

CAPITAL FUND – 2025 Capital Projects

Capital Projects	2025 Budget (\$000's)	Formula Funding (\$000's)	Canada Community-Building Fund (\$000's)	Other Grants (\$000's)	Community Public Infrastructure Funding (\$000's)	Downtown Dev Reserve (\$000's)	IT Reserve (\$000's)	Mobile Equipment Replacement Reserve (\$000's)	User Fees (\$000's)
City Hall Retrofit	300	(300)	-	-	-	-	-	-	-
City of Yellowknife Dog Pound	550	(138)	-	-	(413)	-	-	-	-
Cooler Replacement Multiplex	675	-	-	-	(675)	-	-	-	-
Fire Division Engine 2 Restoration	60	(60)	-	-	-	-	-	-	-
Fire Hall Equipment	77	-	-	-	(77)	-	-	-	-
Firehall Renovations/ Expansion	2,309	(176)	-	-	(2,134)	-	-	-	-
Fleet Management	2,314	-	-	-	-	-	-	(2,314)	-
Fuel Tank Replacement Study YKCA/City Hall	100	(100)	-	-	-	-	-	-	-
Housing Accelerator Fund (HAF)	1,740	-	-	(1,740)	-	-	-	-	-
Information Technology Infrastructure Renewal	295	-	-	-	-	-	(295)	-	-
Lift Station #1 Replacement	15,900	(3,495)	(2,668)	(5,554)	-	-	-	-	(4,184)
New Landfill/ Landfill Expansion	4,500	-	(903)	(2,018)	(1,580)	-	-	-	-
Outdoor Recreation	233	-	-	-	(233)	-	-	-	-
Park Equipment Replacement	480	(400)	-	(80)	-	-	-	-	-
Patching Program	349	(349)	-	-	-	-	-	-	-
Paving Program	200	-	(200)	-	-	-	-	-	-
Stormwater Receiving Environment Study	50	(50)	-	-	-	-	-	-	-
Traffic Light Upgrades	165	-	-	-	(165)	-	-	-	-
Transportation Master Plan	300	(300)	-	-	-	-	-	-	-
WTP Flocculant Study & Work	50	-	-	-	-	-	-	-	(50)
Water & Sewer Infrastructure Failure and Business Continuity Planning	250	-	-	-	-	-	-	-	(250)
Water & Sewer Infrastructure Replacement	6,800	-	(6,800)	-	-	-	-	-	-
Water & Sewer Replacement - PAVING	600	-	(600)	-	-	-	-	-	-
Water Licence Projects - Solid Waste Management	225	-	-	-	-	-	-	-	(225)
Wetland Delineation & Great Slave Lake (GSL) Monitoring	250	-	(50)	-	-	-	-	-	(200)
Total Capital Projects	38,772	(5,368)	(11,221)	(9,392)	(5,277)	-	(295)	(2,314)	(4,909)

CAPITAL FUND – 2025 Capital Projects

Capital Projects	2023 Budget (\$000's)	2023 Actuals (\$000's)	2023 CarryForward (\$000's)	2024 Budget (\$000's)	2024 Forecast (\$000's)	2025 Budget (\$000's)	2026 Budget (\$000's)	2027 Budget (\$000's)	Note
Accessibility Audit/Implementation	595	935	1,342	-	445	-	400	300	
Aquatic Centre	43,057	26,499	30,830	3,588	34418	-	-	-	
Arbour Development Study	-	2	43	25	-	-	750	-	
Asset Mgmt - System Develop & Implementation	340	74	700	430	430	-	62	-	
Budget Management	-	-	25	-	25	-	-	-	
CEP Community Outreach	-	-	32	-	-	-	-	-	
CEP Energy Efficiency Fund	-	-	-	100	-	-	200	-	
CEP Interior LED Lighting	-	29	147	-	-	-	-	-	
City Hall Retrofit	-	15	159	300	31	300	-	-	
City of Yellowknife Dog Pound	-	-	-	-	-	550	-	-	
Cooler Replacement Multiplex	-	-	-	-	-	675	-	-	
CS Land Fund Capital Projects	-	234	1,666	-	-	-	-	-	
Curling Club Upgrades	615	151	614	-	704	-	-	-	
Development & Building Permit Automation	-	17	56	-	56	-	-	-	
Emergency Radio Infrastructure Renewal	-	-	-	450	450	-	-	-	
Fiddler's Lake Treatment System Projects	400	15	282	-	56	-	-	-	
Fieldhouse Floor Cover	405	76	329	-	329	-	-	-	
Fire Division Engine 2 Restoration	-	-	-	-	-	60	-	-	
Fire Hall Equipment	95	27	68	58	126	77	58	58	
Fire Hall Expansion/ Renovation	4,449	887	4,094	4,449	1866	2,309	5,000	5,000	
Fleet Management	1,882	1,137	3,563	2,097	2267	2,314	1,524	1,483	
FLTS Flow Calculation/Meter Installation	-	-	-	150	-	-	-	-	
Fuel Tank Replacement City Hall	-	-	-	-	-	-	325	-	
Fuel Tank Replacement Study YKCA/City Hall	-	-	-	-	-	100	545	-	
Fuel Tank Replacement YKCA	-	-	-	-	-	-	325	-	
Information Technology Infrastructure Renewal	327	358	-	440	440	295	304	440	
Lagoon Control Structure Replacement	-	4	-	-	-	-	-	-	
Lagoon Sludge Removal	2,800	20	5,008	2,800	100	-	2,800	-	
Land Fund Capital Projects	900	1,756	2,700	2,200	2400	-	2,000	-	
Land Surveying (Commissioners)	-	-	600	-	50	-	100	-	
Landfill Leachate Retention & Treatment	430	-	250	-	-	-	-	-	



CAPITAL FUND – 2025 Capital Projects

Capital Projects	2023	2023	2023	2024	2024	2025	2026	2027	Note
	Budget (\$000's)	Actuals (\$000's)	CarryForward (\$000's)	Budget (\$000's)	Forecast (\$000's)	Budget (\$000's)	Budget (\$000's)	Budget (\$000's)	
Lift Station #1 Replacement	3,260	321	3,389	500	500	15,900	23,500	2,600	
New Landfill/ Landfill Expansion	-	21	302	2,160	85	4,500	100	-	
Niven Lake Ravine Trail Sludge	-	-	-	300	-	-	-	-	
Outdoor Recreation	-	-	-	305	300	233	200	-	
Park Development	165	43	42	-	80	-	-	-	
Park Equipment Replacement	250	341	3	490	337	480	240	320	
Patching Program	330	177	153	338	325	349	359	370	
Paving Program	6,465	109	2,845	-	390	200	5,250	150	
Paving Program - ICIP	-	4,304	365	-	310	-	-	-	
PH#4 Water Truckfill Safety Project	-	7	-	-	-	-	-	-	
PHs- New Piping	-	14	-	-	-	-	-	-	
Planning & Dev. HAF Capital Expenses	-	-	-	-	-	1,740	1,657	1,634	
RIMP Building Structural Assessment	-	20	55	-	50	-	-	-	
RIMP Repurposing Phase One	-	-	-	-	-	-	200	-	
Site Restoration/Landfill Closure	-	-	-	75	75	-	-	-	
Solid Waster Management Plan Implementation	-	-	-	50	50	-	-	-	
Storm water Receiving Environment Study	-	-	-	-	-	50	200	150	
Submarine Line Contracted Costs	1,000	1,250	2,508	-	150	-	-	-	
Traffic Lights Video Detection Equipment	70	77	22	70	92	165	580	80	
Transfer Station & Cell Access Improvement	-	-	99	-	99	-	75	-	
Transportation Master Plan	-	-	-	-	-	300	-	-	
W&S Federal Funded - PAVING - ICIP	-	-	126	-	126	-	-	-	
Water & Sewer Infrastructure Failure & Business Continuity Planning	-	-	-	-	-	250	-	-	
Water & Sewer Infrastructure Replacement	-	174	-	100	100	6,800	150	3,500	
Water & Sewer Replacement - PAVING	-	480	-	-	-	600	2,050	100	
Water Licence - Solid Waste Mgmt.	50	-	50	150	203	225	150	175	
Water Treatment Plant Pellet Boiler	-	101	-	-	-	-	-	-	
Webcasting	-	108	-	-	-	-	-	-	
Weigh Out Station At SWF	-	10	-	1,650	60	-	-	-	
Wetland and GSL Monitoring	-	102	-	-	245	-	-	-	
Wetland Delineation & Great Slave Lake (GSL) Monitoring	-	-	-	80	-	250	300	315	
Wildland Fire Mitigation Emergency Measures	-	458	-	-	-	-	-	-	
Wireless Infrastructure	-	19	-	-	-	-	-	-	
WTP Flocculant Study & Work	-	-	-	111	-	50	-	-	
Total Capital Projects	67,885	40,372	62,467	23,466	47,770	38,772	49,404	16,675	

CAPITAL FUND – 2025 Capital Projects

Department CS Community Services **Division** City Hall
Project 56016570 City Hall Retrofit

Budget			
	2025	2026	2027
	\$	\$	\$
Expenditures	300,000		
Funding			
Formula Funding	300,000		
Total Funding	300,000		

Purpose

To address the required maintenance on the asset that is reaching 50 years of useful life, while also addressing other limitations such as space optimization, hazardous materials abatement and business continuity planning.

Project Details

City Hall was constructed in 1976 and is comprised of three (3) floors. Two floors are active working space for staff, while the third (top) floor is dedicated to mechanical systems for the building.

