FORTFRANCES
BOUNDLESS

LEVELS OF SERVICE FRAMEWORK 2022

TOWN OF FORT FRANCES
ASSET MANAGEMENT

Summary and Recommendations

The purpose of the Levels of Service (LOS) framework is to qualify and quantify the current performance of municipal assets and compare it with the community's expected service levels from those assets. Using this information, the Town of Fort Frances can put in place appropriate plans, processes, resources, and funding to deliver specified LOS to its customers and achieve the overall corporate vision. This activity is a requirement of Ontario Regulation 588/17, section 5: Asset Management Plans, which is discussed further in "Section 2 O.Reg. 588/17".

Defining LOS is a critical component of developing a Strategic Asset Management Program. Adequately specified LOS are thus crucial in the future development of major asset management system aspects such as:

- Asset Management Plan (AMP)
- Risk Management Policies and Tools
- Capital Investment Prioritization and Planning Tools
- Business Case Evaluations
- Allocation of resources, including finances and organizational changes (e.g., workforce levels to satisfy LOS)
- Define the long-term capital maintenance financing requirements.

Service delivery regularly involves a combination of both assets and activities. LOS are determined by what a customer receives in the form of outcomes. These are assessed by the performance of assets as well as the actions that support the service and the assets. The Town of Fort Frances will focus on asset performance (e.g., condition) rather than a more comprehensive collection of program and activity indicators to begin building service levels. This is because the Town's LOS framework is still in its early stages, therefore a focus on asset-based metrics such as condition and asset sustainability is proposed. The Town can keep its present service delivery processes while concentrating on establishing and monitoring asset-based metrics.

Performance against the desired LOS will be tracked to allow assessment of the efficacy and accuracy of the processes associated with data collection and whether the selected measures are the appropriate ones to accurately measure performance of the assets and services offered by the Town. The factors that influence the success of expected performance can then be analyzed and addressed with an informed definition of the LOS. Over time, the Town can have a thorough grasp of what it takes to meet any given LOS in terms of capital expenditure (CAPEX), operating expenditure (OPEX), and changes to working practices. Once a thorough grasp of the LOS and its contributing variables has been achieved, future LOS changes may be weighed and evaluated with greater objectivity.

The current goal is to determine the existing LOS for each of the measures. When there is no consensus on current LOS performance, it is difficult to justify any financing for LOS improvements because the gap is not clearly understood. Once the measures are developed, customers may be included in the LOS process, where any LOS improvements or reductions can be conclusively connected to known cost increments. Likewise, Council and all other stakeholders can be informed on the exact costs of LOS amendments.

The Town's primary goal is to provide its customers with defined LOS. These LOS should be comparable with the customer's expectations, but they should also be reasonable and feasible given the Town's budgetary, administrative, and external limitations. Care must be taken to ensure that the definition of the LOS is consistent across all levels of the organization and provides personnel at the appropriate level with a meaningful and concrete objective that can be realized by their working practices.

A note on selected performance measures, data collection and sample sizes:

While the levels of service framework provides an evidence-based approach for asset management and future budgetary planning, as well as a consistent methodology for all municipalities across the province of Ontario, smaller communities such as Fort Frances have relatively few occurrences of some of the kinds of events that are measured to establish current levels of service and trends over time. For example, an often-reported measure is the number of breaks/backups/etc per 100 km of water, stormwater, or wastewater line. In Fort Frances we have less than 100 km of each of these, and the number of breaks is low enough that the variance from year to year is large on a percentage basis.

There is no specific number, but generally speaking more data points are better and yield results that are more statistically meaningful.

The generation of larger sample sets is further limited by the statement in the legislation that the levels of service be "based on data from at most the two calendar years prior to the year in which all information required under this section is included in the asset management plan." Notwithstanding these limitations, the available data and interpretation thereof still make a useful tool if used as an informative guide rather than as a basis for precise calculation and projection.

Many municipalities are putting forward their first asset management plans as part of the recent Ontario regulation. It can be expected that some performance measures or combinations thereof will prove more suitable to certain types and sizes of municipalities. By the time this document is expanded to include current levels of service for non-core assets – a requirement by July 1, 2024 under current legislation – some performance measures may be added to or removed from those currently used. In short, this document should be viewed as the first iteration in a dynamic process as asset management matures into a standard practice across Ontario and beyond.

Table of Contents

1 Introduction

The goal of Asset Management is to provide a determined level of service in the most cost-effective manner feasible through the acquisition, operation, maintenance, renewal and disposal of assets. Guiding this process, the Town's Asset Management Plan (AMP) is a long-term planning document that establishes a rational framework for managing the Town's portfolio of assets to achieve its goal of sustainable infrastructure spending to support the residents of the Town of Fort Frances. This will be done to not only meet the service needs of the asset's current users but also those for generations to come.

"Levels of Service (LOS)" are a set of metrics that characterize the scope and quality of services provided by a municipality to its citizens. They are an asset management strategy that preserves an organizational and operational emphasis on managing assets in a way that satisfies the demands of customers and other stakeholders (e.g., legislated standards for drinking water systems) while working within the economic constraints of a municipal budget.

A LOS framework logically and robustly connects operational actions to tactical and strategic results. By linking this framework with the existing Asset Management Plan, the Town of Fort Frances will be better able to deliver long-term sustainable services that are both affordable and satisfactory to most users. This contributes to the Town's corporate goal of fostering an asset management culture to better serve its customers.

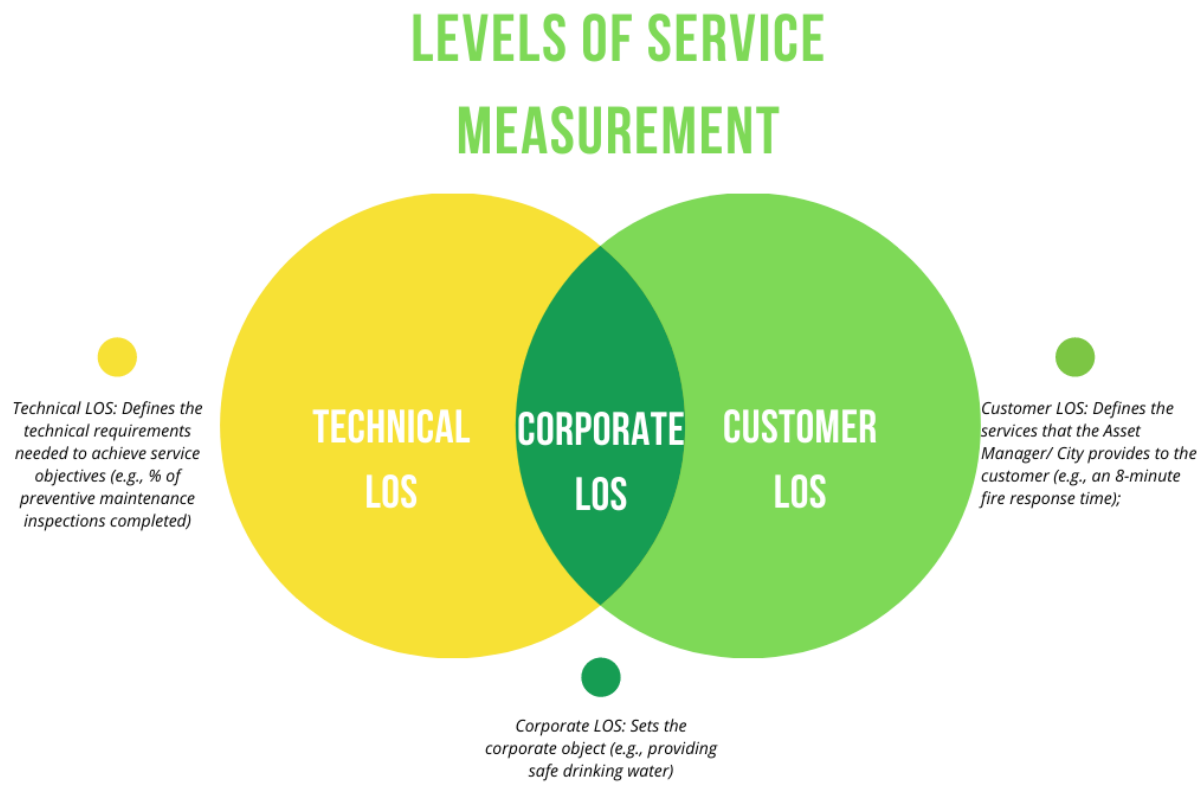
Figure1: Service qualities are commonly used to express customer expectations

- Safe: Services are provided in such a way that emphasizes health and safety, and minimizes risk
- Reliable: Services are consistent and predictable.
- Suitable: Services are appropriate for their intended purpose (fit for purpose).
- Sustainable: Services help to conserve and safeguard the natural and historic environment.

