



# **2024 UTILITIES ANNUAL REPORT**

**WATER & WASTEWATER**



# CITY MANAGER MESSAGE

On behalf of the City of Red Deer, I am very pleased to share The City's first Water and Wastewater Annual Report. This report is an important step in modernizing our approach to sharing information with the public, to industry, and to the many Central Alberta municipalities connected to Red Deer's Utilities.

The City of Red Deer's Water Utilities are a vital part of not just Red Deer's lifeline but supports a significant component of Central Alberta as well. The City takes our responsibility seriously and works hard to exceed established regulations in managing the overall water cycle; from The City's raw water intake at the Water Treatment Plant through treatment, distribution, transmission, collection, treatment, and ultimate release back to the river at our Wastewater Treatment plant. We remain committed to providing a safe, secure drinking water supply, maintaining healthy aquatic ecosystems, and providing reliable, quality water supplies.



This annual report highlights The City's key achievements, financial performance, infrastructure improvements, and future goals as we strive to enhance water services for the years ahead. Of critical note are two important influences: the City's investments in our treatment plants, and our gradual recovery from the decisions made while finding our way through a global pandemic. The City has ensured the quality, capacity, and improvements needed to sustain our Central Albertan livelihood and economic opportunities. However, the City did not increase rates for two years in order to minimize the financial impact on everyone in the region. These important decisions have ultimately impacted our reserve balances, and is one of our key priorities moving forward into 2025.

The City is also very committed to evolving our approach in how we connect with and inform those dependent on us for services. We look forward to working closely with the Commissions and communities that we serve in building our shared future together.

**Tara Lodewyk**

City Manager, The City of Red Deer





**1.0**

# WATER UTILITIES SCOPE



# 1.0 WATER UTILITIES SCOPE

This report will outline the City's Water and Wastewater Utilities which are collectively responsible for the planning, design, operation, maintenance and capital project delivery for all water and wastewater services for existing and future customers in the City.

## **The City of Red Deer Regional Water Treatment Plant**

Supplies high quality potable drinking water to the residents of the City of Red Deer, Red Deer County, Town of Blackfalds, City of Lacombe, Lacombe County, Town of Ponoka and Ponoka County. Core functions include operating, maintaining, and monitoring the two Red Deer River Raw Water intakes, the WTP, a Residual Management facility (RMF), five reservoirs, and one pump station. Design Capacity of the Water Treatment System is 120 million litres.

## **The Water Distribution System**

Consists of over 640 km of pipe, four storage / pumping station facilities, one stand-alone reservoir and a stand-alone pumping station. The Utility manages a cross connection program, an Automated Meter Reading program, a Lead Services removal program, and a Main Replacement program. The Distribution Operators maintain 3 PRVs (Pressure Reducing Valve), over 100 air relief valves, 2,500 fire hydrants, over 30,000 residential and over 1,600 industrial, commercial, and institutional (ICI) connections.

## **Regional Wastewater Treatment Plant**

Treats industrial and domestic wastewater originating from the City of Red Deer, Town of Blackfalds, City of Lacombe, Lacombe County, Penhold, Town of Innisfail, Town of Olds, Town of Bowden, Red Deer County, Town of Sylvan Lake the Summer Villages on Sylvan Lake of Norglenwold, Jarvis Bay, Birchcliff and Sunbreaker Cove. Core functions include operating, maintaining and monitoring the City's Wastewater Plant. The operations also handle and organize beneficial biosolids from the treatment process to be applied to agricultural lands around Central Alberta.

## **Wastewater Collection System**

Operates and maintains a system consisting of approximately 514 kilometers of sanitary sewer pipe and 560 kilometers of stormwater sewer pipe, both of which include gravity and force main. WWC also operates and maintains sanitary sewer and stormwater lift stations.

## **Construction and Maintenance**

Provides rehabilitation services for our water, wastewater, and storm drainage systems. This helps to ensure assets are well managed for consistent and sustainable high quality, quantity, and reliability of water and wastewater services with adaptable operations that are fiscally and environmentally responsible for today's customers and future generations.

## **Environmental Planning**

Provides high quality engineering, planning and project management services which support the Water Utilities. The Environmental Planning Section delivers millions of dollars of capital projects and engineering studies to enhance the drinking water and wastewater services in the City of Red Deer's Utilities.



