

Town of Watson Lake

Infrastructure Condition & Capital Planning Report



April 2026





Executive Summary

This document was prepared by the Infrastructure Development Branch (IDB) within the Department of Community Services, in partnership with the Town of Watson Lake (TOWL) and it provides an overview of the town's fixed municipal infrastructure, assessing the condition of major assets and identifying the investments required to ensure long term service reliability. This report is not intended to be an asset management plan, but instead a summary condition assessment and outlines priority upgrades across three planning horizons: short term (0–5 years), medium term (5–10 years), and long term (10–20 years). It is meant to provide an overview for planning purposes, and should be revisited every 3–5 years.

The assessment evaluates the town's core infrastructure systems including water treatment & distribution, wastewater collection and treatment, and the community's road network. Other infrastructure like the Solid Waste Management Facility has not been assessed as it is in good condition. At the same time, the Town's vertical infrastructure such as recreation facilities, administrative buildings, protective services buildings, and other municipal structures also plays a critical role in supporting community services and operational capacity. Together, these horizontal and vertical assets create the integrated system that enables the Town of Watson Lake to function effectively, respond to community needs, and sustain future growth.

The purpose of this document is to:

- Support decision making by providing clear, data driven insights into infrastructure needs.
- Identify critical risks and service vulnerabilities, including aging assets, capacity limitations, and potential points of system failure.
- Guide long term planning, ensuring the Town is strategically positioned to pursue and secure external funding opportunities.
- Strengthen service reliability, public safety, and operational resilience by prioritizing investments that reduce risk and extend asset life cycles.

Key findings from the assessment include:

- Several core municipal assets are approaching or beyond their expected service life, resulting in deteriorating performance and increased maintenance requirements.
- Investment is required to upgrade water, sewer, and road infrastructure to prevent service disruptions and address existing deficiencies.
- Over the next two decades, substantial capital funding will be necessary to replace aging infrastructure, modernize essential systems, and maintain service levels that meet community needs.

Overall, the assessment highlights the importance of proactive planning and sustained investment to ensure Watson Lake's infrastructure remains safe, reliable, and capable of supporting future growth.



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1. Community Overview

Watson Lake, with a population of 1,513 (Yukon Bureau of Statistics, 2024), is a small but strategically significant community in southeastern Yukon. It is the traditional territory and home of the Liard First Nation and serves as a central gathering point for the broader Kaska Dena people across both the Yukon and northern British Columbia.

The community plays an essential role in supporting territorial government operations, providing access to health, education, and administrative services for surrounding rural and Indigenous communities. Watson Lake is also a key waypoint for travelers entering the Yukon, contributing to a steady flow of tourism that supports local businesses and cultural programming.

2. Recent Infrastructure Projects

Over the past ten years there have been several upgrades to critical infrastructure within the community of Watson Lake. Funding has come from several different funds including Building Canada Fund (BCF), Clean Water and Wastewater Fund (CWWF), Small Community Fund (SCF), and Investing in Canada Infrastructure Program (ICIP). Recently completed projects within the past ten years include:

- Watson Lake Reservoir – construction of a new reservoir and upgrades to the old reservoir (CWWF)
- Watson Lake Wet Well and Lift Station Improvements – new construction to replace aging infrastructure (CWWF)
- Watson Lake Water Treatment Facility – new construction (BCF)
- Phase 1A – Water, Sewer and Road Upgrades (ICIP)
- Firehall and Public Works Building (SCF)
- Watson Lake Administration Building Retrofit (SCF)
- Liard Avenue Lift Station (ICIP)

3. Current Infrastructure Projects

Several projects are either currently being tendered or under contract to upgrade several buildings within the municipality. Table 1 summarizes those projects and their funding sources.

Table 1: Summary of current building upgrades

Asset	Asset Type	Funding Source	Approximate Contract Value
Water Treatment Plant – Generator Vapourizer	Utilities	TOWL	\$40,000
Water Treatment Plant – SCADA	Utilities	TOWL	\$170,000
Municipal Buildings HVAC Upgrades	Administration	ICIP	\$2,040,000
Recreation Centre – Boilers	Parks & Recreation	TOWL	\$500,000
Total			\$2,750,000

4. Capital Assets Inventory

The Town of Watson Lake owns more than \$200 million in built infrastructure, along with a range of natural assets that support municipal service delivery. A review of asset condition, service capacity, and long term sustainability indicates significant deficiencies in several service areas, particularly Recreation, Public Works, and Roads, which show poor average condition ratings. These deficiencies increase risks related to service interruptions, safety, and operational efficiency. Table 2 summarizes the overall condition of each asset group, the risk of failure and the priority of upgrades to the TOWL.

Table 2: Summary of Built Assets, Condition, and Risk Assessment

Asset	Overall Condition	Risk Assessment	Priority
Administration	Good	Medium	Low
District Heat	Good	Low	Low
Parks & Recreation	Poor	Low	Medium–High
Protective Services	Good	High	Low
Public Works & Roads	Fair–Poor	High	Medium–High

Asset condition and risk ratings are based on the Town's 2019 Asset Management Plan, updated with recent assessments completed by the Town and the Yukon Government Infrastructure Development Branch (IDB). Prioritization reflects condition, health and safety risk, and service reliability.

5. Recent Infrastructure Assessments, Data Gap, Capital Needs and Cost Projections

Over the past five years, IDB has completed multiple assessments of key municipal infrastructure. These assessments range from renovation requirements to full asset replacement. Table 3 summarizes the recent evaluations and cost estimates, adjusted to 2026 dollars.