- Available: Services are handy and accessible to the whole community at sufficient levels
- Cost: Services are delivered at the lowest feasible cost for both present and prospective customers,
- Responsive: Customers are served fairly and consistently, within acceptable timelines, displaying respect, empathy, and honesty; and opportunities for community engagement in decision making are offered.

Fundamentally, the delivery of services is one of the key objectives of any government. Assets exist to support the delivery of services provided by the Town Corporation to its customers, both internal and external. A key objective of Asset Management is to optimize the balance between the competing objectives of LOS, risk, and cost with the aim of meeting adequate customer service levels at the lowest lifecycle costs. This objective includes not only better understanding customer expectations but considering these expectations while taking into account the affordability of services. LOS are linked at three levels within the Town – Corporate, Customer and Asset (or Technical). While much asset management literature only discusses customer and technical levels of service, LOS set at the corporate level sets the stage for the other two. Ultimately, LOS determines resources as well as funding strategies.

Figure 2: Levels of Service (LOS) measured at 3 levels within the Town



The management of assets must weigh the affordability of those assets against customer needs and expectations. LOS is the means to measure this aspect of asset management. Decisions are made based on their impact on customers, the community, and the environment. Using LOS links day-to-day asset management decisions with the strategic goals of the Corporation:

- Decision makers will have established measures on which to base their decisions and understand the impact of those decisions on the LOS being delivered.
- The Town can plan to achieve established LOS and rely on the corporate commitment to them.
- Council is provided the opportunity to mandate LOS.
- Council and the public will know what level of service they will receive.

1.1 Performance Measures

Performance Indicators are critical tools for establishing service delivery targets, which may be used to make decisions regarding the Town's assets' capacity to offer expected levels of service today and in the future. These evaluations will then provide customers with peace of mind that their long-term interests are safeguarded by responsible asset stewardship.

All LOS measures have been defined to allow clear determination on whether a measure is being achieved. With this definition in mind, it is important to distinguish between actual performance, and aspirational targets.

1.2 Actual/Current LOS Performance

This is the actual performance obtained from prior years' performance as measured using historical and current data. Actual is simply what was achieved in a reporting period.

1.3 Desired/Target LOS Measures

These are the targets that should be set as part of the 5-year asset management planning updating process, and they should be based on a realistic estimate of how performance can be maintained or improved over the current baseline, considering funding availability and the associated capital and operational investment strategies that can be implemented during this period.

1.4 Delivery Trends

The trend is the expected change over the upcoming period. When trends in a defined set of service and asset performance indicators show that service is in accordance with the reference level of service and, by inference, is expected to stay so in the future, service delivery is deemed stable. As part of current good asset management practices, the Town of Fort Frances will dedicate time for the identification of trends, along with assessing their impact on service levels.

2 O.Reg. 588/17

Recently, the Ontario Government has transitioned from incentivizing proper asset management planning – through the provision of resources like the Building Together Guide and funding for asset management capacity building – to regulating it. Asset management has evolved from what began as an accounting exercise via PSAB 3150 to a holistic informed approach of infrastructure management.

Recognizing the progress that has been made to date, the Ontario Government passed the Infrastructure for Jobs and Prosperity Act (IJPA) in 2015, thereby launching the process of regulating asset management planning at the local level. As with any effort to regulate, it was important to the province to standardize planning processes while taking into consideration the differences in capacity and asset management maturity across municipalities. The update to the IJPA came into effect on January 1, 2017, as O. Reg. 588/17.

2.1 Town of Fort Frances Services

Core assets and associated services are defined by O.Reg. 588/17 as those related to water distribution, wastewater collection, stormwater management, roads, and bridges & culverts. The legislation requires that current levels of service be established for those core assets in this document. Levels of service for all other municipal infrastructure assets, such as facilities, parks, cultural centres, etc, are to be included in a future revision of this document on or prior to July 1, 2024.

2.1.1 Water Assets

The Town provides water treatment services through its water treatment facility and distributes it to residents and businesses, including for fire protection services, through a network of pipes, water tower for storage, valves, and fire hydrants.

2.1.2 Wastewater Assets

The Town collects sewage (wastewater) in a collection system consisting of pipes, and local pumping stations for treatment at the wastewater treat plant which is owned by the town.

2.1.3 Stormwater Management Assets

Storm water management aims to protect the community and the environment from storm water runoff, created by rain and snow melt events, by controlling storm water quality and quantity. Storm water includes drainage assets such as catch basins and pipes.

2.1.4 Roads, Bridges, Sidewalks, and other network assets

The transportation network in the Town of Fort Frances provides the means for the safe movement of people and goods whether vehicles, pedestrians, or cyclists. It includes streets, lighting and signals, bridges, and sidewalks. Bridges are often treated as their own asset category.

2.2 Measuring Levels of Service (LOS)

As a performance-based system, LOS measurement includes a target to be achieved, a measurement or estimate of actual performance, and a trend of how it might change over time due to factors such as environmental conditions, financing, or customer expectations.

2.2.1 Technical Levels of Service

Operational or technical performance measures are used to deliver customer values and effectively achieve customer LOS. These technical measures relate to the activities and allocation of resources to best achieve the desired customer outcomes and demonstrate effective performance.

Technical service measures are linked to the activities and annual budgets addressing acquisitions, operation, maintenance, and renewal as discussed in greater detail in the Asset Management Plan.

3 Lifecycle Management

The Town of Fort Frances maintains and renews its assets through maintenance and renewal activities and investments (i.e., rehabilitation and replacement). Maintenance and renewal activities are planned to reduce total cost of ownership while also lowering the risk of service failure due to asset degradation. Lifecycle Management plays an important role in how the Town of Fort Frances plans to manage and operate the assets at the agreed LOS while managing lifecycle costs. This LOS framework is focused on conserving assets in a physical condition that allows them to perform their needed function at the lowest lifetime cost and with an acceptable degree of risk. As a result, the following customer infrastructure service aspects are prioritized: safety, dependability, and cost effectiveness.

Future LOS framework may incorporate more performance indicators such as suitability, sustainability, availability, and responsiveness, as well as a broader range of asset types.

To better understand LOS, we must have a holistic understanding of an asset's lifecycle, which includes

- Acquisition
- Operations
- Maintenance
- Renewal
- Upgrade/Disposal

Capital investments are evaluated by considering time-based lifecycle activities and their cost, as well as risk matrix analysis. An asset lifecycle is funded by the Town's annual budgets. Table 3-1 shows the trend in budgets from 2019 to 2022.