Over time, there has been significant growth in workloads, priorities and expectations of the municipal government since the original construction of City Hall. These workload indicators have required additional staff resources thus expanding the need for additional workspace. Each floor of the building has undergone various retrofits and upgrades to create office space for the various work units of the corporation. These changes to the building have affected heating and air handling systems that make the working environment difficult to balance. For example, one office equipped with a thermostat may be very warm, while the office next door is very cold. This results in staff using electric space heaters and other makeshift solutions that present other problems and safety concerns. There are also asbestos containing materials throughout the building that significantly complicates smaller interior upgrades.

The project also considers business continuity of city operations should an emergency occur. This means the replication of offsite information technology data servers as well as emergency operations center (EOC) considerations such as adequate space and storage for an EOC to function. A functional assessment and space optimization study will be completed in 2024 and was based on a building condition assessment as well as modern office space standards adopted by the Government of the Northwest Territories and other levels of government.



CAPITAL FUND – 2025 Capital Projects

Department CS Community Services
Project 56016570 City Hall Retrofit

Division City Hall

Tentative Project Schedule (subject to change)

- 2025 Complete planning, detailed design and tender phases.
- 2026 Complete replication of IT infrastructure, staff relocation and begin construction.
- 2027 Construction
- 2028 Construction (if necessary)

Operational Impact

Modernization to more efficient mechanical and electrical systems should lower annual operating costs.



CAPITAL FUND – 2025 Capital Projects

Department PS Public safety **Division** Municipal Enforcement
Project ME0004 City of Yellowknife Dog Pound

Budget			
	2025	2026	2027
	\$	\$	\$
Expenditures	550,000		
Funding			
Formula Funding	137,500		
Community Public Infrastructure Funding	415,500		
<i>Total Funding</i>	550,000		

Description

Purpose

It is safe to say that Yellowknife is a dog community. The City needs to revamp how dogs are impounded, cared for, and reunited with owners. Municipal Enforcement currently relies on private contractors for this service. Increased demands for the provision of this service with a long-time provider has led to end of that agreement, with another provider agreeing to temporarily take on the service. This is not a permanent solution and no bids for the service were received through the City's procurement process.

Project Details

A dog pound is a place where stray, lost, seized, abandoned or surrendered dogs are housed. The City currently has a partnership with a local service provider who indicated no capacity to take on the fully burdened service. The City released a request for proposals through our bids and tenders process to which no community interest was received. The Municipal Enforcement Division is recommending a City owned dog pound facility, similar to the Town of Inuvik. This facility could hold up to 16 dogs, while our current capacity with our contractor is a maximum of 2.

The number of dog related complaints, especially ones where a dog may need to be seized and impounded, have been increasing. In the 6 months from January to August, 2024, Municipal Enforcement received a total of 342 dog calls, with 26 being related to dog bites and attacks and 47 being related to dog neglect or cruelty. This is a considerable increase in service as the 3-year total from 2021 – 2023 was 311, with 28 dog bites or attack calls and 31 dog neglect or cruelty calls. By the end of 2024 we are projecting these numbers to increase even more. On average Municipal Enforcement impounds approximately 55 dogs per year. From January – August 2024, 43 dogs have already been impounded and we expect this number to exceed the yearly average. This anticipated increase is specifically due to the higher than normal dog attacks and dog neglect calls in the community. Increased dog complaints is one metric for a request for additional staff in Municipal Enforcement.

The City has land which could be allocated in the zoned area. The structure is prefabricated, shipped to and set up on site. Local contractors would be needed to assemble the building and finish the interior and install additional fencing. The operational care would be provided by the current and additional Municipal Enforcement staff and these duties would fall within job requirements.



CAPITAL FUND – 2025 Capital Projects

Department PS Public Safety
Project ME0004 City of Yellowknife Dog Pound

Division Municipal Enforcement

This facility is a worthwhile investment for the City. All revenue generated from the impoundment and release of dogs would be the City's, where currently the revenue is shared between the City and the service provider. From a business continuity perspective, the stand-alone facility also alleviates the risk of future potential termination of service agreements that was just experienced where the City searching for temporary solutions. Additionally, a facility of this type would also play a crucial role in dealing with dogs and other pets during a community emergency or evacuation.

Based on community research, it is estimated that in order to find a suitable service provider who owns and could operate a dog impound service, the cost the City is in excess of \$100,000 per year. Without adequate facilities Municipal Enforcement will be unable to impound any dogs, including those deemed vicious and involved in attacks. Without an appropriate facility, this situation produces a severe community public safety concern with increased public complaint and criticism.

Operational Impact

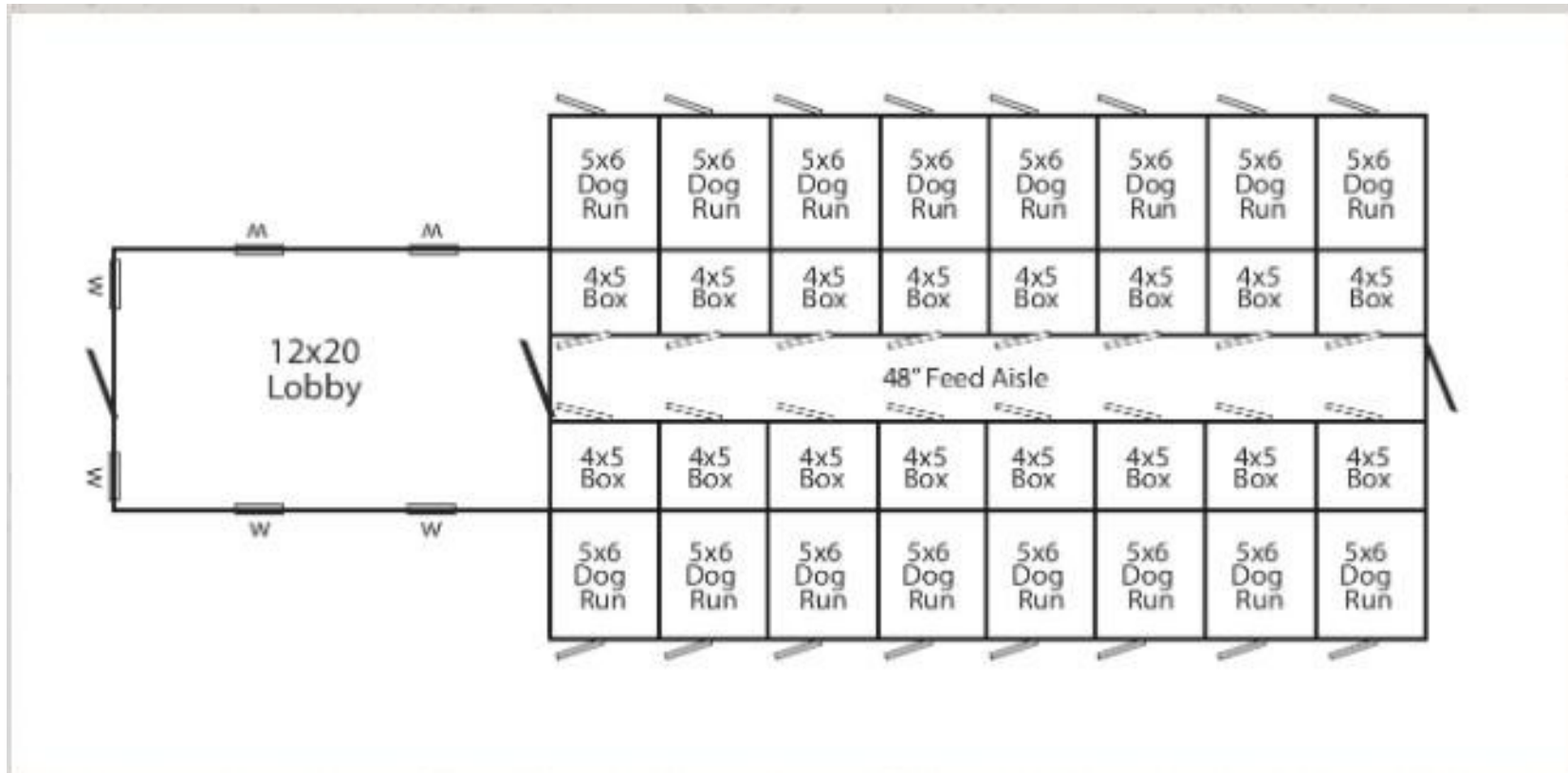
The estimated annual operating budget for heat, electricity, and pet care is \$45,000.



CAPITAL FUND – 2025 Capital Projects

Department PS Public Safety
 Project ME0004 City of Yellowknife Dog Pound

Division Municipal Enforcement



CAPITAL FUND – 2025 Capital Projects

Department Project PS Public Safety
FD00018 Fire Division Engine 2 Restoration

Division Fire & Ambulance

		Budget		
		2025	2026	2027
		\$	\$	\$
Expenditures		60,000		
Funding				
	Formula Funding	60,000		
	Total Funding	60,000		

Purpose

The City of Yellowknife has an important part of our history that is in need of some repairs. Similar to the Bristol Freighter on display at the entrance to the City, the Fire Division has a historical piece of equipment, Engine 2, which requires repairs to restore the vehicle to operating condition so it may be a functional part of the rich history of the fire service in Yellowknife.

Project Details

Engine 2 was built for the Yellowknife Fire Division and placed into operations in October 1957, being retired from service in June of 1985. The fire truck served the City of Yellowknife for 28 years and has been with the Fire Division for the last 67 years. The Fire Division (Fire Department) was established in 1946, this vehicle has been part of this history for 2/3rd of the division's history.