Table 3: Recently Assessed Infrastructure – Buildings

Asset	Asset Type	Funding Source	2026 Adjusted Cost Estimate
Recreation Centre Renovation	Parks & Recreation	TBD	\$47,000,000
Recreation Centre – Replace Exterior Cladding and Insulation	Parks & Recreation	TBD	\$11,600,000
Administration Building – Boiler Replacement	Administration	TBD	\$410,000
Ski Chalet Upgrades	Parks & Recreation	TBD	\$3,700,000
Northern Lights Centre – Boilers and HVAC Upgrades	Parks & Recreation	TBD	1,200,000
Total Estimated Cost:			\$63.9 million

Data gap and additional infrastructure requiring assessment includes:

- Recreation Centre Back-Up Generator: Feasibility Study for emergency preparedness.
- Water Recirculation Vault: Condition Assessment.
- Municipal Services Building – Apron Repair: Further investigation required to determine scope and cost.
- Watson Lake Lagoon – Gravity Drainage System: Approximately 1.5 km of gravity sewer requires assessment due to suspected blockage.
- Water Well Tie In: Once drilling and water quality testing are complete, engineering work is required to integrate the new well into the existing water treatment system.

IDB has previously engaged WSP in 2021 to prepare a condition assessment and Class D estimate for the replacement of most water and sewer lines and the resurfacing of roads throughout Watson Lake. Due to the age, depth of installation and construction materials used, most of the water and sewer lines have reached or approaching the end of the service life and WSP recommended replacement. Costs have been escalated to 2026 values using a 4% annual inflation factor and are summarized in Table 4.

Table 4: Core Infrastructure (Water, Wastewater & Roads)

Asset Area	2026 Cost Estimate	Funding Secured	Timeline
Stage 1B	\$11,700,000	No	0-5 years
Stage 1C	\$11,600,000	ICIP	0-5 years
Water Well	TBD	TOWL - CCBF	0-5 years
Stage 1D	\$8,200,000	No	0-5 years
Stage 2	\$25,100,000	No	5-10 years
Forcemain	\$5,000,000	No	5-10 years
Stage 3	\$10,700,000	No	10+ years
Stage 4	\$20,500,000	No	10+ years
Stage 5	\$10,400,000	No	10+ years
Total Estimated Cost:			\$103.2 million

6. Anticipated Timelines for Infrastructure Upgrades and Required Capital Investments

The infrastructure projects have been priorities based on condition assessment and risk to the community if the asset were to fail. Based on these criteria and communication with the TOWL, the following timelines for replacement/upgrades are summarized into short-, medium- and long-term below. Note that these timelines may shift due to funding considerations.

Short Term (0–5 Years)

Focus: Risk mitigation and stabilization of essential services.	
Complete Stage 1B, 1C, and 1D upgrades to water, sewer, and road systems	\$31.5M
Drill and integrate new drinking water well into water treatment facility (TBD).	TBD
Recreation Center Boilers and Exterior Cladding	\$12.1M
Administration Building Boilers	\$400,000
Total Estimated Cost:	\$44.1M

Medium Term (5–10 Years)

Focus: Maintaining service continuity and upgrading critical assets.	
Replace wastewater forcemain	\$5M
Complete Stage 2 water, sewer, and road upgrades	\$25.1M
Ski Chalet Upgrades	\$3.7M
Northern Lights Centre Upgrades of Boilers and HVAC	\$1.2M
Total Estimated Cost:	\$35.0M

Long Term (10+ Years)

Focus: Long range renewal of core municipal systems and recreation facilities.	
Complete Stages 3–5 of water, sewer, and road upgrades	\$41.6M
Recreation Centre Renovations	\$47M
Total Estimated Cost:	\$88.6 M+

7. Funding Considerations

Securing funding remains a central requirement for advancing the remaining phases of Watson Lake's infrastructure renewal program and recreational facility upgrades. The Town is strongly positioned for future federal and territorial funding opportunities, as most critical technical assessments, feasibility analyses, and preliminary engineering activities have already been completed or will be in the near future. This level of preparedness enables the timely submission of well substantiated, technical, and competitive funding applications as soon as new program intakes are announced.

8. Conclusion

Watson Lake is facing notable infrastructure challenges driven by aging assets, service reliability concerns, and increasing maintenance demands. This document outlines a practical, long term approach to addressing these issues through prioritized investment, risk based decision making, and the strategic pursuit of external, merit based funding.

By planning proactively, the community can improve service delivery, reduce operational and financial risks, and ensure that essential infrastructure continues to meet current and future needs. This approach will help support steady community growth and enhance organizational resilience over time.

Through consistent application of the strategies presented, Watson Lake can strengthen the reliability and performance of its infrastructure while positioning itself for long term stability and success.

9. References

- Associated Engineering, Integrated Asset Management Plan, 2019.
- Associated Engineering, Preliminary Design for Watson Lake Administration Building HVAC System Upgrades, 2023
- Associated Engineering, Municipal Services Building HVAC, 2024
- Associated Engineering, Preliminary Design for Watson Lake Northern Lights Centre HVAC System Upgrades, 2023
- AM2, Municipal Services Building Apron Geotechnical Assessment, 2025
- ELR, Dry Hydrant Feasibility Study, 2024
- M3 Mechanical Consultants, Watson Lake Ski Chalet Condition Assessment & Schematic Design, 2024
- T-Squared Architecture Ltd., Watson Lake Recreation Centre building Condition Assessment, 2023
- Tetra Tech, Watson Lake Municipal Services Building Overhead Doors – Exterior Concrete Apron Frost Heave, 2024
- WSP, Detailed Design Documents, 2023, 2024
- WSP, Forcemain Assessment, 2025
- Yukon Bureau of Statistics, 2024