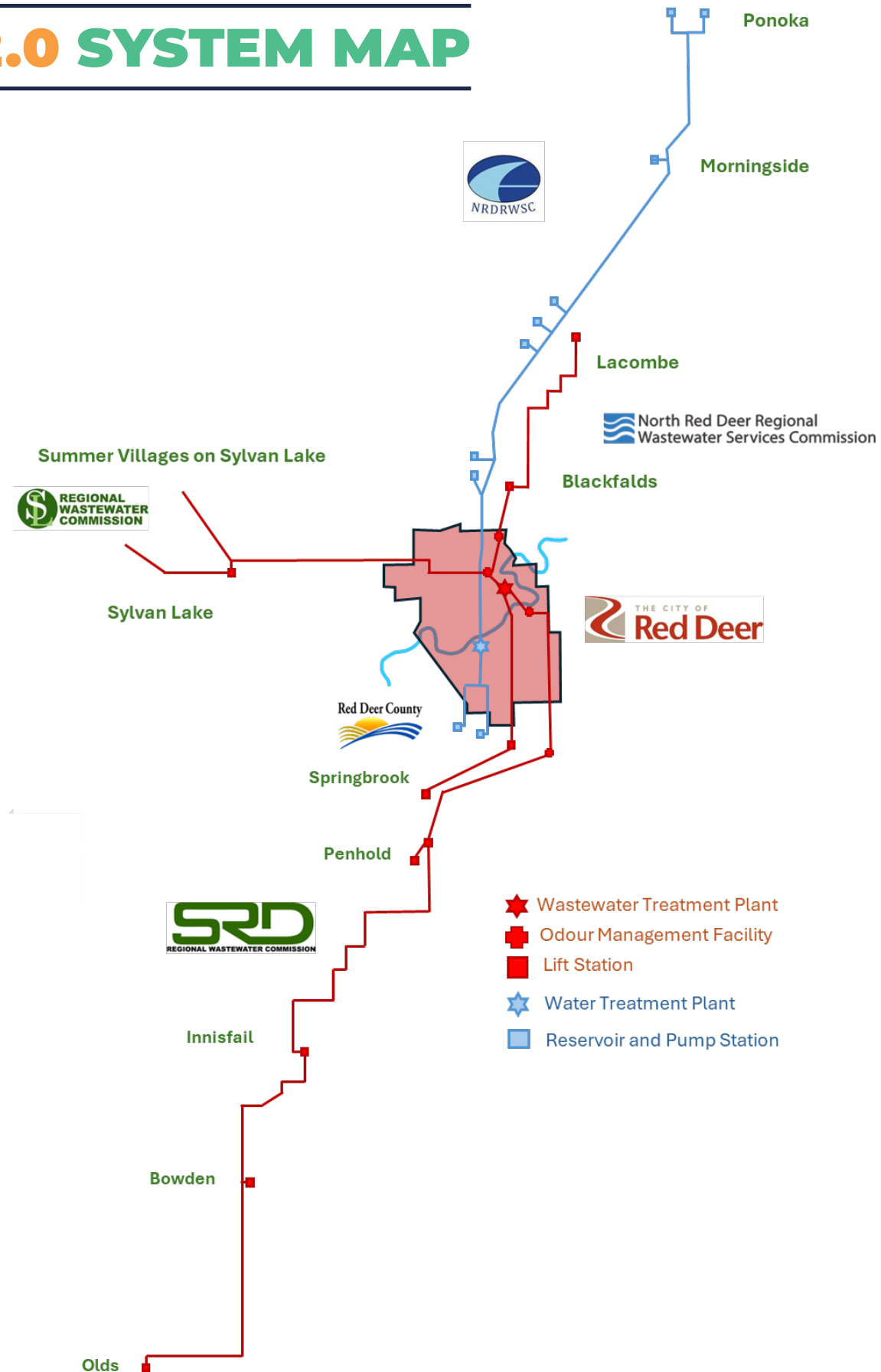


# 2.0

# SYSTEM MAP



# 2.0 SYSTEM MAP







**3.0**

# CAPITAL PROJECTS HIGHLIGHTS

## 3.0 CAPITAL PROJECT HIGHLIGHTS

### COMPLETED

#### Water Treatment Plant

- Water Facility Structural Assessment – structural assessment on the WTP, Low Lift, Glendale, Lancaster, Clearview, and Queens completed.
- Bulk Water Station at Water Treatment Plant
- Liquid Ammonia Sulphate
- Environmental Site Assessment Phase 2 and Risk Assessment on supporting site at the WTP.

#### Wastewater Treatment Plant

- Headworks Roof Replacement – roofing membrane, masonry, and drains were replaced.
- Flood Berm – flood protection of the facility for changing climate events.
- HVAC Replacement – end of life replacement on numerous HVAC units around facility.
- Plant 1/2 Electrical Rehab - replacement of end-of-life electrical infrastructure including switchgear, PFCs, and MCCs.

#### Linear Systems - Wastewater Collections and Water Distribution

- 43 Ave and Ross Street - replacement of water, wastewater, and storm mains in the area around 43 Ave and Ross St.
- 47 Ave - water main replacement between 53 St and 55 St with some associated wastewater and storm main work.
- 49 St – water main replacement and wastewater relining between 48 Ave and 49 Ave.
- Morrisroe Phase 2 - water, wastewater, and storm main replacements in two locations in Morrisroe.
- Riverside Meadows - replacement of water, wastewater, and storm mains throughout Riverside meadows. Current phases complete with the final phase to be completed in 4-5 years.



## ONGOING

### Water Treatment Plant

- MCC Replacement – replace MCC 101/106 and other electrical equipment which is at the end of its service life. Expected completion summer of 2025.
- Low Lift Pump Replacement - Replacement of the low lift pumps, motors, drives and associated piping. Expected completion end of 2026.
- Structural Repairs – Project planning for structural rehabilitation of water facilities to extend building life for 50 years of each facility.
- Large Valve Replacement - Replacement of original isolation valves and actuators that are end of life. On going through 2027.
- Travelling Water Screen Replacement – replacement of screens that are end of life. Expected completion end of 2025.

### Wastewater Treatment Plant

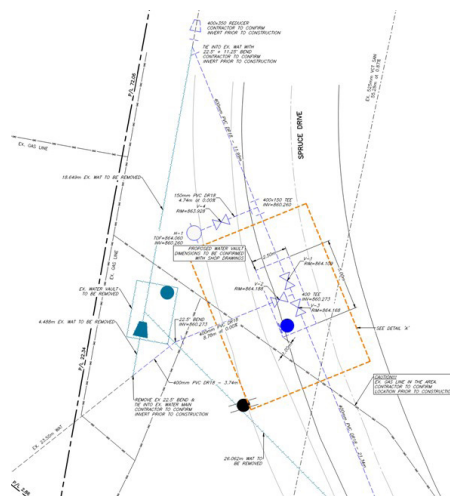
- Lab and Administration Building Expansion - design ongoing for an expansion of the existing building due to growth of plant. Construction expected to start 2026 with completion in 2027.
- Nutrient Management Facility - construction of facility will reduce phosphorous in treated effluent and throughout plant. Expected completion summer of 2025.
- WWTP Plant Security - fencing security upgrades to protect assets at the WWTP to be completed fall of 2025.
- Biosolids Lagoon Liners - design of linear installation expect to be complete fall of 2025, with construction staged over 2026 to 2029.
- HVAC Replacement - replacement of multiple air handling units around the plant. Expected completion in the fall of 2025.

### Engineering Studies

- Wastewater Treatment Plant Master Plan Update for Phase 5 – update of existing master plan to confirm scope for Phase 5 Upgrades of the plant.
- Water Treatment Plant Coagulant Evaluation - study to optimize type and amount of coagulant used at plant for better quality water and efficiency of process.

### Linear Systems - Wastewater Collections and Water Distribution

- Gaetz Utility ROW – replacement of water, wastewater and stormwater mains between Phelan Street and 76 Street. Expected completion fall of 2025.
- Spruce Drive Vault – replacement of existing valve vault due to inability to safely operate valves. Expected completion fall 2025.
- Allsop Avenue – replacement of wastewater and stormwater mains at Allsop Ave and Allan St. Expected completion fall of 2025.
- 51 ST Street Close - replacement of water, wastewater and stormwater mains around 51st Close. Expected completion fall of 2025.
- Cathodic Protection – replacement of cathodic anode beds on water distribution due to end of life. Expected completion summer 2025.



SPRUCE DRIVE VAULT DESIGN – APTUS 2025





**4.0**

# OPERATIONAL HIGHLIGHTS



## 4.0 OPERATIONAL HIGHLIGHTS

This section will outline the operational highlights from 2024 in the Utilities.