Table 3-1 Annual Budget Summary

Budget	2019 (Actual)	2020 (Actual)	2021	2022
Capital (CAPEX)	$6,871,001	$13,894,519	$13,303,569	$17,570,975
Operation (OPEX) (does not include water and sewer operation)	$23,152,976	$21,701,628	$21,143,701	$22,054,312
Water Operation	$2,837,009	$2,919,271	$2,894,472	$3,003,281
Sewer Operation	$2,603,945	$2,728,201	$2,682,631	$2,791,235

3.1 Capital Budget

The capital budget accounts for acquisitions and renewal of municipal assets. Though water and sewer operation are broken out separately in the table due to their particular importance in the Town's budgeting, they are included in the provided CAPEX numbers.

Acquisitions are defined as the addition of assets that did not previously exist or projects which will upgrade an existing asset beyond its existing capacity or serviceability. Acquisitions may result from growth, demand, social trends or environmental needs.

A renewal is defined as a major work which does not significantly alter the original service provided by the asset, but restores, rehabilitates, replaces, or renews an existing asset to its original or near-original service potential. Work restoring an asset beyond its original service potential is considered an acquisition, resulting in additional future operations and maintenance costs.

3.2 Operating Budget

The operating budget funds the operation and maintenance of municipally-owned assets.

Operational activities are actions taken to ensure our assets are consistently in good working order. Daily, weekly, seasonal, and yearly activities are undertaken by staff to ensure that the Town of Fort Frances assets perform within acceptable parameters, and that we actively monitor their condition.

Maintenance has been referred to as the ongoing management of deterioration. These maintenance activities are intended to keep an asset as near to its original condition as practicably possible. Maintenance does not increase service potential for assets, but it slows down deterioration and delays major rehabilitation or replacement activities. The purpose of planning maintenance is to deliver sustainable, cost-effective, and reliable asset performance year over year. Planned maintenance reduces the occurrence of reactive maintenance which can be linked to increased exposure to risk and higher financial costs. Regular maintenance will ensure our assets will achieve their intended service life at a cost that is affordable.

4 Guiding Principles and Core Values

Customer LOS should be defined as statements of desired performance outcomes that are either:

- Of high priority to the Towns' customers,
- Critical to the environment's integrity, or
- Required by the legislation

The data used to populate the LOS framework should come from routine business operations and be gathered and audited accurately and consistently. The cost of collecting any new data, as well as the cost of assessing performance, should be acceptable and seen as adding value to the total service.

The LOS is used to compare choices, assess implications, and optimize decisions. It serves as the foundation for asset management and analytical operations. It is the motivator for identifying asset requirements and the foundation for investment decisions.

As a guide to developing and measuring LOS, it is useful to understand what the public values in the provision of municipal services. Through better definition of services, it is possible to know what service outcomes are provided to the community, and at what cost. This helps determine the investment in infrastructure renewal that will sustain the asset condition that provides the outcomes the community expects. Best practice infrastructure planning and investment is evidence based, and transparently linked to LOS.

5 Current Levels of Service (LOS)

A level of service (LOS) can be defined as the user-focused outcome of an asset's performance. Simply put, a level of service is a measure of how well a municipality provides for its citizens in a cost- effective and efficient manner. All assets degrade physically at varying rates, eventually failing. Asset condition is a

quantitative evaluation of an asset's present position on the asset's "decay" or deterioration curve (i.e., its age or remaining life in relation to its condition). Understanding the asset's current state and location on the asset decay curve allows forecasting of future condition and selection of appropriate renewal treatment type and timing for assets where preventive maintenance and rehabilitation actions are technically possible.

To ensure that corporate objectives align with expected service outcomes, it is necessary to develop a process for the systematic measurement, monitoring and evaluation of an organization's levels of service. As a result, for the time being, the Town of Fort Frances will focus on the service delivery approach. This method entails deciding on a set of defined asset and customer service performance metrics and then monitoring them (LOS measures). If these indicators remain relatively stable or improve significantly, it is assumed that the level of capital maintenance invested is appropriate. If, on the other hand, the indicators show a drop in performance, it means the Town has been underinvesting in capital upkeep.

A key component of this LOS Framework is a detailed registry of key existing and targeted LOS across the Town based on service area. This list will provide Council, staff, and customers with a clear knowledge of the LOS currently provided against a desired LOS for which the Town is striving. The Town of Fort Frances will be able to quickly quantify the impact of budget adjustments on LOS, as these LOS will become a crucial metric during budget deliberations.

Managing LOS involves balancing three key factors: cost, performance, and risk. Any decision to increase or decrease the provided LOS will have an impact on each factor. Increasing a level of service will lead to higher costs but would lead to a decrease in risk and an increase in asset performance. For example, improving the rideability of the Towns' roads is a level of service increase, but comes with an added cost to the taxpayer. Conversely, decreasing the rehabilitation of the watermain network will result in an immediate savings but can result in increased risk and lead to more watermain breaks and service interruption for residents. As a result, managing the Town's LOS is about understanding the trade-offs involved and aligning cost, performance, and risk with the Towns' corporate objectives as well as the desires of community and regulatory stakeholders.

To better understand the community's values, the Town of Fort Frances will engage with its customers through a LOS survey to ensure the community has a better understanding of the condition of assets. Additionally, the LOS survey will also allow the municipality to better understand the public's opinion on the services provided and their appetite to increase costs to provide a higher level of service or that they prefer to reduce taxes in exchange for a decreased level of service. The LOS survey will be completed in conjunction with the Town's Asset Management Plan (AMP) which is updated on a 5-year cycle. By completing the LOS survey one year before the AMP is updated, Town staff will have valuable information from community stakeholders on how they feel the Town's assets are being managed.

5.1 Customer Values

Service levels are defined in three ways: customer values, customer LOS and technical LOS. Customer values can be described as:

- What aspects of the service are important to the customer
- Whether they see value in what is currently provided, and
- The likely trend over time based on the current budget provision

5.2 Water Assets

In Ontario, municipalities are regulated under the Safe Drinking Water Act, 2002 (O.Reg. 170/03) to develop a Quality Management Standard for the Drinking Water System (DWQMS) that endorses a proactive and preventative approach to drinking water quality. This approach includes consideration of elements that are fundamental to ensuring the long-term sustainability of a Drinking Water System including: management processes employed within the system; the maintenance of infrastructure used to supply drinking water; and identification of potential risks and risk mitigation strategies for items such as system security, water treatment, and the impacts of climate change. The DWQMS ensures that account holders' access to safe drinking water is held to the highest standards and interruptions in the water network are appropriately resolved.

In Table 5-2 under each of the service measure types (Condition, Function etc.) there is a summary of the performance measure being used, the current performance, and the expected performance based on the current budget allocation.

These measures of fact related to the service delivery outcome (i.e., number of occasions when service is not available or proportion of replacement value by condition %'s) to provide a balance in comparison to the customer perception that may be more subjective.

The water network distributes water to approximately 3,320 private connections around the municipality. The service objective is to deliver safe, clean drinking water on demand to all connections 24 hours a day, seven days a week.

5.2.1 Asset Description

This framework covers the infrastructure assets that provide water services. The water network comprises:

- Watermains (72.2 km)
- Valves (approximately 717)
- Services (3320)
- Water Treatment Plant (1)
- Water Towers (1)
- Hydrants (401)
- Facilities and Chambers (2)

The above assets have a replacement value estimated at approximately $81.8M.

Figure 3, below, shows the extent to which the different areas of the municipality are connected to the municipal water system.