This vehicle has not run in the last 10 years, and it is important that this vehicle be maintained and operational so that it may be used in parades, events, functions and special activities. It also has a further intangible value with creating pride in our fire service and the community. Without financial input the truck it will continue to slowly decay.

Operational Impact

In the first year, there will be no expected operational costs, until it is restored and operational to drive on the road. Annual service starting year two is estimated at \$5,000.00 per year.



CAPITAL FUND – 2025 Capital Projects

**Department
Project**

PS Public Safety
FD00018 Fire Division Engine 2 Restoration

Division

Fire & Ambulance



CAPITAL FUND – 2025 Capital Projects

Department PS Public Safety **Division** Fire & Ambulance
Project 63007615 Fire Hall Equipment

Budget			
	2025	2026	2027
	\$	\$	\$
Expenditures	77,000	58,000	58,000
Funding			
Community Public Infrastructure Funding	77,000	58,000	58,000
<i>Total Funding</i>	77,000	58,000	58,000

Description

Purpose

To maintain the preparedness and response capacity for an all hazards approach to meet the Council approved Level of Service, key functional and reliable equipment is required to protect the safety of our residents and staff. Stewardship of physical resources is a core principle of Public Safety.

Project Details

Equipment for emergency services is maintained and replaced based on best practices for ownership and recommended manufacturer replacement time frames. In 2025, the Fire Division equipment asset and equipment replacement schedule would comprise the replacement of the rescue air bag system, and the addition of mechanical cardiopulmonary resuscitation (mCPR) devices.

Air lifting bags are extensively employed for use in vehicles, heavy equipment, heavy machinery, and confined space rescue incidents where traditional lifting methods are impractical. Situations when dealing with delicate or unstable structures are additional uses of the equipment.

Mechanical cardiopulmonary resuscitation (mCPR) devices provide automated chest compressions to sudden cardiac arrest victims. These devices are designed to provide high quality CPR to achieve the return of spontaneous circulation. High-quality CPR refers to delivering chest compressions to an unresponsive individual in order to provide perfusion to critical organs at a specific fraction, rate, compression depth. Continuously compressing a patient's chest can become physically exhausting for staff, and properly timing compressions can become mentally exhausting. Consequently, most rescuers can only deliver high-quality CPR for a few minutes at a time. mCPR devices offer compressions at a consistent fraction, rate, and depth increasing the viability of patients.



CAPITAL FUND – 2025 Capital Projects

Department PS Public Safety
Project 63007615 Fire Hall Equipment

Division Fire & Ambulance

Operational Impact

O&M cost on the first to second year ownership is negligible as new equipment carries warranty. Minor annual testing and certification costs is associated with the cost of ownership regardless of current or replacement equipment.



CAPITAL FUND – 2025 Capital Projects

Department Project PS Public Safety
63046570 Fire Hall Renovations/Expansion

Division Fire & Ambulance

Budget			
	2025	2026	2027
	\$	\$	\$
Expenditures	2,309,399	5,000,000	5,000,000
Funding			
Formula Funding	175,899	1,897,000	5,000,000
Community Public Infrastructure Funding	2,133,500	3,103,000	
<i>Total Funding</i>	2,309,399	5,000,000	5,000,000

Description

Purpose

In 2021, Council approved the renovation of and addition to the existing Fire Hall as the asset had reached the end of its life expectancy. As a result, it was in need of extensive renewal. This included additional square footage to accommodate existing and future operational and training requirements. The expansion and renovation was the most feasible and fiscally responsible approach for addressing requirements to improve the facility’s condition and its functionality. The expansion and renovation will allow the Fire Hall to accommodate current and future staffing levels, equipment required to meet the needs of the programs, and occupational health and safety that support the Council approved Fire Division Level of Service.

Project Details

In 2022, the City conducted a competitive bid process through procurement services to secure consulting services. The successful proponent awarded the contract provides project management and consultant scope with the delivery of a detailed design for the expansion and renovation of the Fire hall. The first phase of the project in 2022 and 2023 was to complete a detailed facility and site design, and review/refine the construction requirements, timeline, and projected cost for the construction phase of the project. The project was delayed in 2023 due to the impact of the wildfire event and evacuation. The consultant did undertake a review to determine potential cost savings within the scope of the project. The final design, specifications and tender documents have been received by the City.

From the presentation to Council on January 22, 2024, on Long Term Capital Planning, the cost of this project has exceeded the initial projected estimate based on changes in the economic landscape since the original estimate. On April 4, 2024, the consultant provided a Class 1 Estimate of probable cost, and the project is now expected to cost approximately \$21.2 million. The actual cost of the renovation and expansion will be realized through the competitive bid process.



CAPITAL FUND – 2025 Capital Projects

Department Project PS Public Safety
63046570 Fire Hall Renovations/Expansion

Division Fire & Ambulance

Operational Impact

The increase in size of the facility from existing contemplates an operational impact on heating and electrical costs. The exact impact of these costs are unknown as improvements and modernization in building envelopment and insulation, windows and doors, lighting systems, and heating/cooling systems may create negligible cost impacts of expansion to facility.



CAPITAL FUND – 2025 Capital Projects

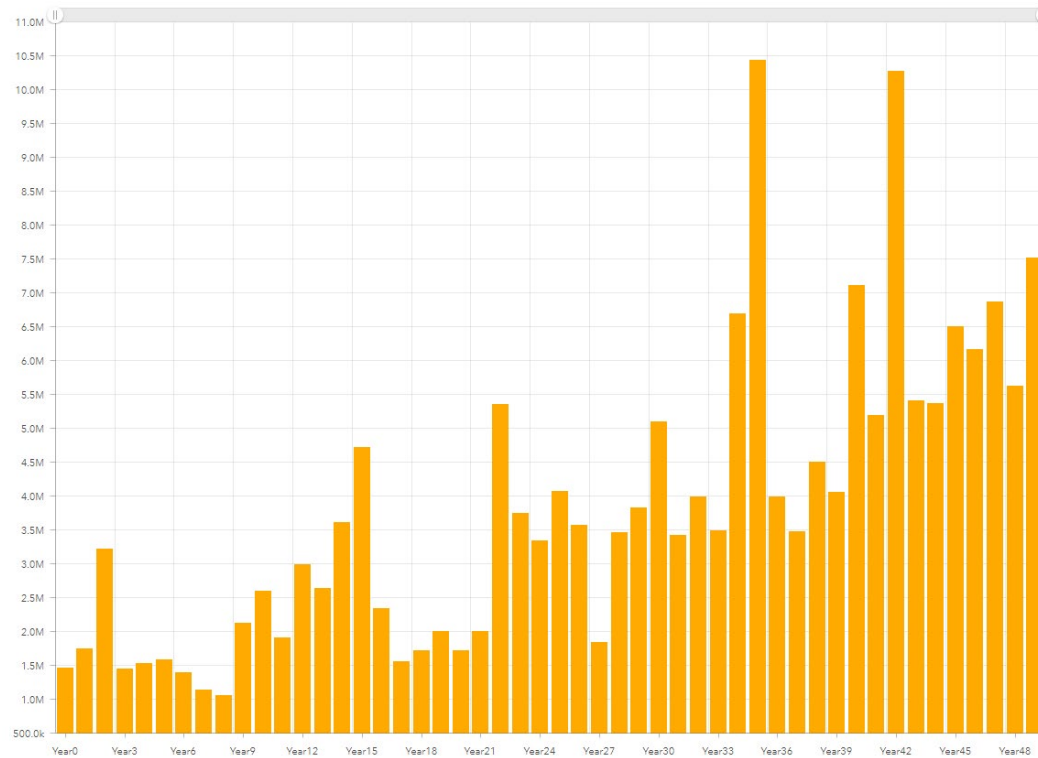
Department PW Public Works & Engineering
Project 71507801 Fleet Management

Division

Fleet Management

Gallery

50 Year Forecast



Number of Assets	128
Current Replacement Value	18.7M
Annual Average (10yr Forecast)	1.7M
Annual Average (50yr Forecast)	3.8M

Gallery 1 - 50 Year Forecast



CAPITAL FUND – 2025 Capital Projects

Department CS Community Services
Project FC0038 Fuel Tank Replacement Study
 YKCA/City Hall

Division Yellowknife Community Arena

Budget			
	2025	2026	2027
	\$	\$	\$
Expenditures	100,000	545,000	
Funding			
Formula Funding	100,000	545,000	
<i>Total Funding</i>	100,000	545,000	

Description

Purpose

The proposed project would include an engineering and an environmental assessment of the underground fuel tanks at the Community Arena and at City Hall. The study would be used to inform City Staff regarding the timing and methodology of replacing the tanks.

Project Details

In 2025 it is proposed to contract a qualified engineering firm to carry out an environment and engineering assessment on the current underground fuel tanks at the Community Arena and City Hall. There is no corporate knowledge on when the tanks were last replaced so in undertaking the view of asset management and due diligence it is necessary to address these two fuel tanks.

The assessment will evaluate the expected lifespan of the current fuel tanks and provide an engineering plan for their replacement including parameters for the timing of construction, determining the design, technical requirements and options for construction. It is essential that these assets be evaluated in a timely manner to ensure public and environmental safety are not compromised.

It is assumed that due to the age of the fuel tanks there will be the requirement for replacement in a timely manner. Funds have been identified in 2026 to carry out the work. However, if the assessment proves otherwise, the 2026 project will not proceed.