### Water Treatment Plant

#### Chemical Management

The Water Treatment process uses various chemicals to treat the water. The cost of these chemicals has increased due to inflation. The three major chemicals are as follows:

#### Aluminum Sulfate

Aluminum sulfate (Alum) is a coagulant that binds small particles in the water together to form bigger particles. This chemical utilizes the most of our budget. Between 2018 and 2023, the price per kilogram increased by nearly 45%.

#### Sodium Hypochlorite

Sodium Hypochlorite (Hypo) is the chlorine disinfection product used to kill bacteria and viruses that may be in the water. The graph shows the usage to be constant with the last year being the lowest. Between 2018 and 2023, the price per kilogram increased by nearly 27%.

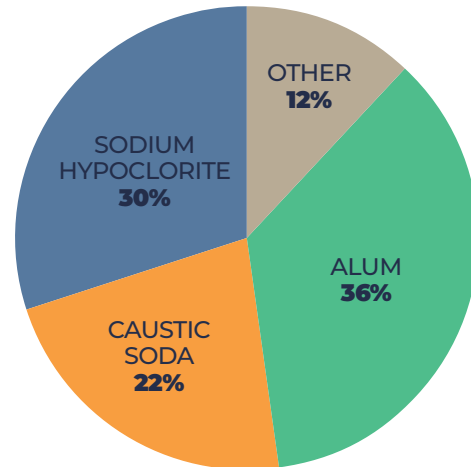
#### Caustic Soda

Caustic Soda (Caustic) is added to adjust the pH to an ideal level for drinking and to help control corrosion in the distribution system. Between 2018 and 2023, the price per kilogram increased by over 46%.

### Chemical Costs per Chemical

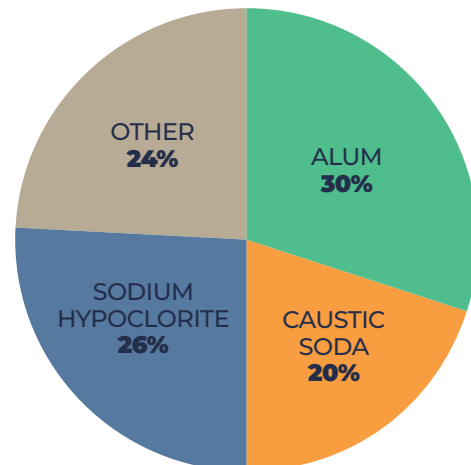
#### 2023 Chemical Cost Percentage

**1.38M** was spent on Chemical Costs in 2023



#### 2024 Chemical Cost Percentage

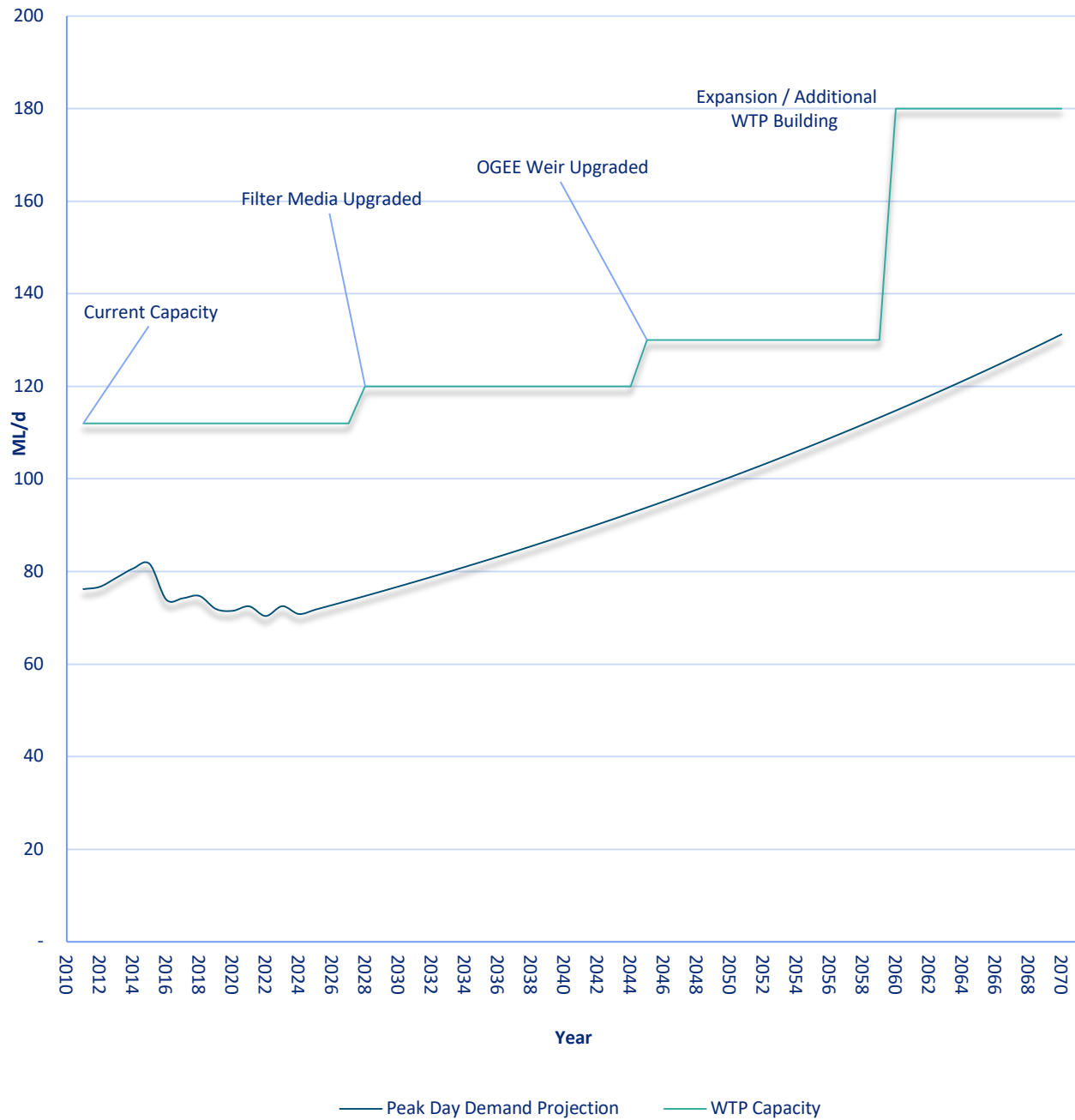
**\$1.67M** was spent on Chemical Costs in 2024



## WTP Plant Capacity

The Water Treatment Plant capacity well above the peak day demand. With a number of projects planned in the next 30 years planned to increase the design capacity.