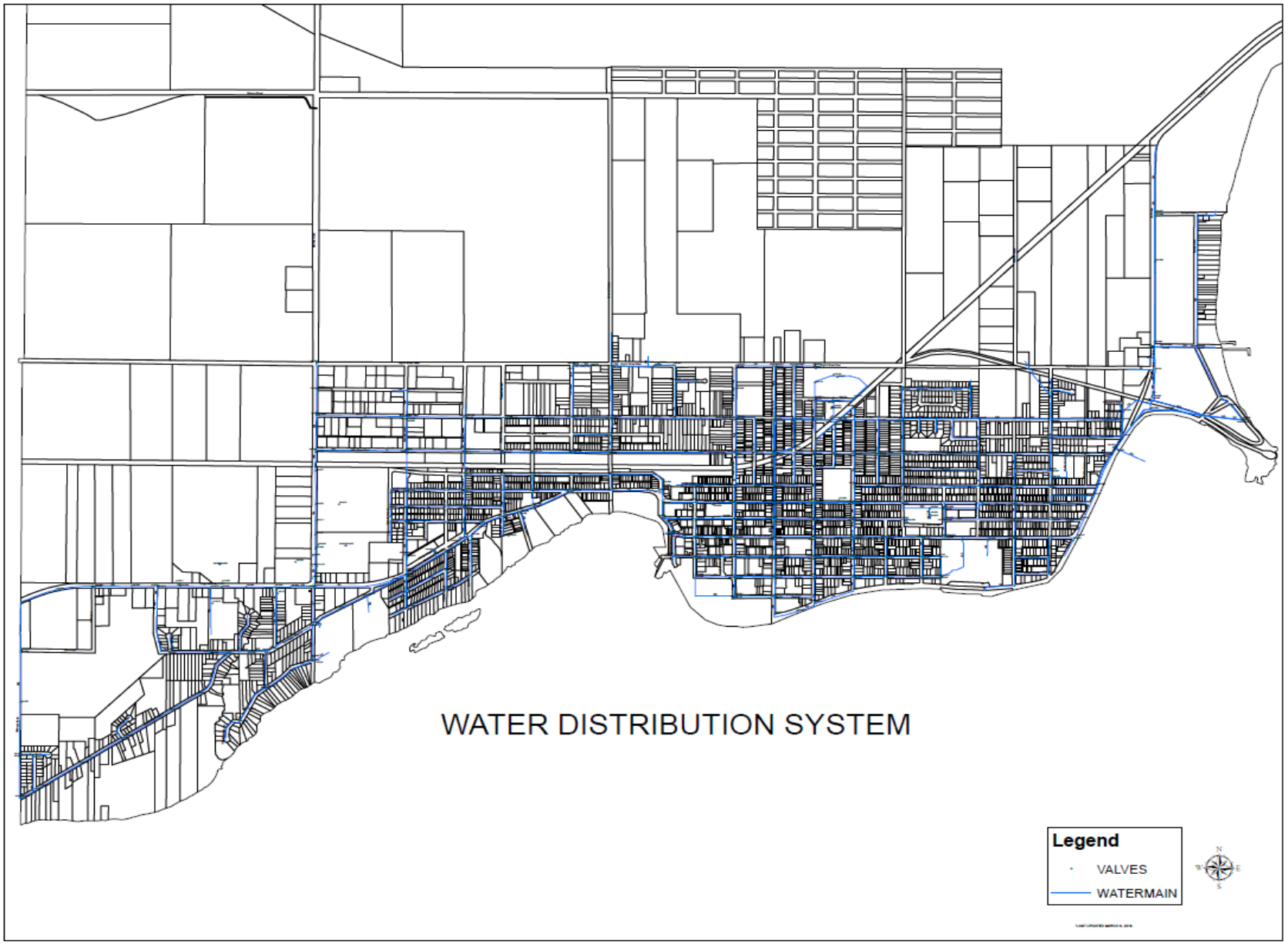


Figure 3: Fort Frances Municipal Water Distribution Network

5.2.2 Levels of Service (Water Assets)

Table 5-1 Water Assets - Customer Levels of Service

Corporate Levels of Service (LOS)	Performance Measure	Actual	Target	Trend
Safe, well maintained, and managed water supply network (watermain, valves, meters, hydrants) High-quality drinking water with good pressure and flow, clean and clear Assurance about sustainable future water supply and support for services Proactive notification for supply or service interruptions Responsive to customer issues and first-time issue resolution	**Customer Service**			
	Customer satisfaction	High (to be measured by survey, but currently estimated based on complaint numbers)	95%	flat
	Emergency response	<2 hrs	<2 hrs.	N/A
	Non-emergency response	<48 hrs	<24 hrs.	flat
	Number of Complaints (2021 data)	0	<5	flat
	Function and Capacity			
	Service outage – annual customer hours	40,021	TBD	-
	Condition and Reliability			
	%Assets > good condition	29% - Poor	70% - Good*	flat
	Emergency repairs	variable**	<24 hrs	flat
	Drinking water advisory – annual # (for 2021)	22	<20	TBD
	Safety			
	Water sample compliance	100%	100%	flat
	Cost	**2019**	**2020**	**2021**
	Operating cost	$1,737,995	$1,702,106.00	$1,752,409.00
	Capital renewal	$609,086.08	$1,699,196.64	$517,860.88
	Renewal ratio	0.93	2.50	0.74

Note: See Appendix A for boil water advisory description table.

***Based on 2019 Canadian Infrastructure Report Card (CIRC) indicating that ~70% of potable water assets were in "Good to Very Good" Condition**

****** Emergency repair times are variable in part because they are difficult to define. The biggest emergencies are addressed immediately and likely fall in the 24hr repair window, but there are also too few incidences to make a precise estimate.**

Table 5-2 Water Assets - Technical Levels of Service

Corporate Levels of Service (LOS)	Performance Measure	Actual	Target	Trend
Ontario Drinking Water Systems Regulation (O. Reg. 170/03)	Per capita water demand L/person/day	~170	<250*	flat
	Residential demand per account in m^3/year	~230	<270*	flat
	Non-revenue water	<15%	15%	likely to get worse as assets age
	Flushing Pipes to Maintain Residuals and Water Quality – Annual %	20%	20%	flat
	% Of Properties where fire flow is available	***99+%***	***100%***	***N/A***
	% Of properties connected to water system	***82%***	***TBD***	***flat***
	# Of connection-days per year where a boil water advisory is declared in comparison to the total # of properties connected to the water system	***0.53***	***TBD****	***Likely to trend up as assets age***
	# Of connection-days per year due to water main breaks in comparison to the total # of properties connected to the water system	***0.03***	***TBD****	***Likely to trend up as assets age***
	Service Leak Customer Complaint – Annual	0	0	flat

Note: Performance measures that are bolded and italicized are requirements of O. Reg. 588/17.
***Water demand targets are based on national averages**
****Targets for acceptable number of connection-days lost per year due to drinking water advisories and water main breaks are to be determined based on a provincial or national average, if available**

5.3 Wastewater Assets

The wastewater management system collects and conveys wastewater from private properties where it can then be treated before returning it to the natural watercourse. The service objective is to provide a reliable wastewater network to customers 24 hours a day 7 days a week.

5.3.1 Asset Description

This framework covers the infrastructure assets that provide wastewater services. The wastewater network comprises:

- Conveyance Pipe (59.4 km)
- Manholes (640)
- Personal Drain Connections (3,320)
- Lift Stations (5)
- Wastewater Treatment Plant (1)

The above assets have a replacement value estimated at approximately $84.3M.

Figure 4 on the following page shows the extent of the municipality connected to the Town's wastewater system.

In Table 5-4 under each of the service measure types (Condition, Function, etc.) there is a summary of the performance measure being used, the current performance, and the expected performance based on the current budget allocation.

These measures of fact related to the service delivery outcome (i.e., number of occasions when service is not available or proportion of replacement value by condition %'s) to provide a balance in comparison to the customer perception that may be more subjective.