CAPITAL FUND – 2025 Capital Projects

Department Project PD Planning & Development
6506561 Housing Accelerator Fund (HAF) **Division** Housing Accelerator Fund

Budget			
	2025	2026	2027
	\$	\$	\$
Expenditures			
Infill	291,680	277,355	273,473
Density	149,201	142,122	140,204
Disposal	354,691	337,841	333,274
Development Process	570,156	543,069	535,728
Development Incentives & Disincentives	182,333	173,675	171,329
Parking Revision	99,467	94,748	93,469
Affordable Housing	92,586	88,190	87,000
<i>Total Expenditures</i>	1,740,114	1,657,000	1,634,477
Funding			
Other Grants	1,740,114	1,657,000	1,634,477
<i>Total Funding</i>	1,740,114	1,657,000	1,634,477

Description

Purpose
The City of Yellowknife was successful in securing Federal funding through Canadian Housing and Mortgage Corporation (CMHC) to fund the development of affordable, inclusive, equitable and climate-resilient housing. The HAF includes incentive funding, provided to assist the City in removing barriers and to encourage local initiatives to build more homes faster.

Incentive funding is to be used for prescribed uses, which fall under four categories:

1. Investments in Housing Accelerator Fund Action Plans
2. Investments in Affordable Housing
3. Investments in Housing-Related Infrastructure
4. Investments in Community-Related Infrastructure that Supports Housing



CAPITAL FUND – 2025 Capital Projects

Department PD Planning & Development
Project 6506561 Housing Accelerator Fund (HAF)

Division Housing Accelerator Fund

Project Details

An Action Plan was submitted by the City of Yellowknife and forms the basis of the programs to be completed from December 2023 to December 2027.

- The programs include the following and are required as outlined in the Federal Funding Agreement:
 - Housing Needs Assessment
- Infill (Infill Development Promotion and Engagement)
- Density (Allowing increased housing density – units, height)
- Disposal (of City Owned Land Assets)
- Development Process (Implementing a streamlined development process)
- Development Incentives and Disincentives
- Revised Parking Requirements (Items below are approved but not specifically funded through HAF)
- Infrastructure Planning
- Climate Mitigation and Adaptation

The Planning and Development Department will dedicate priority to these items over the next four years. The funding allocated for the specific projects above amounts to \$2,107,400.17 in each year.

The City of Yellowknife Land Developments that fall within the HAF scope include Infill and Density:

- Burwash Drive Con Road;
- School Dra;
- Niven Drive;
- Taylor Road;
- Gitzel Lots; and
- Niven Phase 8

The agreement was signed December 2023 for funding to 2027.

CAPITAL FUND – 2025 Capital Projects

Department Project	GG General Government 44007600 Information Technology Infrastructure Renewal	Division	Information Technology
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servers so while reduced, there is still a requirement to maintain physical servers for some applications and services. Continual replacement of physical servers to ensure the increased demands on memory and storage is critical. During the term of this budget, the Information Technology Division will use the allocated funds to grow the capacity of this environment, redeploy server equipment that is nearing the end of its life expectancy, and sustain a reasonable inventory of spare parts to ensure replacements are readily available when failures occur.

Network

The network that provides connectivity among the City's computers, laptops, servers, printers, cameras, mobile devices, telephones, traffic lights, SCADA monitors, and emergency voice radios is vital to the City's operations. Planned and incremental investment in this network is required so that it can continue to meet the increasing demands placed on it as functions throughout the organization turn to technology to streamline workloads and improve services.

The City's network employs Ethernet, leased and City-owned fiber, wireless, and microwave technologies to create connections among 15 sites. Within each site the network connects numerous devices, ensuring that staff, citizens, and stakeholders have consistent and reliable access to applications, data, printers, and the internet.

The network also provides connectivity to every traffic light in order to streamline traffic control management within the Public Works department; this initiative alone added 63 network devices to the City's infrastructure. With additional traffic lights and cameras on the horizon, this complement will continue to grow.

The City's SCADA network connects 23 network devices at lift stations and pumphouses to the City's infrastructure (Gallery 1).

Ongoing replacement of key network equipment assists in the reduction of unplanned outages and prepares for future technologies and growth. City-owned and operated connections have been established between several sites which has reduced reliance on third-party fiber services and resulted in annual operational savings of approximately \$85,000.

In addition to connectivity, the network also plays a key role in protecting the City's Information Technology infrastructure and the corporate data assets stored within it (Gallery 2). The network's firewall and other protective mechanisms prevent unauthorized access attempts, and its spam filter rejects infected email and spam directed at the organization.

There is a continual focus on security as threats – both internal and external – are becoming increasingly sophisticated and pervasive. Initiatives such as ongoing cyber-threat awareness campaigns to help staff become more knowledgeable and mindful users, implementation of next generation virus protection and firewalls, continual refinement of security configurations to mitigate risks from all sources, vulnerability assessments and health checks, and enhanced and more granular monitoring of network activity ensure a proactive approach to protecting City information and assets.

CAPITAL FUND – 2025 Capital Projects

Department Project	GG General Government 44007600 Information Technology Infrastructure Renewal	Division	Information Technology
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Printer and Multifunction Devices

The City maintains a fleet of printers and multifunction devices to meet the printing, scanning, and copying requirements of stakeholders. This project will continue the organization’s incremental approach to implementing and maintaining multifunction devices throughout the organization so that these requirements can be met in the most cost-effective manner possible.

The City fleet consists of tiers of devices and all acquisitions are selected from one of these tiers to minimize the variety of devices installed throughout the organization, streamline consumables management, and reduce costs. Where appropriate, devices are reallocated throughout their lifespan in order to maximize their utility. Also, the organization is continually looking for ways to reduce the amount of printing.

Client (Staff) Hardware

This allocation will be used to renew and augment all client facing hardware components that require regular replacement in accordance with the City’s Information Technology Evergreen strategy. This includes widely deployed elements like workstations, laptops, tablets, cell phones, desk phones, monitors, and portable radios. As new staff are brought on board, new hardware adds to the growing inventory of computer equipment that must be supported. New operating systems (Windows 11) and office productivity software (M365) increase the need for more robust hardware to meet the requirement for more memory and processing power.

Operational Impact

City service delivery relies on its Information Technology infrastructure. When any component is out of service, or not operating to specification, it will interrupt service delivery and reduce productivity.

Servers and Storage

When servers are appropriately matched to the work that needs to be done and sufficient disk space is available, services can be delivered more reliably and at a lower cost than when resources must be constantly manipulated and reallocated, often in response to failures. Without adequate investment, the organization will not be able to meet escalating server requirements or acquire much-needed additional storage, memory and processing capacity. In the short-term, this will negatively impact overall infrastructure performance and thus degrade service delivery to both internal and external clients, and over time it will lead to more frequent system outages and necessitate increased support efforts and costs. Data storage devices (SAN) are crucial for the storage of data and backups to enable quick recovery of services and information in the event of a catastrophic event.



CAPITAL FUND – 2025 Capital Projects

Department Project	GG General Government 44007600 Information Technology Infrastructure Renewal	Division	Information Technology
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Network

The City's network is vital to its operations and even short service interruptions have significant impacts on service delivery and employee productivity. It will be more cost effective – and present a lower risk to the City – to replace and enhance this equipment in a planned and orderly fashion rather than to experience problems that require excessive troubleshooting and repair or failures that create service outages. Lack of appropriately scaled and timed investment will negatively impact on the City's ability to sustain its network and will put the organization at risk of a long term outage while replacement equipment is sourced. Over time, there may be increasingly frequent service disruptions when equipment fails. These failures will interrupt many aspects of City operations, and potentially jeopardize the health and safety of staff, citizens, and visitors.

Printers and Multifunction Devices

Many printing and copying tasks are time sensitive and must be done within legislated timeframes. If the printer and multifunction device fleet is not properly maintained, outages will affect the organization's ability to deliver services.

Client Hardware

Staff all across the organization rely on technology to complete their work and deliver programs and services. Appropriately maintaining client facing hardware components minimizes downtime and enables effective services for both staff and stakeholders. This will reduce troubleshooting and support efforts as replacements are completed in a planned and scheduled manner to minimize operational impact.

