CITY OF Thunder Bay
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STORMWATER MANAGEMENT SYSTEM

ANNUAL REPORT

2025

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Introduction - Stormwater Management System

The City of Thunder Bay's Stormwater Management System is governed by the Ministry of the Environment, Conservation and Parks (MECP) and is also subject to applicable federal legislation. The stormwater collection system captures and conveys runoff from roadways, private developments, and parklands to receiving waterbodies that ultimately discharge to Lake Superior.

This report was prepared in accordance with the requirements of the Consolidated Linear Infrastructure Environmental Compliance Approval (CLI-ECA) Number 024-S701, dated December 19, 2024, for The City of Thunder Bay's Stormwater Collection System, Schedule E, Section 5.2. This report covers the operating period from January 1, 2025, to December 31, 2025.

OVERVIEW

The City of Thunder Bay's Stormwater Collection System consists of works for the collection and conveyance of stormwater, including approximately 351 km of storm sewers, 486 ditches and swales, and 4 pumping stations.

The system manages both stormwater quality and quantity through a range of Stormwater Management Faculties (SWMFs), including 28 Low Impact Development (LID) retention facilities, 2 wet ponds, 2 dry ponds, 1 super pipe/storage facility, and 39 oil-grit separators.

Stormwater is discharged through a network of outfalls to parklands, the Lyon's Drainage Channel and receiving waterbodies, including tributaries of the Kaministiquia, Neebing, McIntyre, McVicar, and Current Rivers, which ultimately drain into Lake Superior. The system is operated and maintained by the City of Thunder Bay's Infrastructure and Operations Division.

Summary and Interpretation of Monitoring Data

Stormwater pumping stations were continuously monitored during high rainfall events, and no abnormal levels were observed. The City of Thunder Bay will continue to monitor these events and will take further action, as required, upon receipt of any additional direction from the MECP regarding the monitoring and interpretation of environmental trends.

The City of Thunder Bay will continue to consult with the Lakehead Region Conservation Authority to remain informed on environmental trends and watershed conditions that may influence stormwater system performance.

Summary of Inspections, Maintenance and Repairs

The City of Thunder Bay is committed to completing routine inspections to support the implementation of a risk-based approach to maintenance and rehabilitation, ensuring the long-term performance and reliability of the stormwater management system.

STORMWATER MANAGEMENT FACILITIES

Stormwater Management Facilities (SWMFs) across the City of Thunder Bay were inspected as part of the 2025 condition assessment program. Most facilities were found to be in good to fair condition, with routine maintenance needs related to sediment accumulation, vegetation overgrowth, and debris.

Some sites require more significant maintenance or repair due to structural deficiencies, erosion, or reduced hydraulic performance. The City will continue to monitor SWMF conditions through ongoing inspections and prioritize maintenance and repairs as needed to support system performance and long-term reliability.

2025 Stormwater Management Facility Inspections		
Site / Asset Name	**Overall Condition**	**Overall Description**
Churchill Pool – LID	Poor	Inlet sediment; outlet obstructed by vegetation; overflow has sediment/vegetation; erosion
Pioneer Ridge – Parking Lot LID	Poor	Vegetation surrounding inlet and overflow
CLE – Dry Pond – East Pond	Fair	Culvert rusting away
CLE – Dry Pond – North Pond	Fair	Missing pipe section; erosion hole
Cuyler St. – East – LID	Fair	Sand at inlet catchbasin
Delaney Arena Outlet Ditch & Dry Pond	Fair	Broken pipes between forebay and pond
George Burke Park – LID	Fair	Sediment/vegetation; improper overflow cap
Madeline & Theresa Street – Enhanced Swale	Fair	Vegetation camouflaging structures
Madeline and Theresa – LID	Fair	Inlet/overflow obscured; outlet has trash, cracks, erosion
River Terrace Pond	Fair	Inlet/overflow not located; outlet misaligned
Waterfront - Market Square - Infiltration System	Fair	Inlet full of mulch and sand
Bare Point Biofiltration	Good	Inlet rocks at low elevation
Beverly & High – LID	Good	Vegetation camouflaging structures
Duke and Van Norman – LID	Good	Vegetation camouflaging structures
Hinton Avenue @ Blanchard – LID	Good	Vegetation surrounding structures
Kinsmen Centre – LID	Good	Stone in inlet; trash and geotextile at outlet
MacDougall Street @ Algoma – LID	Good	Inlet full of sand/mulch
MacDougall Street South – LID	Good	Inlet full of sand/mulch
Maplewood Estates – Stage 2 Dry Pond	Good	Damaged inlet; vegetation blocking outlet
Port Arthur Stadium – Parking Lot – LID	Good	Missing overflow cap
Tarbutt St - Bio-retention facility	Good	Vegetation, standing water, sediment/trash
Tarbutt St. – Infiltration Trench	Good	Sediment/trash; rocks in pipe; missing cap
Waterfront Parking Lots – South of Pearl – Stage 1 – LID	Good	Sediment; damaged overflow cap
Winnipeg – Boulevard LID	Good	Vegetation obstructing; damaged overflow cover