### City of Red Deer WTP Capacity and Peak Day Demand



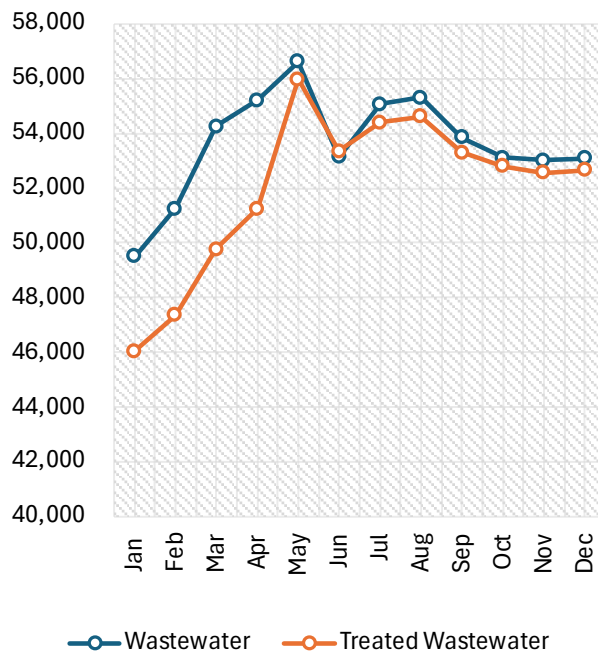


## Wastewater Treatment Plant

### WWTP Operational

Plant continued to meet all approval requirements despite numerous shutdowns to maintain/upgrade electrical equipment and complete the berm project.

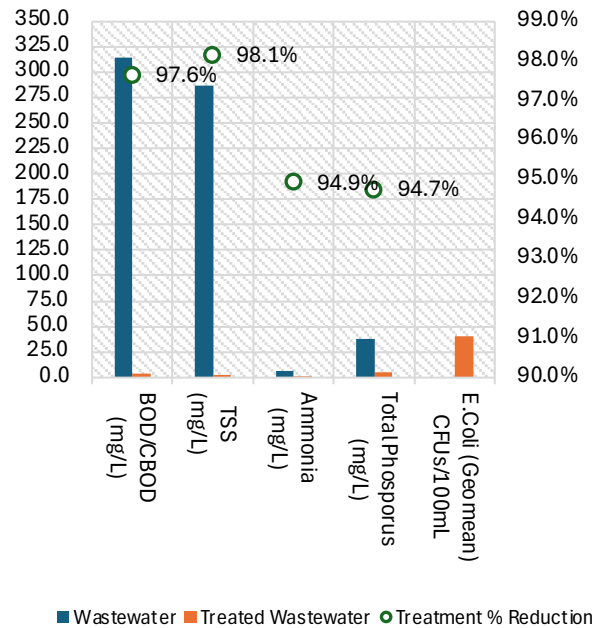
**WWTP Average Daily Flow Rates  
(m3/Day)**



### Laboratory

- Accredited Test Methods: 10
- Unaccredited Test Methods: 15
- Samples Received: 8,535
- Total Tests Performed: 25,833

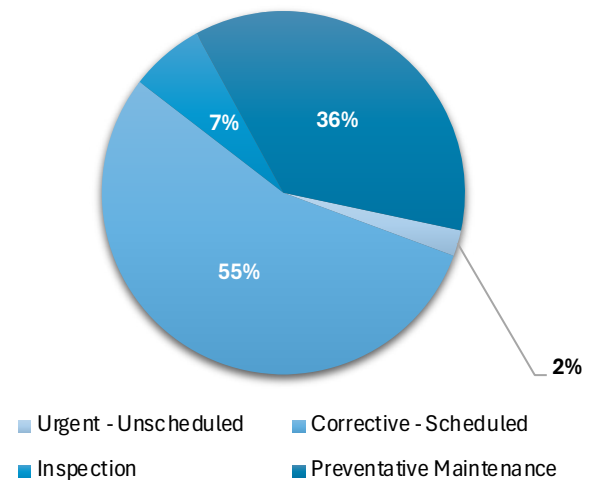
### 2024 WWTP Reductions Across Treatment



### Wastewater Maintenance

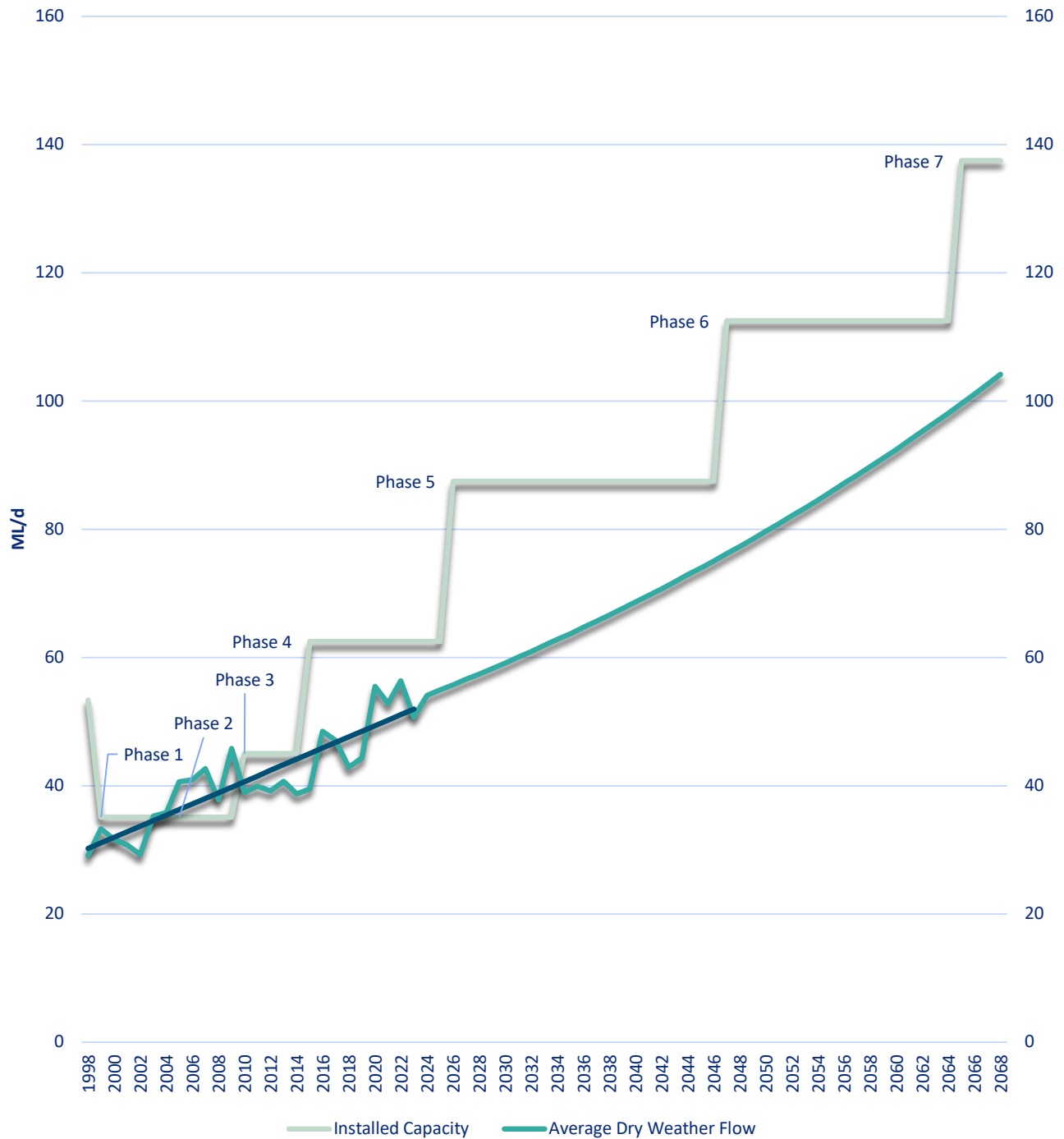
Wastewater Maintenance had a successful year in 2024; 6,759 maintenance hours were expended. There were 0 emergency hours and only 156 hours spent on urgent unscheduled work.