CAPITAL FUND – 2025 Capital Projects

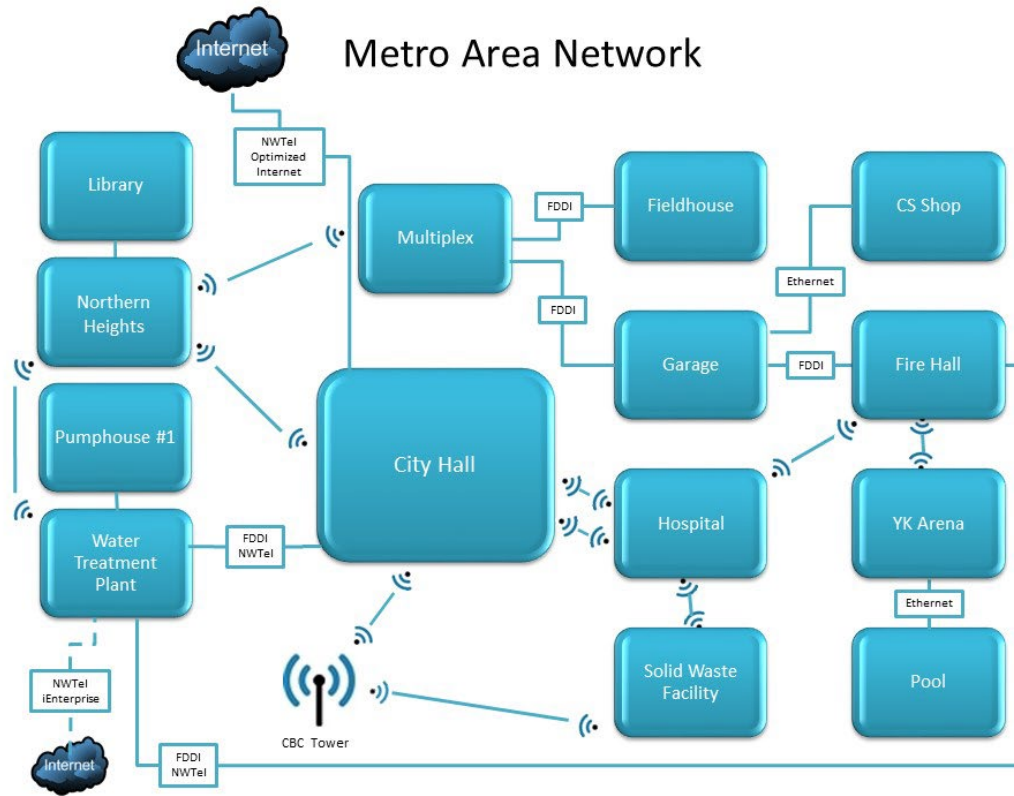
Department Project

GG General Government
44007600 Information Technology
Infrastructure Renewal

Division

Information Technology

Gallery



Gallery 1: Metro Area Network



Department Project

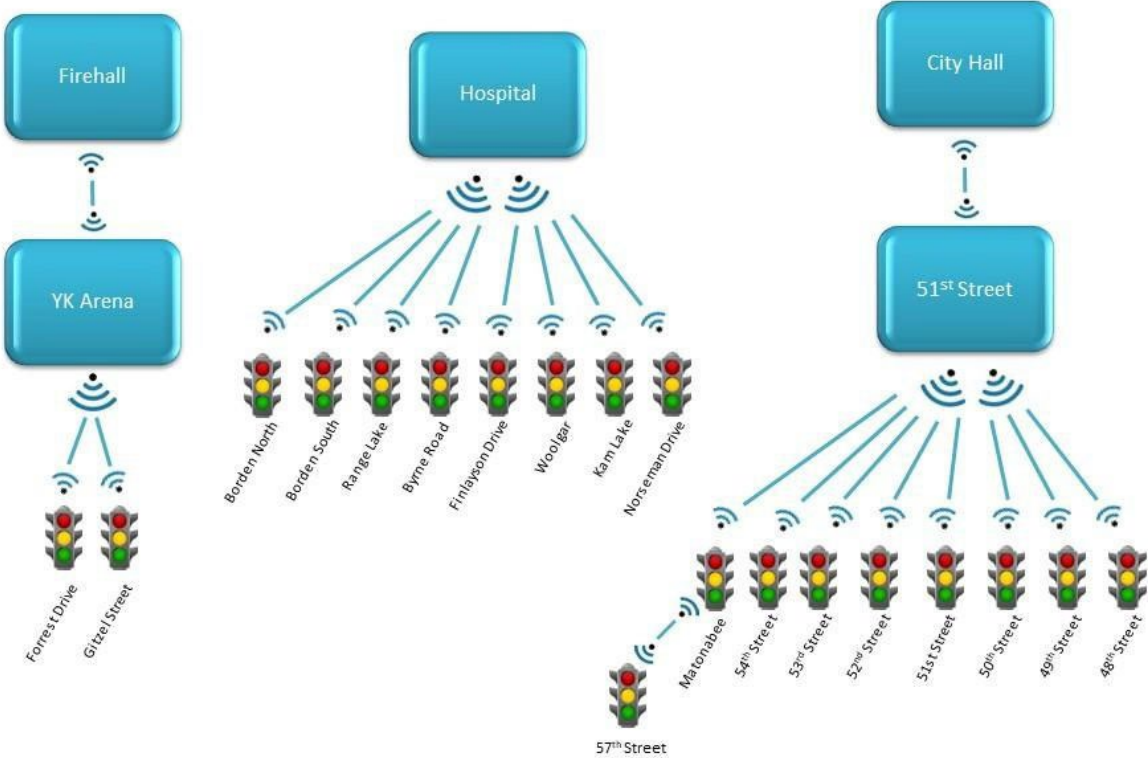
GG General Government
44007600 Information Technology
Infrastructure Renewal

Division

Information Technology

Gallery

Traffic Light Network



Gallery 2: Traffic Light Network

CAPITAL FUND – 2025 Capital Projects

Department Project

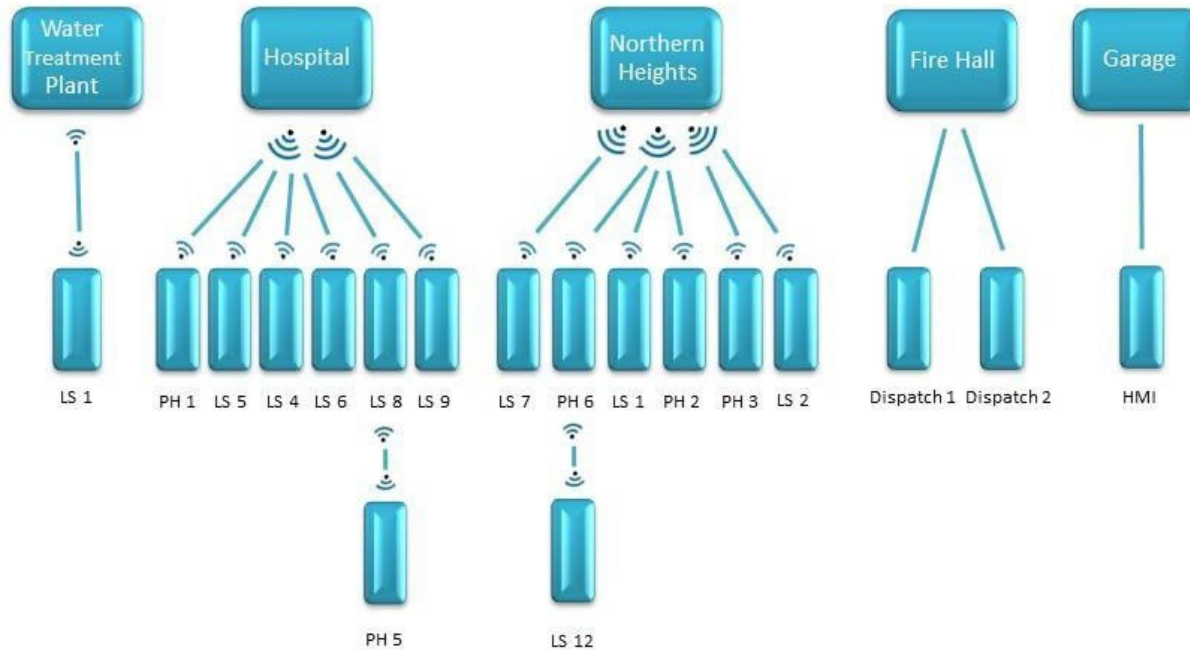
GG General Government
44007600 Information Technology
Infrastructure Renewal

Division

Information Technology

Gallery

SCADA Network



Gallery 3: SCADA Network



CAPITAL FUND – 2025 Capital Projects

Department Project PW Public Works & Engineering
93106270 Lift Station #1 Replacement

Division Water & Sewer

Budget			
	2025	2026	2027
	\$	\$	\$
Expenditures	15,900,000	23,500,000	2,600,000
Funding			
Formula Funding	3,494,759	21,122,388	
Canada Community-Building Fund	3,667,871		39,750
Other Grants	5,553,807		
User Fees	4,183,563	2,377,612	2,560,250
<i>Total Funding</i>	15,900,000	23,500,000	200,000

Purpose

To design and construct a new lift station on the corner of Franklin Avenue and School Draw Avenue to replace existing Lift Station #1.

Project Details

Lift Station #1 (LS1), constructed in 1967, is the oldest of 14 lift stations in the City of Yellowknife (City). The lift station is located near the intersection of School Draw Avenue and Franklin Avenue. The station's catchment area in 1967 consisted of the downtown area and areas east of downtown. Lift Station #7 (LS7) was constructed in 1984 to serve the downtown area, thereby reducing the catchment area for LS1 to the areas east of downtown. LS1 also receives septage hauling from Old Town, Latham Island, and N'Dilo. The station originally pumped to a lagoon at Niven Lake but was redirected in 1981 to discharge into the gravity collection system for Lift Station 5 (LS5) through a common forcemain with LS7. LS5 pumps to the Yellowknife Lagoon.

A condition assessment completed in 2019 recommended a complete replacement of the asset that is over 50 years old. This approach will allow the existing lift station to continue to operate while the new construction occurs, with the existing LS1 being decommissioned once the new lift station is operational. In addition, this approach also allows the City to redesign the entire area for functionality given the multiple uses that occur on site.

It was also determined that the recent addition of several multi-family developments in the LS1 catchment area have increased the demand on LS1, making the project an essential asset replacement.

CAPITAL FUND – 2025 Capital Projects

Department PW Public Works & Engineering
Project 93106270 Lift Station #1 Replacement

Division Water & Sewer

The design of LS1 was completed in 2024 and subsequently tendered. Bids for this project came in significantly higher than the estimate provided by the Consultant. The estimate for the project was \$15M, and bids came in over \$40M. Discussions with the consultant indicated similar projects in other areas were also coming in significantly higher than expected.