5.3.2 Levels of Service (Wastewater Assets)

Table 5-4 Wastewater Assets - Customers Level of Service

Corporate Levels of Service (LOS)	Performance Measure	Actual	Target	Trend
Safe, well maintained, and managed wastewater system network. Proactive notification for supply or service interruptions Responsive to customer issues and first-time issue resolution Protection of the environment from overflows, sewer backups and odors	**Customer Service**			
	Customer Satisfaction	Very High (current estimate based on complaint numbers)	95%	flat
	Emergency Response	<2hrs	<2 hrs.	flat
	Non-Emergency Response	<48 hrs	<24 hrs.	flat
	Number of Complaints (2021 data)	0	<10	flat
	Condition and Reliability			
	%Assets > Good Condition	24% - Poor	55%*	flat
	Annual # of Breaks on Sewer Main	2	<5	Likely to increase due to age and condition
	Annual # of Breaks on Sewer Services	~7	TBD	
	Safety			
	Volume of bypass (untreated wastewater, 2-year average)	0.01%	<4%	
	Cost	**2019**	**2020**	**2021**
	Operating Cost	$1,248,358.00	$1,228,954.00	$1,394,516.00
	Capital Renewal	$330,800.14	$2,117,094.20	330,506.44
	Renewal Ratio	0.48	2.91	0.43

Note: See Appendix A for description table.

***Based on 2019 Canadian Infrastructure Report Card (CIRC) indicating that ~55-65% of wastewater assets were in "Good to Very Good" Condition**

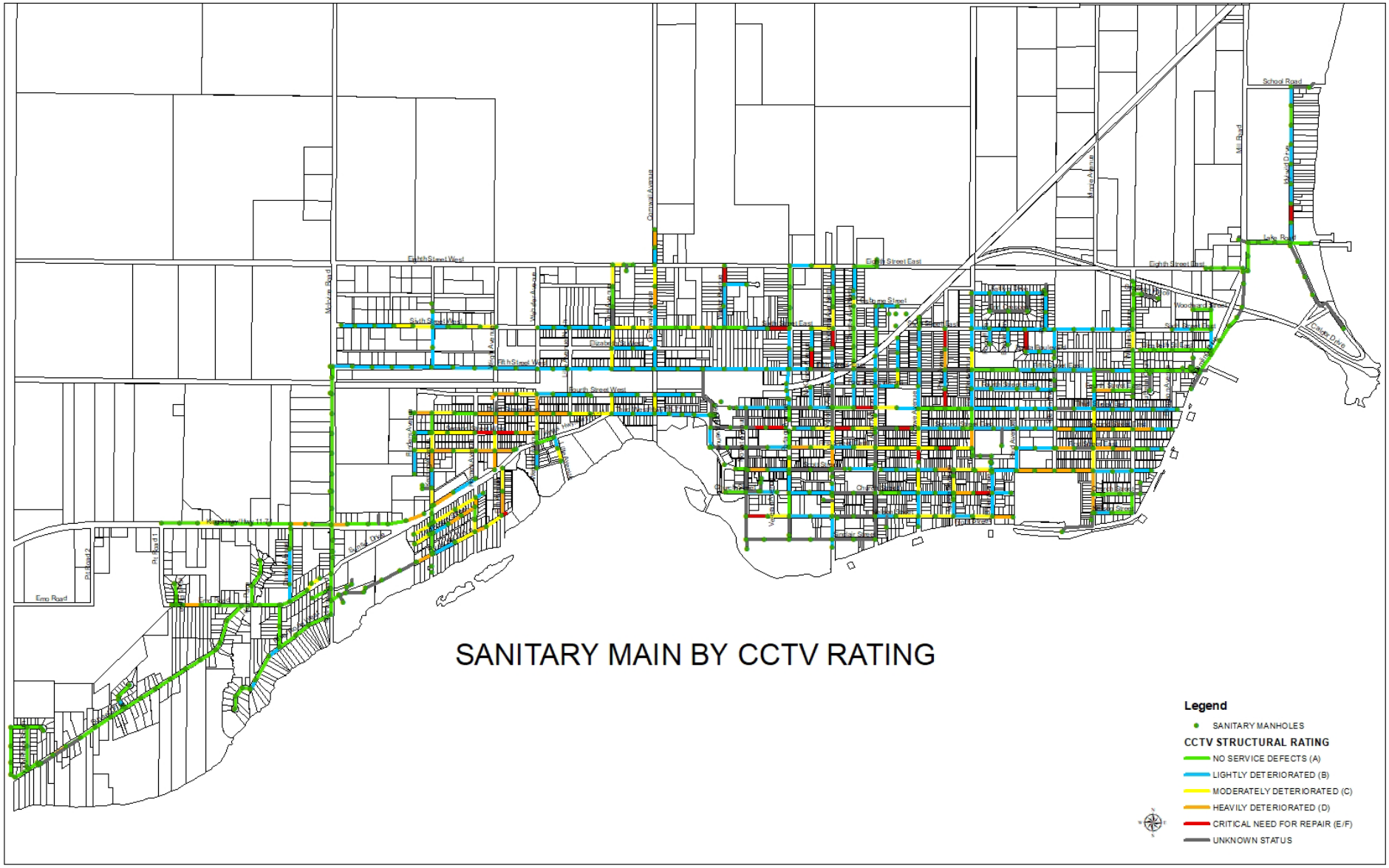


Figure 4: Extent of the Town's Wastewater Sewers, by CCTV Rating

Table 5-5: Wastewater Assets - Technical Levels of Service

Technical Levels of Service (LOS)	Performance Measure	Actual	Target	Trend
Ontario Clean Water Act	***Percentage of properties connected to the municipal wastewater system***	***82%***	***-***	***flat***
	# of events per year where combined sewer flow exceeds capacity in comparison to # Of properties connected to the system	***N/A****	***N/A****	***-***
	# of connection-days per year due to wastewater backups in comparison to # of properties connected to the system	***0.03***	***TBD*****	***Likely to trend up as assets age***
	#of effluent violations per year due to wastewater discharge compared to the total number of properties connected to the system	***TBD***	***TBD***	***TBD***
	Manhole Condition and Function Inspection - Frequency	as required	10% of Network	Will increase with scheduled maintenance

Note: Performance measures that are bolded and italicized are requirements of O. Reg. 588/17.
***Fort Frances does not have any known combined sewer systems, but flow excesses can still occur due to inflow and infiltration**

5.4 Stormwater Management Assets

The storm water management system collects and conveys rainwater runoff from private property, public land, and roads. There is a wide range of LOS such as complaint response times to, as well as the number of flooding incidents associated with the stormwater network system. The service objective is to provide a reliable storm water network system to mitigate the impacts to properties and return the water safely back to natural water courses.

5.4.1 Asset Description

This framework covers the infrastructure assets that provide storm water services. The storm water network comprises:

- Conveyance Pipe (39.7 km)
- Manholes (391)
- Catch Basins (1,006)
- Catch Basin Leads (12.5 km)
- Major Independent Water Quality Devices (2)
- Lift Station (1)

The above assets have a replacement value estimated at approximately $60.9M.

Figure 5, below, shows the areas of the municipality of Fort Frances that are provided some flood protection by virtue of being connected to the municipal storm water management system.