### 2024 Maintenance Hours



## WWTP Plant Capacity

The Wastewater Treatment Plant is currently undergoing an upgrade project to increase capacity.



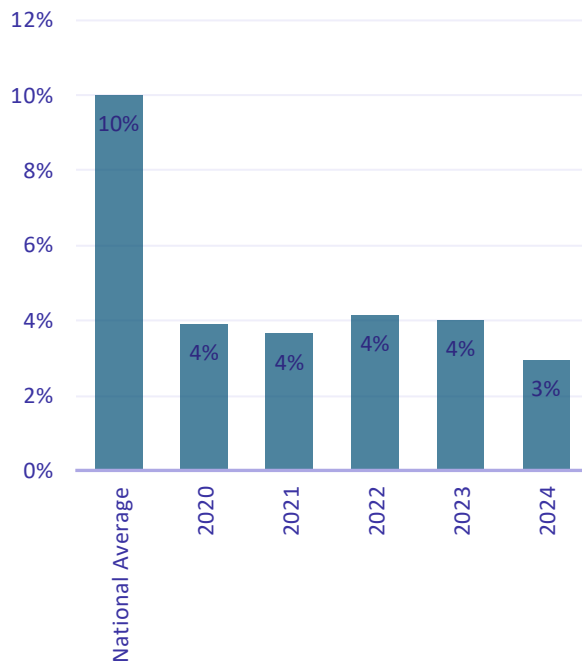


## Linear Operations

### Water Distribution

- The in-City water distribution system includes 645 km of mains and 30,636 water services.
- In 2024, there was 39 water leaks in the distribution system.
- The 2,562 hydrants in the system were checked twice with 32 hydrants being replaced.
- Half of the 6,042 water valves in the system were checked and 43 were replaced.
- In 2024 the City achieved only a 3% water loss.

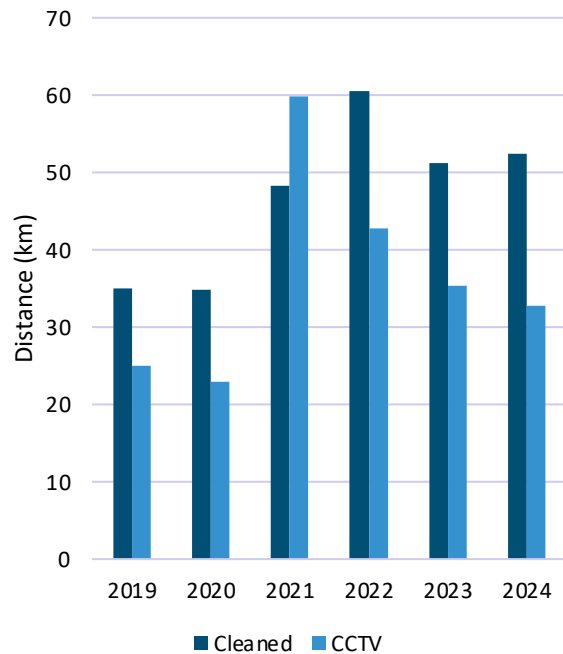
### Water Loss



### Wastewater Collection

514 kilometers of sanitary sewer pipe.

### Cleaning and CCTV Distances



### Source Control

Overstrength Surcharge Program monitors the wastewater in the City to ensure that it does not exceed the limits of various compounds. The City continues to work with stakeholders to meet Utility Bylaw standards and ensure the wastewater treatment plant operates efficiently.

### Work Orders and Service Requests

Construction and Maintenance resolved 541 Water and Wastewater requests in 2024, with 340 in Water and 99 in Wastewater. There were 102 customer driven requests.



**5.0**

# FINANCIAL INFORMATION



## 5.0 FINANCIAL INFORMATION

This section will outline the financial information for 2024 in the Utilities.

### Utilities Rates

The following figures (Figure 1 and 2) outline the variable rates for water and wastewater.

#### In-City Rates

For the in City customers, there is a non-variable charge. These charges are included for both water and wastewater and is based on the water meter size. In City customer rate reflects both the cost of wastewater treatment and the cost of wastewater collection. In 2024, for a 16 mm residential meter, this charge is \$17.67 for water and \$17.85 for wastewater, up from \$17.05 for water and \$16.95 for wastewater in 2023.

#### Regional Rates

Each unique regional commission or municipality is charged their corresponding variable rate. In water, the regional rates and in-city rates include both water treatment and water distribution costs (mains, valves and pump stations). The regional customer's water distribution costs are allocated based on volume of water delivered. In wastewater, the regional rate includes treatment and an overstrength credit. Each municipality and Commission will also levy their own rates prior to being a ratepayer receiving a bill. These rates allow for those independent communities to maintain and operate their own infrastructure that connects to Red Deer's water utility infrastructure.