The City is currently looking into federal funding that can be used for this project in order to minimize the overall impact on the capital budget.

Operational Impact

The anticipated impact to O&M budgets is expected to be minimal as it is a replacement project. However, energy savings and efficiencies are anticipated with modernized infrastructure.



CAPITAL FUND – 2025 Capital Projects

Department Project PW Public Works & Engineering
80036570 New Landfill / Landfill Expansion

Division Solid Waste

Budget			
	2025	2026	2027
	\$	\$	\$
Expenditures	4,500,000	100,000	
Funding			
Canada Community-Building Fund	902,500		
Other Grants	2,017,500		
Community Public Infrastructure Funding	1,580,000	100,000	
Total Funding	4,500,000	100,000	

Purpose

To design and construct a second-generation landfill cell (cell 3) at the Solid Waste Facility to accommodate for the city's future waste.

Project Details

In 2011, the first second-generation landfill cell was built in the quarry adjacent to the old landfill site at the Solid Waste Facility (SWF). The cell includes a leachate collection system which consists of a liner system overlaid with collection pipes which direct liquids to a sump pit located in a maintenance hole. It was anticipated that the cell would hold approximately five years' worth of baled waste. The design and construction of the cell took close to two years to complete due to the unique circumstances around building a landfill in an active quarry. A second cell was built in 2016 adjacent to the first with an anticipated lifespan of seven years.

The third cell (cell 3) is now needed to ensure that the City of Yellowknife has sufficient space to accommodate future waste. Recent analysis of airspace and elevation anticipates that the existing Municipal Solid Waste (MSW) cells will be fully depleted in early 2027. Lateral expansion into cell C will need to occur before this deadline in order to optimize operations.

The City has been working on a sequencing plan that will guide planning and operations until the closure of the MSW cells. This work included the design for cell 3, including preparation of the site where the cell will be constructed. The 2025 Budget allocation is for the construction of cell 3 and includes, but is not limited to, rock blasting and removal, drainage and road work, liner installation, and leachate collection system installation.

CAPITAL FUND – 2025 Capital Projects

Department Project	PW Public Works & Engineering 80036570 New Landfill / Landfill Expansion	Division	Solid Waste
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Water Licence Requirements

There are two (2) areas of the City's Water Licence that this project falls under:

- Revision of SWF Management and Operation & Maintenance Plan; and
- Construction of a new facility to hold waste.

The requirement to update SWF Management and Operation and Maintenance Plans ensures that any operational changes due to the construction of cell 3 are captured in the appropriate documents. The revised Plans are then submitted, reviewed and approved, a process which can take up to six (6) months.

The Construction section, Schedule 2, item 1 of the Water Licence, that the construction of a new landfill cell falls under, requires the submission of a Design and Construction Plan, as well as Design Drawings a minimum of 90 days prior to the commencement of construction. It is anticipated that the submission of this plan will occur in December 2024, prior to tendering of the construction contract.

Operational Impact

The design and construction of cell 3 works toward proactive planning of how airspace for MSW is to be managed on site. The design and ultimate construction allow for better strategy as to how material is handled and processed resulting in a more effective use of operational budgets.



CAPITAL FUND – 2025 Capital Projects

Department Project CS Community Services
FC0032 Outdoor Recreation

Division Parks & Trails

Budget			
	2025	2026	2027
	\$	\$	\$
Expenditures	233,000	200,000	
Funding			
Other Grants		80,000	
Community Public Infrastructure Funding	233,000	120,000	
<i>Total Funding</i>	233,000	200,000	

Purpose	Description
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Outdoor recreation projects will see the installation of equipment and materials to ensure that the City's parks are maintained to a high standard of safety, demonstrate effective and efficient use of resources and provide the community with a variety of activities to promote and enhance a healthy and active lifestyle.

Project Details

In 2025 it is proposed that green space adjacent to the Fritz Theil ball diamonds be upgraded to a standard such that the field can be added to the inventory of rentable spaces for the community. Specifically, the turf will be improved with the addition of topsoil to allow for proper grading to ensure drainage; safety concerns will be addressed to eliminate rutting and pot holes; irrigation will be installed to ensure the field is maintained in an efficient and effective manner; and, soccer goals and netting will be installed.

The popularity of soccer is surging in Canada and Yellowknife is no exception. Currently the City has two fields that are available for the public and organizations to rent. The field adjacent to St. Joseph school is owned and maintained by the City. This provides the City will full control of maintenance and bookings. The other field located at Range Lake North Field is owned by the School District, maintained and rented for use by the City under a Joint Use Agreement. The popularity of soccer is detrimental to the turf due to high use and a short growing season. Once the snow is off the fields there is a high demand for both casual and rentable time. On the City owned field access is easier to control compared to the field owned by the School District. This causes an ongoing maintenance issue detrimental to quality turf.

By improving the field at Fritz Theil, the City will be adding an additional field for the seasonal rental period which will assist in alleviating ongoing maintenance issues and spread the use around to three fields.

CAPITAL FUND – 2025 Capital Projects

Department CS Community Services
Project FC0032 Outdoor Recreation

Division Parks & Trails

Operational Impact

There will be additional staff time required to maintain the field to a standard such that it remains in a safe and usable condition throughout the spring and summer season. The addition of an irrigation system will ensure that operations are carried out effectively.

There will be a positive effect to the park's revenue stream due to additional rentals on the field.



CAPITAL FUND – 2025 Capital Projects

Department CS Community Services
Project 53116570 Park Equipment Replacement

Division Parks & Trails

Operational Impact

There will be little O&M impact as this is a refurbishment and replacement project for existing equipment.



CAPITAL FUND – 2025 Capital Projects

Department Project PW Public Works & Engineering
 RS0003 Patching Program

Division Roads & Sidewalks

Budget			
	2025	2026	2027
	\$	\$	\$
Expenditures	348,649	359,108	369,882
Funding			
Formula Funding	348,649	359,108	369,882
<i>Total Funding</i>	348,649	359,108	369,882

Purpose	Description
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To maintain serviceability standards of city streets and sidewalks.

Project Details

The annual patching program identifies and repairs sections of road and sidewalks to extend the life expectancy of the street and ensure it maintains adequate serviceability standards.

Often the serviceability and life expectancy of a street can be greatly improved by fixing small, localized issues as they arise and before they become too problematic.

Work completed under the annual patching program includes:

- Pavement Patches,
- Curb and Sidewalk replacement,
- Asphalt Overlays, and
- Catch Basin and Manhole Adjustments.

Operational Impact

Repairing sections of road and sidewalks reduces ongoing operational maintenance costs.

CAPITAL FUND – 2025 Capital Projects

Department Project PW Public Works & Engineering
76156570 Paving Program

Division Roads & Sidewalks

		Budget		
		2025	2026	2027
		\$	\$	\$
Expenditures		200,000	5,250,000	150,000
Funding				
Canada Community-Building Fund		200,000	5,250,000	150,000
<i>Total Funding</i>		200,000	5,250,000	150,000

Purpose

To repair or replace asphalt, concrete and other appurtenances on city streets as required, including storm water infrastructure. This project also installs concrete, asphalt and landscaping (if specified) on newly developed streets in the city.

Project Details

The typical design life of pavement is generally between 20 and 25 years, but it will vary significantly due to factors such as traffic volumes, vehicle types, geotechnical conditions, construction practices, and adequate maintenance.

The construction of new roads generally coincides with the development of new subdivisions. Otherwise, a road is scheduled for reconstruction when it is in poor condition and may be a danger to the public, or when maintenance and repairs are no longer cost-effective.

As streets are reconstructed, the City of Yellowknife works with Northland Utilities Ltd. (Northland) to ensure that street lighting levels are evaluated. Also included in the paving program is coordination with Northland, NorthwesTel Inc. and NorthwesTel Cable Inc. to determine if replacement or addition of underground duct work for power and communication infrastructure is required.

Considerations when determining areas of reconstruction include:

- Condition and age of asset,
- Recurring maintenance costs,
- Priority level of roadway,
- Number of impacted residents, and
- Underground infrastructure requirements.



CAPITAL FUND – 2025 Capital Projects

Department Project PW Public Works & Engineering
76156570 Paving Program

Division Roads & Sidewalks

Tentative Paving Plan is moving to an alternating schedule with water and sewer infrastructure replacement occurring one year and paving activities the next. 2025 and 2027 will focus on design work, with 2026 currently planning for the reconstruction of Franklin Avenue between 44 Street and 41 Street (Franklin Hill).

Operational Impact

Aging infrastructure has an operational cost of between two and four percent of replacement costs. Replacing this infrastructure will allow the department to focus operational and maintenance activities on other roads, sidewalks and storm water appurtenances in the city.

CAPITAL FUND – 2025 Capital Projects

Department Project PW Public Works & Engineering
WS0022 Stormwater Receiving Environment Study

Division Water & Sewer

Budget			
	2025	2026	2027
	\$	\$	\$
Expenditures	50,000	200,000	150,000
Funding			
Formula Funding	50,000	200,000	
User Fees			150,000
<i>Total Funding</i>	50,000	200,000	150,000

Purpose

To investigate the receiving water bodies of the City's stormwater, as recommended by the Stormwater Trend Analysis, which forms part of the City's Water Licence requirements.

Project Details

The Stormwater Trend Analysis was completed in 2024 and includes a recommendation to investigate the water bodies receiving stormwater in order to determine the effect of stormwater on the receiving environments.