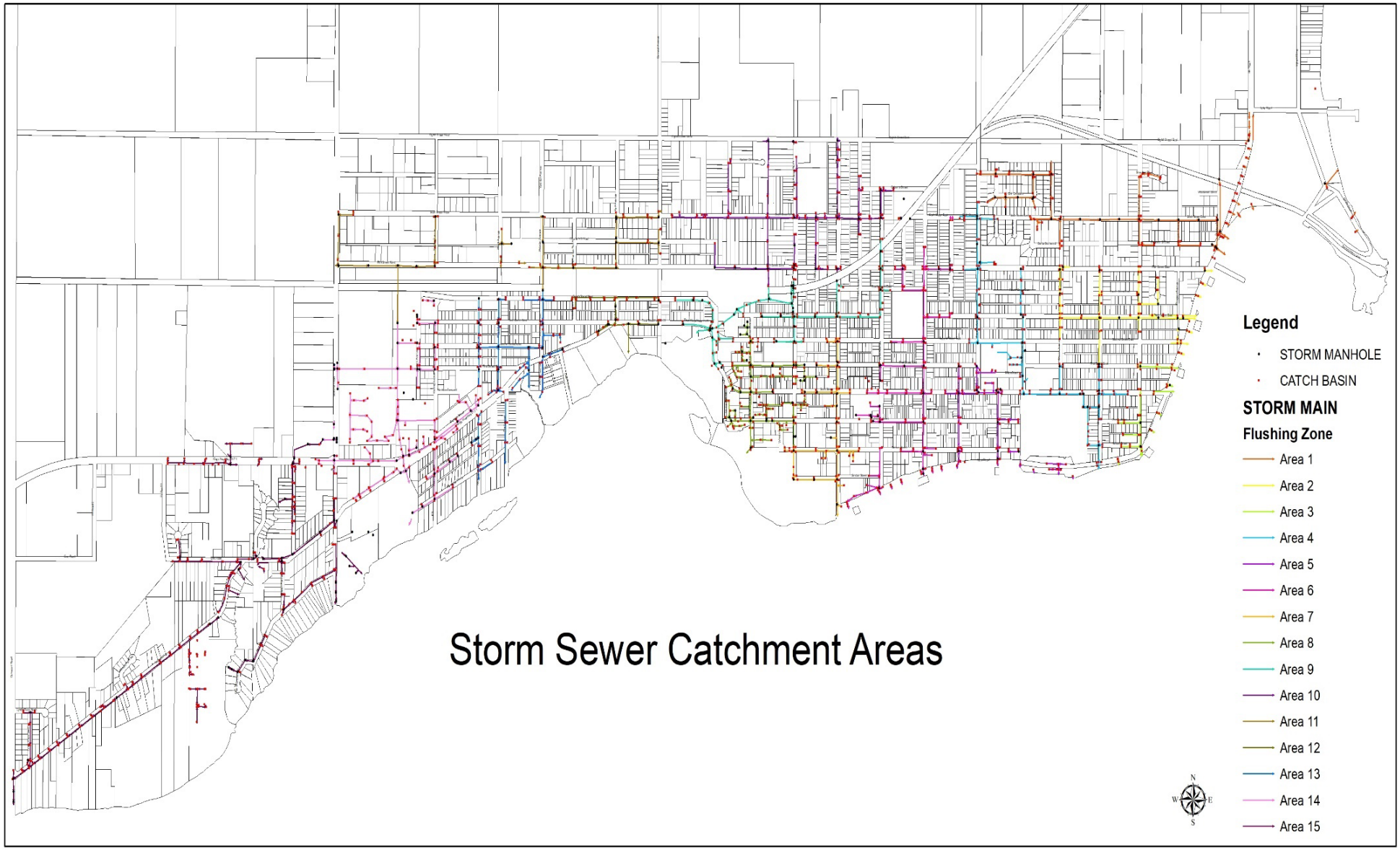


Figure 5: Extent of Municipal Stormwater Management System

5.4.2 Levels of Service (Stormwater Management Assets)

In Table 5-6 under each of the service measure types (Condition, Cost, etc.) there is a summary of the performance measure being used, the current performance, and the expected performance based on the current budget allocation.

These are measures of fact related to the service delivery outcome (e.g., number of occasions when service is not available or proportion of replacement value by condition %'s) to provide a balance in comparison to the customer perception that may be more subjective.

Table 5-6: Stormwater Management Assets - Customer Levels of Service

Corporate Levels of Service (LOS)	Performance Measure	Actual	Target	Trend
Protection of property and the environment from flooding and contamination. Manage flooding of roadways and property corridors. Deploying and promoting efficient and effective methods that provide multiple environmental benefits. Retention of storm water flow prior to release to the environment to mitigate effects of pollutants and contaminants and promote groundwater recharge.	**Customer Service**			
	Customer Satisfaction	TBD	TBD	flat
	Emergency Response	<2 hrs	<2 hrs.	flat
	Non-Emergency Response	days	<24 hrs.	flat
	Number of Complaints (2021)	0	<5	flat
	Condition and Reliability			
	%Assets > Good Condition	67%	60%*	likely to trend down as assets age
	Safety			
	# Of road closures due to flooding - Annual	not available		TBD
	Cost	**2019**	**2020**	**2021**
	Operating Cost	$129,782.00	$67,424.00	$136,393.00
	Capital Renewal	$103,011.56	$1,233,142.85	$856,648.11
	Renewal Ratio	0.54	5.99	3.74

Note: See Appendix A for description table.

***Based on 2019 Canadian Infrastructure Report Card (CIRC) indicating that "approximately 40-60% of stormwater infrastructure is in good or very good condition"**

5.4.3 Technical Levels of Service

Operational or technical performance measures are used to deliver customer values and effectively achieve Customer LOS. These technical measures relate to the activities and allocation of resources to best achieve the desired customer outcomes and demonstrate effective performance.

Technical service measures are linked to the activities and annual budgets covering:

Acquisition

The activities to provide a higher level of service (i.e., replacement of municipal drains in urban areas with properly designed storm sewers, assumption of new developments.)

Operation

The planned and unplanned activities to provide services (i.e., catch basin cleaning, storm water asset inspections, cleaning manholes, and water quality testing.)

Maintenance

The activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (i.e., storm water management pond clean out, catch basin and manhole repairs.)

Renewal

The activities that return the service capability of an asset up to that which it had originally provided (i.e., replacement of existing infrastructure that has reached the end of its useful life.)

Table 5-7: Stormwater Management Assets - Technical Levels of Service

Technical Levels of Service (LOS)	Performance Measure	Actual	Target	Trend
Ontario Clean Water Act	Frequency of culvert inspection and cleaning	as required	TBD	TBD
	% Of properties resilient to a 100-year storm	***~25%***	***TBD***	***TBD***
	% Of stormwater management system resilient to a 5-year storm	***52%***	***TBD***	***TBD***
	% of Storm Sewer Inspected annually by CCTV	as required	10% of Network	expected to increase
	Cleanouts Per Year Needed vs Completed	TBD	TBD	TBD

Note: Performance measures that are bolded and italicized are requirements of O. Reg. 588/17.

It should be noted that some stormwater asset data is difficult to obtain because historically, tracking and collecting this data has been a relatively low priority (not just in the Town, but across Canada). Culvert cleaning and stormsewer inspection have largely been performed on an as-needed basis rather than scheduled to serve the entire system over a recurring period of time (as is done for wastewater sewers, for example). These processes are being reviewed so that this data can be effectively collected – and assets regularly maintained – on a going-forward basis.

5.5 Roads

The Transportation Service area, which largely comprises roadways and traffic-related assets, has a set of well-established, validated LOS metrics in place, including industry best practice recognized measures such as the Ministry of Transportation's Pavement Quality Index (PQI), and O.Reg. 239/02: Minimum Maintenance Standards for Municipal Highways. The service objective is to provide a safe, reliable transportation network to convey passenger and commercial traffic.

5.5.1 Asset Description

The road network facilitates the movement of traffic within and through the Town of Fort Frances. The service objective is to provide a safe and reliable transportation network. Assets include:

- Culverts (under 3m Diameter)
- Road base/Surface (Low class bituminous, hot mix asphalt & gravel)
- Curb and Gutter
- Roadside signage

The Town has several initiatives in place to manage and maintain the road system, including:

- Regular inspection and condition assessment.
- Traffic operations relating to sign reflectivity, traffic signals, parking bylaws and restrictions
- Traffic safety, relating to speed limits, traffic count surveys, and crossing guards.
  Improvements and Maintenance - Line painting, pothole repair, and crack sealing

The estimated replacement cost of the road network is approximately $106M.