Both the water and wastewater rates figures show that in 2020-2022, the rates were kept relatively the same with only small 0.01\$ increases over the years. The trends from 2022-2025 show a trend upward which reflects an increase in water and wastewater costs, influenced by inflation, improvements and enhancements to the water and wastewater treatment process and changing City Policies.



### Water Variable per m3

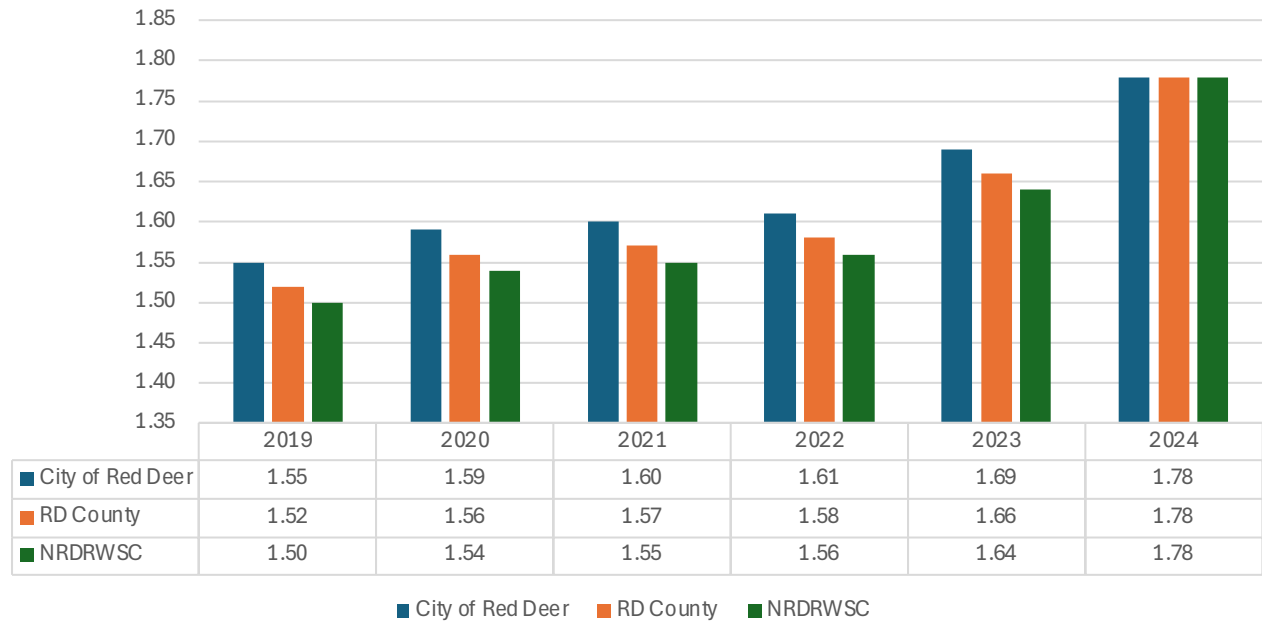


Figure 1 – City of Red Deer Water Rates for City of Red Deer In-City and Regional Customers (2019 – 2024)

### Wastewater Variable per m3

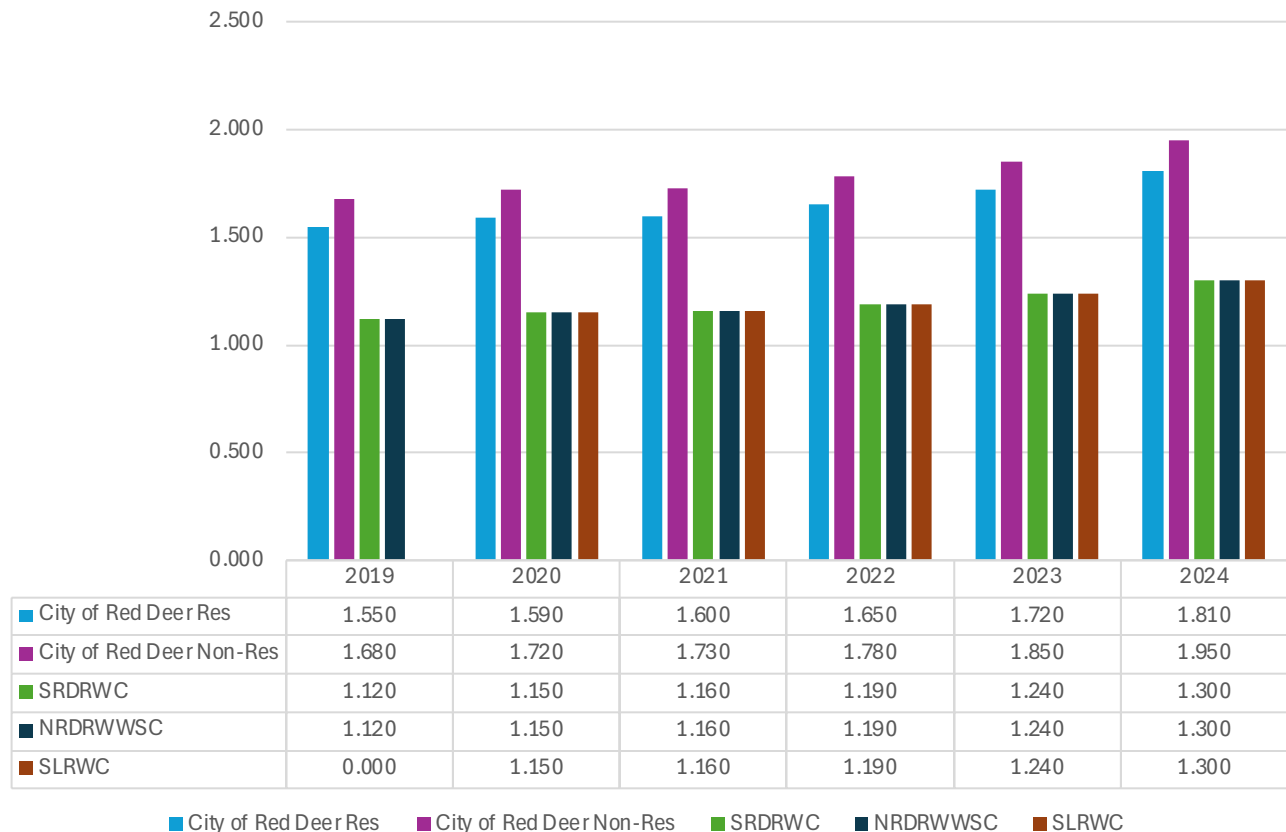


Figure 2 – City of Red Deer Wastewater Rates for City of Red Deer In-City and Regional Customers (2019 – 2024)