This project will entail a multi-year investigation of the impact of stormwater on the receiving water bodies. This includes sampling of multiple lakes including, but not limited to Great Slave Lake (Yellowknife Bay and Back Bay), Grace Lake, and Kam Lake. Multiple sampling locations may be required in each body of water, and they will need to be sampled multiple times each year. The resulting information will then be analyzed in relation to the data from the Stormwater Trend Analysis to determine the impacts of stormwater on the receiving environment. A final report on the data and analysis would then be completed.

Operational Impact

The outcome of the study may result in additional stormwater sampling locations, which will have an impact on staff time and resources.



CAPITAL FUND – 2025 Capital Projects

Department Project PW Public Works & Engineering
73807611 Traffic Light Upgrades

Division Roads & Sidewalks

Budget			
	2025	2026	2027
	\$	\$	\$
Expenditures			
	70,000		
Balancing Difference	95,000	580,000	80,000
<i>Total Expenditures</i>	165,000	580,000	80,000
Funding			
Community Public Infrastructure Funding	165,000	580,000	80,000
<i>Total Funding</i>	165,000	580,000	80,000

Purpose	Description
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To improve traffic lights at signalized intersections by introducing technology that makes the intersections safer for vehicular and pedestrian traffic.

Project Details

There are 19 intersections that rely on traffic lights for reliable vehicular flow, and 10 signalized crosswalks that provide safer pedestrian crossings. With the completion of the installation of traffic cameras at all signalized intersections in 2024, this project will look at additional upgrades to traffic lights and signalized crosswalks to ensure acceptable performance levels.

The project schedule for this project is as follows:
Project Schedule

2025	Replacement of traffic light poles at 52 Street and Franklin Avenue
	Replacement of signalized crosswalks near Ecole St. Joseph School and NJ MacPherson School on range Lake Road
2026	Implementation of AI Systems for traffic light coordination (including upgrades to traffic light components, such as cameras, at multiple intersections)
2027	Annual replacement of traffic light components in alignment with asset management principles

Operational Impact

CAPITAL FUND – 2025 Capital Projects

Department PW Public Works & Engineering
Project 73807611 Traffic Light Upgrades

Division Roads & Sidewalks

Completing upgrades to traffic lights and signalized pedestrian crosswalks on a schedule that aligns with asset management principles will ensure that repairs are being done in a proactive manner.



CAPITAL FUND – 2025 Capital Projects

Department Project PW Public Works & Engineering
PW0002 Transportation Master Plan

Division Directorate & Engineering

Budget			
	2025	2026	2027
	\$	\$	\$
Expenditures	300,000		
Funding			
Formula Funding	300,000		
Total Funding	300,000		

Purpose

To develop a comprehensive transportation planning document that incorporates or ties into other municipal strategies such as the Community Plan.

Project Details

Many municipalities in Canada have developed Transportation Master Plans (TMP) that incorporate several planning initiatives that help inform future development within the municipality and where to focus strategic capital investments.

The City of Yellowknife is seeking to develop a TMP that includes but is not limited to the following:

- Active transportation improvements and future planning of Active Transportation (AT) infrastructure.
- On-going research into public transit improvements.
- Traffic light modernization and optimization.
- Traffic calming methods for various areas of the City.
- Revision of City Standards to incorporate improvements to existing standards.

The City is also conducting a review of the Community Plan concurrently with the TMP. These two plans will be intricately linked and complimentary documents that are essential when planning future growth of Yellowknife.

Operational Impact

The Transportation Master Plan itself will have no direct operational impact. However, any accompanying implementation plans may have both operational and capital cost impacts that will need to be assessed on an individual basis.

CAPITAL FUND – 2025 Capital Projects

Department Project PW Public Works & Engineering
WS0021 Water & sewer Infrastructure Failure and Business Continuity Planning

Division Water & Sewer

Budget			
	2025	2026	2027
	\$	\$	\$
Expenditures	250,000		
Funding			
User Fees	250,000		
<i>Total Funding</i>	250,000		

Description

Purpose

To develop a Business Continuity Plan to ensure essential water and sewer service is available during emergencies.

Project Details

This study will look at the City's water and sewer system to determine points in the system where redundancies, upgrades, and or focused maintenance are required in order to maintain water and sewer service during emergencies.

Over the last few years, the City's water and sewer infrastructure has been taxed when required to provide service during emergencies. This was particularly noticeable during the 2023 wildfires when the draw from sprinkler systems used on the fuel breaks caused pressure and flow issues throughout the city. In order to ensure the City is able to provide adequate water and sewer service during emergencies, the system needs to be reviewed and areas where improvement is required identified.

Operational Impact

Potential operational impacts for this project are unknown. Additional maintenance on some areas of the system may be required.



CAPITAL FUND – 2025 Capital Projects

Department Project PW Public Works & Engineering
96156570 Water & Sewer Infrastructure Replacement

Division Water & Sewer

Budget			
	2025	2026	2027
	\$	\$	\$
Expenditures			
Water and Sewer Upgrades	2,000,000		
Balancing Difference	4,800,000	150,000	3,500,000
<i>Total Expenditures</i>	6,800,000	150,000	3,500,000
Funding			
Canada Community-Building Fund	6,800,000		3,500,000
User Fees		150,000	
<i>Total Funding</i>	6,800,000	150,000	3,500,000

Description

Purpose

To replace failing underground water and/or sewer infrastructure on a planned and prioritized basis to reduce reactive maintenance costs.

Project Details

The City's water and sewer infrastructure requires monitoring and maintenance to ensure the system functions as expected. When maintenance on a section of the infrastructure becomes prohibitive due to numerous failures, it becomes time to upgrade/replace this section.

The materials in use for the water and sewer underground infrastructure can have a lift expectancy of up to 50 years. However, prevailing ground conditions and permafrost presence can impact the life span of any pipe installation.

Considerations when determining areas of reconstruction include:

- Condition and age of asset
- Recurring maintenance costs
- Priority level of roadway
- Number of impacted residents and services

The following are currently included in the annual Water & Sewer Infrastructure Replacement plans:

- Replacement of ductile iron sewer mains in poor condition, with ductile iron pipe
- Replacement of concrete sewer manholes

CAPITAL FUND – 2025 Capital Projects

Department Project	PW Public Works & Engineering 96156570 Water & Sewer Infrastructure Replacement	Division	Water & Sewer
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- Replacement of existing cast iron water mains, and/or insulated ductile iron water mains in poor condition, with appropriately sized insulated ductile iron pipe
- Replacement of in-line hydrants, valves with hydrants, and valves located in insulated concrete vaults with manhole access
- Replacement of individual lot water and sewer services were deemed necessary
- Road stabilization and reconstruction with appropriate methods
- Completion of the project with concrete sidewalks and a paved roadway

The Water and Sewer Infrastructure Replacement Program is moving to an alternating annual schedule with the Paving Program, with water and sewer infrastructure replacement occurring one year and paving activities the next. The 2025 Water and Sewer Infrastructure Replacement Program includes reconstruction of Mandeville Drive and the area near the Racquet Club bordered by 49A Ave, 41 St., 49 Ave, 42 Street and Franklin Avenue.

Operational Impact

Aging infrastructure has an operational cost of between 2% and 4% of replacement costs. Replacing this infrastructure will allow the department to focus operational and maintenance activities in other areas of the water and sewer systems.

This project is consistent with good Asset Management principles.



CAPITAL FUND – 2025 Capital Projects

Department Project PW Public Works & Engineering
96156572 Water & Sewer Replacement – Paving

Division Water & Sewer

Budget			
	2025	2026	2027
	\$	\$	\$
Expenditures	600,000	2,050,000	100,000
Funding			
Formula Funding		2,050,000	2,000
Canada Community-Building Fund	600,000		
Community Public Infrastructure Funding			98,000
<i>Total Funding</i>	600,000	2,050,000	100,000

Purpose

To replace asphalt, concrete and other appurtenances on city streets following upgrades to underground water, sewer and storm infrastructure.

Project Details

This project restores streets following water and sewer infrastructure upgrades. As part of this work, an evaluation of the street is done against current City Standards to determine if upgrades, such as addition of curb and gutter, sidewalk, or multi-use trail, are appropriate.

This work coincides with work completed under the Annual Paving Program to best utilize consultants and contractors.

Operational Impact

Restoration of roadways following water and sewer upgrades provides improved roadways and allows the department to focus operational and maintenance activities on other roadways.

CAPITAL FUND – 2025 Capital Projects

Department Project PW Public Works & Engineering
80126571 Water Licence Projects – Solid Waste Management

Division Solid Waste

Budget			
	2025	2026	2027
	\$	\$	\$
Expenditures			
Hydrogeological Study & Groundwater Trend Analysis	150,000	100,000	150,000
Landfill Gas Assessment	75,000	50,000	25,000
<i>Total Expenditures</i>	225,000	150,000	175,000
Funding			
User Fees	225,000	150,000	175,000
<i>Total Funding</i>	225,000	150,000	175,000

Purpose Description

To meet the requirements for studies and management plans for the Solid Waste Facility as prescribed in the City's new water licence issued May 31, 2022.

Background

The City's new water licence requires numerous studies and management plans to be completed. Two items that relate to the Solid Waste Facility (SWF) are the Hydrogeological Study and Groundwater Trend Analysis and the Landfill Gas Assessment.

Each of these items are multi-year projects due to the data that must be gathered and analyzed.