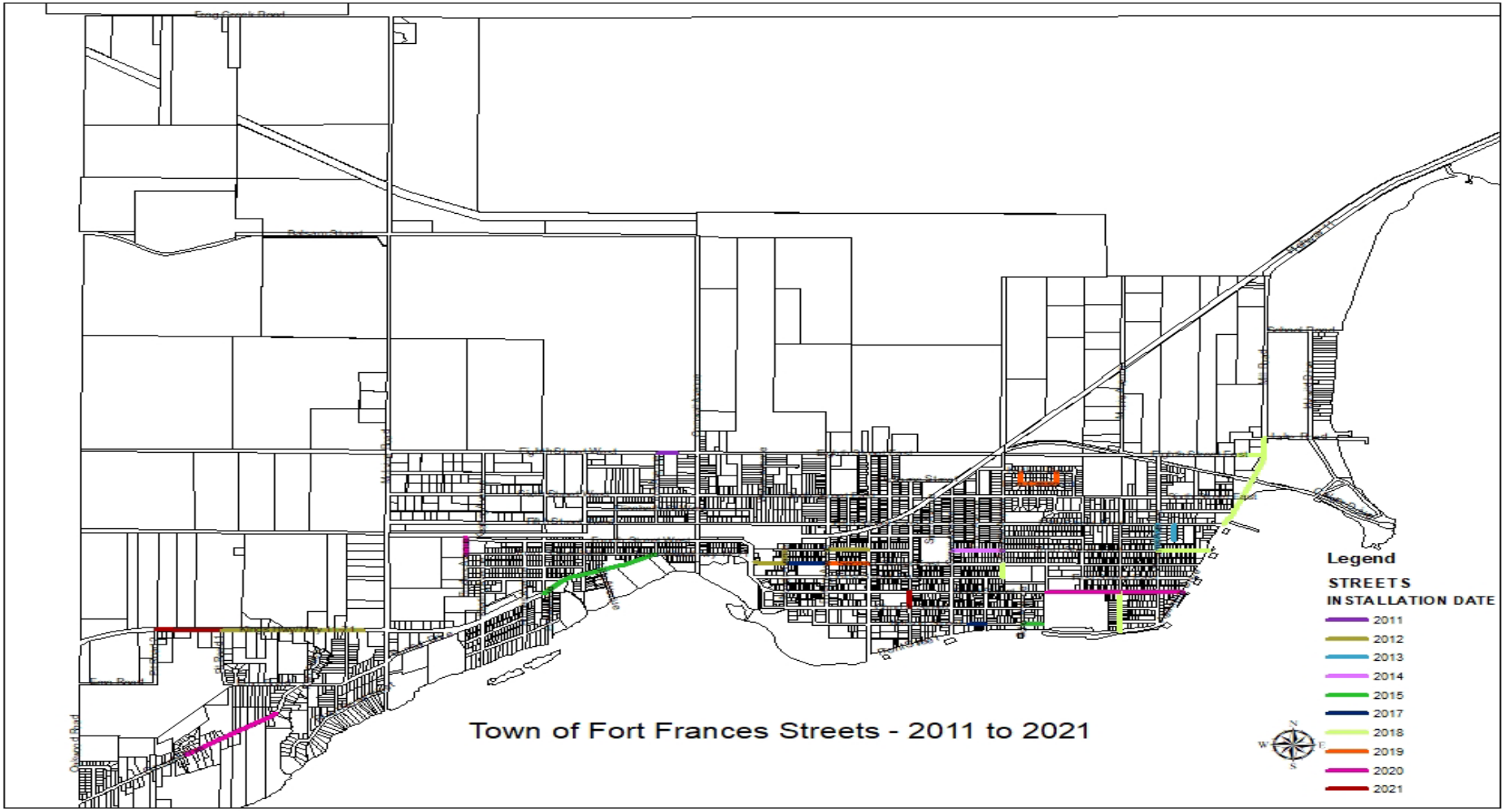


Figure 6: Town of Fort Frances Road Installation History Map 2011-2021

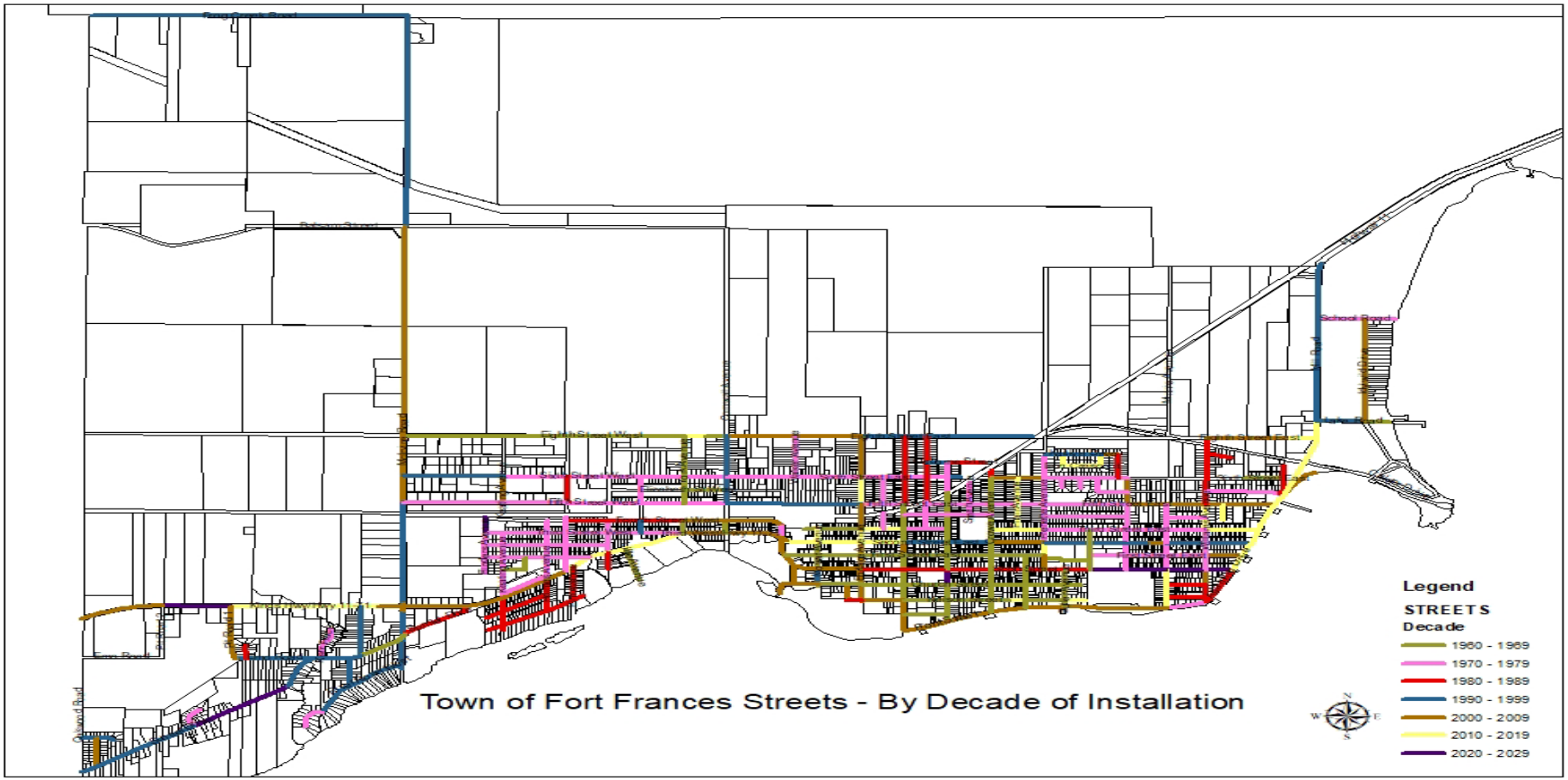


Figure 7: Town of Fort Frances Road Installation History Map by the Decade

5.5.2 Levels of Road Class Pavement Condition

Very Good: Pavement is in excellent condition with few visible defects. Rideability is excellent with few areas of very slight distortion.