## Utilities Financial

In 2024, total unaudited revenues for the Water Utility reached \$32.5 million (Table 1), reflecting steady growth driven by increasing service demands and regional expansion. Operating expenses (unaudited) totaled \$24.7 million, ensuring effective management of infrastructure and essential services, while generating an excess revenue of \$7.8 million to support future investments (Table 2). The Reserve Balance for the Water Utility, declined from 2020 onwards due to numerous Capital Additions in the last 5 years as shown in the Figure as it starts to recover. The consistent growth in the City's Tangible Capital assets (Table 4) outlines the City's ongoing investments in our infrastructure and operational improvements.

The Wastewater Utility reported total unaudited revenues of \$34.7 million (Table 5) with expenses amounting to \$22.8 million (Table 6), resulting in an operational surplus that reinforces long-term sustainability. Strategic financial planning and strong reserves, shown in Table 7, have enabled continued funding for key capital projects, including wastewater treatment upgrades, pipeline replacements, and flood mitigation initiatives. In Figure 4, shows a steady increase in the City's Reserve above \$26 million in 2024. A healthy wastewater utility reserve and the grant funding provided for the upcoming WWTP Phase 5 project, has meant borrowing was not necessary. The City's WWTP, has undergone numerous Capital Additions in the last 5 years as shown in the Figure, in 2021 and 2024 various capital assets were added including upgrades to the headworks and lagoons. Similar to the Water Utility, the City ongoing investments in the wastewater infrastructure and operational improvements with a consistent growth in the Tangible Capital Assets (Table 8).

By maintaining fiscal responsibility and cost efficiency, Red Deer's Utilities remain well-positioned to support the community's growing needs while investing in innovative, environmentally responsible solutions for the future.

## Water Financials (unaudited)

TABLE 1 - STATEMENT OF OPERATIONS (REVENUE)

Revenue - Water Utility	2020	2021	2022	2023	2024
Total Tariff Revenue	26,745	27,553	27,174	29,346	31,576
In-City	21,744	22,475	22,219	23,897	25,647
Regional	5,001	5,078	4,955	5,449	5,929
Miscellaneous Revenue	1,150	967	843	800	924
Total Revenue	27,895	28,520	28,017	30,146	32,500

TABLE 2 - STATEMENT OF OPERATIONS (EXPENSES AND EXCESS OF REVENUES OVER EXPENSES)

Expenses - Water Utility	2020	2021	2022	2023	2024
Personnel	4,823	4,700	4,654	4,903	5,253
General and Contracted Services	995	1,100	1,082	2,060	1,374
Materials, Supplies & Utilities	2,978	2,405	3,250	3,379	3,764
Interdepartment Charges	5,080	5,169	4,704	4,595	5,645
Amortization	5,544	5,637	6,544	7,162	7,371
Financing Costs	675	916	1,110	1,174	1,267
Total Expenses	20,095	19,926	21,345	23,272	24,674
Excess of Revenue over Expenses	7,800	8,594	6,672	6,874	7,826

TABLE 3 - FINANCING ACTIVITIES

	2020	2021	2022	2023	2024
Reserves Balance Year End	13,730	10,927	8,403	2,355	1,449
Dividend Paid to City of Red Deer	1,466	1,466	1,466	1,488	2,542
New Debentures	16,000	8,200	3,100	3,500	3,403
Long-Term Debt @ YE	36,156	41,880	42,136	42,613	42,852
Capital Additions (net)	6,855	15,398	46,012	15,285	14,675



FIGURE 3 – WATER UTILITY CAPITAL FUNDING (2020 – 2024)