Hydrogeological Study and Groundwater Trend Analysis

Schedule 3 Item 10 of the new water licence itemizes the requirements of the Groundwater Monitoring Plan for the SWF, which is to be submitted to the Water Board by March 31, 2027. Item 10e) refers to the completion of a hydrogeological study, and item 10f) refers to the Groundwater Trendline Analysis Report.

- e) Completion of a Hydrogeological Study of the existing and planned extent of the SWDF (Solid Waste Disposal Facility):
 - i. Supporting information for items a) and c) I, ii, iii, iv above; [Item a refers to groundwater conditions, and item c refers to the groundwater monitoring program]
 - ii. Response to recommendations included in the Study, including timelines for actions and rationale;
 - iii. Based on the outcomes of the SWDF Drainage Study, an evaluation of any resulting impacts to the Hydrogeological Study design; and



CAPITAL FUND – 2025 Capital Projects

Department Project PW Public Works & Engineering
80126571 Water Licence Projects – Solid Waste Management

Division Solid Waste

- iv. A description of how the recommendations from the Study have been implemented and how they influence the Design, Operations and Closure Plan for the SWDF and the Groundwater Monitoring Plan.
- f) Completion of a **Groundwater Trendline Analysis Report:**
 - i. Supporting information for item b) (I, ii, iii) and d)(i) above;
 - ii. Site specific groundwater criteria and Action Levels with rationale;
 - iii. Establish where the site-specific groundwater criteria will be met;
 - iv. Explain how background conditions will be considered;
 - v. Plans for obtaining and using nearby regional data from other sources;
 - vi. Tabular summaries (including Excel format) of all data and information generated under the Groundwater Monitoring Plan;
 - vii. Identification of POPC, with rationale;
 - viii. Temporal plots for POPC and a summary of findings and trends;
 - ix. Determine, provide rationale for, and use a conversion factor for total and dissolved metals; and
 - x. A description of how the recommendations from the Study have been implemented, and how they influence the Design, Operations and Closure Plan for the SWDF and the Groundwater Monitoring Plan.

As each of the items listed above will require extensive annual sampling and analysis of sampling results, the project is expected to span three years. At the end of the project, the annual sampling program for groundwater will be updated, which may require an increase in the annual operational budget for sampling.

Landfill Gas Assessment

Schedule 3 Item 12 of the new water licence requires the completion of a Landfill Gas Assessment, which is to be submitted by March 31, 2027. Specifically, the Licence requires:

- 12. The **Landfill Gas Assessment** referred to in Part F, Condition LANDFILL GAS ASSESSMENT shall include but not be limited to:
 - i. A Report on the methodology and findings of the Landfill Gas Assessment;
 - ii. A summary of how the recommendations from the Landfill Gas Assessment will be incorporated into the SWDF Design, Operations and Closure Plan, including relevant timelines, and if not, rationale for not incorporating recommendations.

It is anticipated that the Landfill Gas Assessment will be completed over multiple years in order to follow industry standards for Landfill Gas Assessments and meet the requirements of the water licence.

The results of the Landfill Gas Assessment are likely to cause an increase in operational budget and monitoring requirements during and post closure of areas of the landfill.

CAPITAL FUND – 2025 Capital Projects

Department	PW Public Works & Engineering	Division	Solid Waste
Project	80126571 Water Licence Projects – Solid Waste Management		

Operational Impact

These projects will require City Staff to follow up with and implement the recommendations from the various studies. These recommendations may result in further regulatory requirements that require additional resources such as staff, equipment, and funding.



CAPITAL FUND – 2025 Capital Projects

Department PW Public Works & Engineering
Project WS0018 Wetland Delineation & Great Slave Lake (GSL) Monitoring
Division Water & Sewer

Budget			
2025			
2026			
2027			
\$			
Expenditures	250,000	300,000	315,000
Funding			
Canada Community-Building Fund	50,000		236,250
User Fees	200,000	300,000	78,750
<i>Total Funding</i>	250,000	300,000	315,000

Purpose

To meet the requirements for studies and management plans as set out in the City’s new Water Licence that was issued on May 31, 2022.

Background

The City’s new Water Licence requires numerous studies and plans to be completed prior to the expiry of the licence on May 30, 2037. The Wetland Delineation Study Report and Great Slave Lake Monitoring Program are two projects that are interconnected. The Wetland Delineation was completed between 2022 and 2024 to determine whether there were any additional flow paths between the wetlands the City’s sewage effluent travels through and Great Slave Lake. The results of this study are then fed into the Great Slave Lake Monitoring Program.

The Great Slave Lake Monitoring Program consists of three main activities:

1. Investigation of the effluent plume extents in Great Slave Lake,
2. Design of the Monitoring Plan, and
3. Implementation of the Monitoring Plan and Reporting.

The City is current completing the first activity, investigation of the effluent plume, in order to determine how best to meet the requirements of the Great Slave Lake Monitoring Program Design Plan, the requirements of which are outlined in Schedule 3, Part F, Item 3, of the Water Licence and are shown below.

CAPITAL FUND – 2025 Capital Projects

Department PW Public Works & Engineering
Project WS0018 Wetland Delineation & Great Slave Lake (GSL)
Monitoring

Division Water & Sewer

Great Slave Lake Monitoring Program Design Plan:

- a) Objectives and purpose of the Great Slave Lake Monitoring Program;
 - i. A summary of previous monitoring and how it informed the revised design plan;
 - ii. Details of the sampling design, including a description of the areas to be monitored;
 - iii. Maps showing all proposed sampling locations; and
- b) Rationale for locations, including:
 - i. how reference locations were selected;
 - ii. information from the Wetland Delineation Study such as outflow location(s) to Great Slave Lake; and
 - iii. spatial extent compared to zone of influence from Fiddler's Lake Treatment System (FLTS) effluent.
- c) A summary of how the proposed study addresses the recommendations from past monitoring program(s);
- d) A description of the sampling and analysis to be conducted:
 - i. Field measurements;
 - ii. Analytical parameters;
 - iii. Sample media;
 - iv. Sampling methods; and
 - v. Quality assurance and quality control procedures.
- e) A description of procedures to analyze and interpret data collected; and
- f) A description of how the Great Slave Lake Monitoring Program will be incorporated into the Surveillance Network Program annexed to this Licence.
- g) Once the Monitoring Program Design is approved, it will then be implemented in order to meet the requirements of Schedule 3, Part F, Item 6i), Great Slave Lake Monitoring Program Report, which is part of the Fiddler's Lake Adaptive Management Plan.
- h) The Great Slave Lake Monitoring Plan Report as outlined in the Water Licence, requires the following:
 - i. Great Slave Lake Monitoring Program Report
 - ii. A summary of activities conducted under the Great Slave Lake Monitoring Program from the preceding three years of monitoring;
 - iii. A plain language summary and interpretation of major results;
 - iv. An accurate description of the monitoring locations and any SNP station used for evaluation of data;
 - v. Tabular summaries of all data (including Excel format) and information generated under the Great Slave Lake Monitoring Program;
 - vi. An interpretation of the results, including an evaluation of spatial effects in Great Slave Lake from the Fiddler's Lake Treatment System;
 - vii. Data for reference area(s) in Great Slave Lake that are not influenced by effluent from the Fiddler's Lake Treatment System, with rationale for their locations;
 - viii. A comparison of results to action levels as defined in the Fiddler's Lake Treatment System Adaptive Management Plan;
 - ix. Recommendations, with rationale, for changes to the Great Slave Lake Monitoring Program; and
 - x. Any other information specified in the approved Great Slave Lake Monitoring Program Design Plan.



CAPITAL FUND – 2025 Capital Projects

Department PW Public Works & Engineering
Project WS0018 Wetland Delineation & Great Slave Lake (GSL)
Monitoring

Division Water & Sewer

This is a multi-year project requiring a significant amount of work to collect the necessary data to meet the requirements of the City's Water Licence.

Operational Impact

The operational impact is currently unknown and will depend heavily on the recommendations outlined in the two studies. These recommendations may include additional equipment, additional sampling requirements, and increased in annual operating costs.

CAPITAL FUND – 2025 Capital Projects

Department Project PW Public Works & Engineering
WS0019 WTP Flocculant Study & Work

Division Water & Sewer

Budget			
	2025	2026	2027
	\$	\$	\$
Expenditures	50,000		
Funding			
User Fees	50,000		
Total Funding	50,000		

Purpose

To meet the requirements for studies and management plans as set out in the City’s new water licence that was issued on May 31, 2022.

Project Details

The City’s new water licence requires numerous studies and plans to be completed prior to the expiry of the licence on May 30, 2037. The Flocculant Optimization Study is due to be submitted to the Land and Water Board on October 1, 2025.

Schedule 3 condition 13(j) of the new water licence outlines the requirements of the Flocculant Optimization Study.

- j) Results and recommendations of a Flocculant Optimization Study, including but not limited to:
 - i. Clarification of current treatment products, frequency of dosing, and waste residuals;
 - ii. Strategies to reduce need for aluminum-based coagulant based on the results of the Flocculant Optimization Study;
 - iii. Information on alternate flocculants to generate a better-quality sludge;
 - iv. Current and planned use of aluminum-based or other coagulants at the Water Treatment Plant; v. Recommendations for Water Treatment Plant residual management, including optimizing solids content in thickened sludge, and waste minimization methods in accordance with the Board’s Water and Effluent Quality Management Policy (2011); and
 - v. Responses to recommendations made and timelines for implementation.

Operational Impact

The operational impact is currently unknown and will depend heavily on the recommendations outlined in the study.