Good: Pavement is in good condition with accumulating slight defects. Rideability is good with intermittent slightly rough and uneven sections.

Fair: Pavement is in fair condition with intermittent patterns of slight to moderate defects. Rideability is fair, and surface is slightly rough and uneven.

Poor: Pavement is in poor condition with frequent patterns of moderate defects. Rideability is poor, and surface is rough and uneven.

Very Poor: Pavement is in very poor condition with extensive severe defects. Rideability is very poor, and surface is very rough and uneven.

In Table 5-2 below, under each of the service measure types (Condition, Function, etc.) there is a summary of the performance measure being used, the current performance, and the expected performance based on the current budget allocation.

These are measures of fact related to the service delivery outcome (e.g., number of occasions when service is not available or proportion of replacement value by condition %'s) to provide a balance in comparison to the customer perception that may be more subjective.

Table 5-8: Roads - Customer Levels of Service

Corporate Levels of Service (LOS)	Performance Measure	Actual	Target	Trend
Safe, well maintained, and managed Transportation network for vehicles, cycling and pedestrians. Clear sightlines, good lighting, and legible pavement markings, directional and traffic signs. Timely repairs and maintenance with well communicated Road network information. Environmentally responsible salt and sand use Dedicated cycling lanes on Town Roads network	**Customer LOS**			
	Emergency Response	<2 hrs	<2 hrs	flat
	Non-Emergency Response	<24 hrs	<24 hrs	flat
	Number of Complaints	2 in 2021	<10	flat
	Function and Capacity			
	Road network is reliable and able to adequately convey traffic safely	Fair	Good	flat
	Condition and Reliability			
	%Assets > Good Condition	25%	50%*	Likely to worsen as assets age
	Emergency Repairs	variable	<24 hrs	TBD
	Safety			
	Winter Control Plowing			
	Roads	<12 hrs.	<24 hrs.	flat
	Sidewalks	<24 hrs.	<48 hrs.	flat
	Cost	**2019**	**2020**	**2021**
	Operating Cost	$1,385,496.00	$1,399,755.00	$1,535,661.00
	Capital Renewal	$1,319,738.99	$3,591,240.23	$2,966,467.20
	Renewal Ratio	0.78	2.09	1.80

*based on 2020 CCPI Survey indicating that "over half the length of roads in Canada reported to be in good or very good condition in 2020 (54%)."

5.5.3 Technical Levels of Service

Operational or technical performance measures are used to deliver customer values and effectively achieve Customer LOS. These technical measures relate to the activities and allocation of resources to best achieve the desired customer outcomes and demonstrate effective performance.

Technical service measures are linked to the activities and annual budgets covering:

Acquisition

The activities to provide a higher level of service or a new service that did not exist previously. (i.e., widening a road, sealing an unsealed road, assumption of new developments)

Operation

The regular activities to provide services. (i.e., winter maintenance, street sweeping, line painting, road needs study)

Maintenance

The planned and reactive activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (i.e., road patching, unsealed road grading, hot mix patching, crack sealing).

Renewal

The activities that return the service capability of an asset up to that which it had originally provided. (i.e., replace existing infrastructure that has reached the end of its useful life)

Table 5-9 shows the current activities executed by the Operations and Facilities Division that are performed to provide the best LOS for the community.

Table 5-9: Roads - Technical Levels of Service

Technical Levels of Service (LOS)	Performance Measure	Actual	Target	Trend
Ontario Regulation 239/02 Minimum Maintenance Standards for Municipal Highways, establishes the minimum standards expected of municipalities in Ontario.	***Road Density***	***Number of lane-kilometers as a proportion of sq. km of the town's land area (lanes*km/km^2)***		
	Arterial Roads	0.962	-	
	Collector Roads	1.446	-	
	Local Roads	2.429	-	
	Average pavement condition index value - Paved roads	60% - "good"	60%	flat
	Average surface condition - Unpaved roads	46% - "fair"	Good	flat
	Sign Deficiency Repair			
	Priority Signs (Stop signs)	<24 hrs	<2 hrs.	TBD
	All other signs: weekends, after hours	<48 hrs	<24 hrs.	TBD
	Roadside Cleanup	TBD	<24 hrs.	TBD

Note: Performance measures that are bolded and italicized are requirements of O. Reg. 588/17.

It is important to monitor the service levels regularly as circumstances can and do change. Current performance is based on existing resource provision and work efficiencies. It's acknowledged that changing circumstances such as technology and customer priorities will evolve over time.

Road data, like the stormwater system, have not always been recorded diligently in the past. Trends will be easier to spot with improved data collection on a going-forward basis.

5.6 Bridges and Culverts

Bridges and culverts are considered to be part of the overall road network. The Town manages 3 bridges: Caul Road bridge, Mill Road overpass and Portage Ave Underpass. Responsibility for the safety and maintenance of bridges is set out in the Public Transportation and Highway Improvement Act which requires that all provincial and municipal bridges be inspected every two years under the direction of a Professional Engineer using the Ministry of Transportation's "Ontario Structural Inspection Manual" (OSIM). The inspections involve a close-up visual assessment of each element of a bridge and observations made of any material defects, performance deficiencies, and maintenance and rehabilitation needs.

5.6.1 Asset Description

The Town of Fort Frances is responsible for the safety and maintenance of 3 bridges according to Ontario's Public Transportation and Highway Improvement Act. The town's bridges include:

- Caul Bridge, a 3-span steel girder bridge with concrete deck that supports all traffic types (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, and cyclists)
- Mill Road Overpass, a 3-span precast concrete girder that supports all traffic types (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians, and cyclists)
- Portage Avenue Overpass, a single span precast concrete girder (thick slab) that supports CN trains

The Bridge Condition Index (BCI) was calculated for each structure in 2021 as part of the biennial inspections for bridges in Ontario. The following table indicates BCI's for each of the town's bridges based on observations made at the time of inspections:

Table 5-10: Bridges - 2021 Bridge Condition Index

Structure	BCI
Portage Avenue Overpass	64 (Fair)
Mill Road Overpass	73 (Good)
Caul Bridge	70 (Good)

There are three BCI ratings that can be given to an existing structure: Good (BCI range 70-100), Fair (BCI range 60-70), and Poor (BCI <60). The above assets have a replacement value estimated at $9,490,000.

5.6.2 Levels of Service (Bridge)

As bridges are part of the road transportation network in town, the customer-facing levels of service are reasonably summarized in table 5-2 – Road Customer Levels of Service, with the exception of the cost breakdown as follows:

Cost	2019	2020	2021
Operating Cost	$111,726.39	-	-
Capital Renewal	$33,303.42	$33,303.42	$33,303.42
Renewal Ratio	3.35	-	-

5.6.3 Technical Levels of Service

Table 5-11: Bridges - Technical Levels of Service

Technical Levels of Service (LOS)	**Performance Measure**	**Actual**	**Target**	**Trend**
Ontario Regulation 239/02 Minimum Maintenance Standards for Municipal Highways establish the minimum standards expected of municipalities in Ontario.	Average Bridge Condition Index Value	64%	>60	flat
	% Of bridges the with loading or dimensional restrictions	***0%***	***0%***	***0%***

Note: Performance measures that are bolded and italicized are requirements of O. Reg. 588/17.