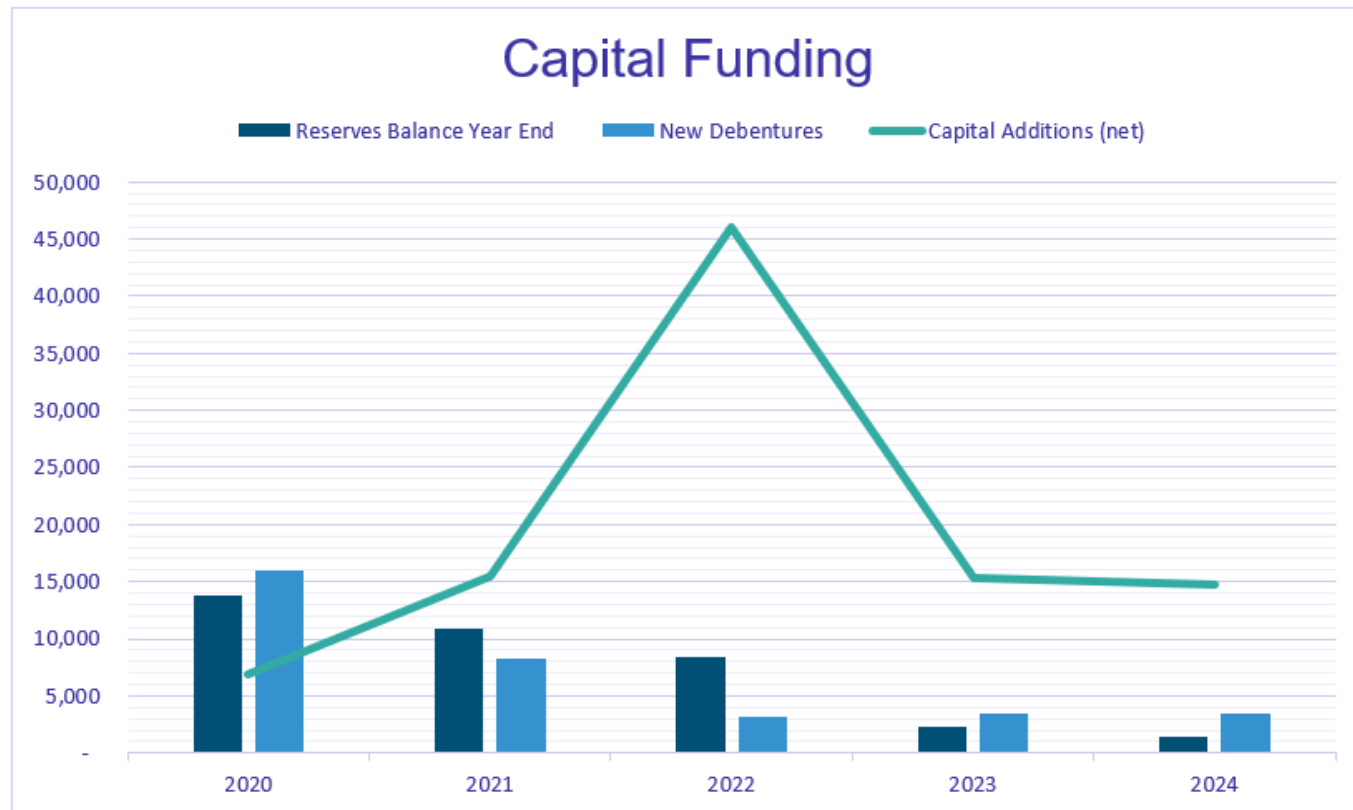


TABLE 4 - STATEMENT OF FINANCIAL POSITION

	2020	2021	2022	2023	2024
Tangible Capital Assets (TCA)	364,607	380,005	426,017	441,302	455,978
Long-Term Debt	36,156	41,880	42,136	42,613	42,852
Reserves Balance Year End	13,730	10,927	8,403	2,355	1,449

## Wastewater Financials (unaudited)

TABLE 5 - STATEMENT OF OPERATIONS (REVENUES)

Revenue - Wastewater Utility	2020	2021	2022	2023	2024
Total Tariff Revenue	30,051	29,762	31,949	33,373	34,298
In-City	21,532	22,217	23,336	24,902	25,645
Regional	8,519	7,545	8,614	8,471	8,653
Miscellaneous Revenue	1,335	1,538	478	280	447
Total Revenue	31,386	31,300	32,427	33,653	34,745

TABLE 6 - STATEMENT OF OPERATIONS (EXPENSES AND EXCESS OF REVENUE OVER EXPENSES)

Expenses - Wastewater Utility	2020	2021	2022	2023	2024
Personnel	5,335	4,907	4,924	5,432	5,799
General and Contracted Services	2,237	2,379	2,672	3,050	2,485
Materials, Supplies & Utilities	2,351	2,103	2,462	2,581	3,502
Interdepartment Charges	4,031	4,803	3,835	4,110	4,149
Amortization	4,913	5,421	6,836	6,073	6,283
Financing Costs	1,115	985	849	706	557
Total Expenses	19,981	20,599	21,579	21,953	22,775
Excess of Revenue over Expenses	11,405	10,701	10,848	11,701	11,970

TABLE 7 - FINANCING ACTIVITIES

	2020	2021	2022	2023	2024
Reserves Balance Year End	20,356	19,544	22,728	24,914	26,032
Dividend Paid to City of Red Deer	1,406	1,532	1,685	2,685	3,185
New Debentures	-	-	-	-	-
Long-Term Debt @ YE	22,116	19,050	15,847	12,502	9,007
Capital Additions (net)	10,257	21,419	10,183	8,587	15,789



FIGURE 4 – WASTEWATER CAPITAL FUNDING

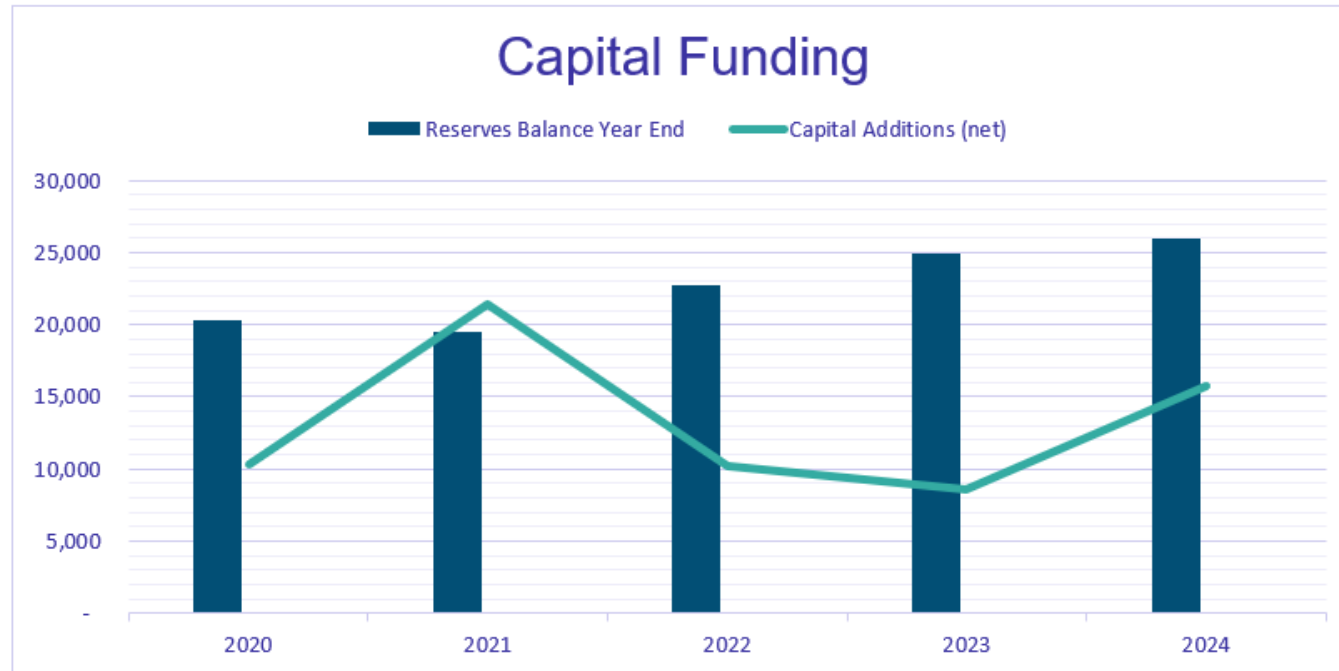


TABLE 8 - STATEMENT OF FINANCIAL POSITION

	2020	2021	2022	2023	2024
Tangible Capital Assets (TCA)	390,123	411,542	421,725	430,312	446,102
Long-Term Debt	22,116	19,050	15,847	12,502	9,007
Reserves Balance Year End	20,356	19,544	22,728	24,914	26,032

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