	Utility	Taxation
2025	1,250,000	—	—	—	—	(1,250,000)	—

Operating Impacts:

	Cost	Reserve	Borrow	Grant	Other	Revenue	Utility	Taxation
2025	98,700	—	—	—	—	—	(98,700)	—
2026	189,200	—	—	—	—	—	(189,200)	—
2027	189,200	—	—	—	—	—	(189,200)	—