OIL GRIT SEPARATORS

OGS systems are commonly implemented as a water quality treatment measure in areas where space constraints limit the feasibility of surface-based stormwater management practices. These systems provide treatment by removing sediments, oils, and floatable debris from stormwater runoff.

Oil-Grit Separator (OGS) units are inspected on a routine basis to assess overall condition and operational performance. Inspections are carried out to confirm general structural condition, evaluate sediment accumulation, and identify the presence of any visible oil sheen or suspended materials within the unit. These observations are used to inform maintenance requirements, including sediment removal and cleaning, to maintain effective treatment performance. The following table summarizes OGS inspections carried out in 2025.

2025 OGS Inspections		
Date	**Location**	**Overall Description**
5-DEC-2025	Parkdale Stage 4 - Western Unit Location is between 328 Cougar Cres. and 332 Cougar Cres.	Inlet has black floatable debris in front of weir. No noticeable oil. 8" of measured sediment.
5-DEC-2025	Location is at 300 Cougar Cres. It is a newly installed CDS unit.	Inlet has dark sediment debris in front of it. Little garbage and floatables are noted. No noticeable oil. 10" of measured sediment.
5-DEC-2025	Waterfront - Boaters Parking Lot - OGS#1 - northeast corner of parking lot	Inlet has sediment debris in front of weir. Some leaves and chunks of concrete. No noticeable oil. 4" of measured sediment.
5-DEC-2025	Waterfront - Boaters Parking Lot - southeast corner of parking lot	Sediment and debris in front of weir. Snow accumulation fails to provide more detail. No noticeable oil. 4" of measured sediment.
5-DEC-2025	570 Fort William Road - west limit of parking lot Transit Yard	Inlet has some black floatable debris in front of weir. No noticeable oil. Rust colour water within structure. 20" of measured sediment.

ADOPT A CATCHBASIN PROGRAM

The City of Thunder Bay, in partnership with EcoSuperior, continues to promote the Adopt-a-Catchbasin Program; a community-based initiative that supports stormwater system performance. The program encourages residents to help maintain catchbasins within their neighbourhoods by clearing leaves, debris, and sediment, particularly during periods of spring runoff and significant rainfall.

Routine maintenance of catchbasins by residents can assist in reducing localized ponding and improving surface drainage on roads and adjacent properties. By helping to keep catchbasins clear, participants contribute to the effective operation of the municipal stormwater system and support efforts to protect local waterways from the impacts of urban runoff.

The program provides residents with an accessible opportunity to participate in the care of municipal infrastructure and the local environment. To date, 386 catchbasins have been adopted by members of the community through the program. Information on registration, catchbasin locations, and program resources is available through EcoSuperior. Additional information is available on EcoSuperior's Adopt-a-Catchbasin Program webpage and the City of Thunder Bay's Stormwater Management Plan webpage.

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Description of Operating Problems and Corrective Actions

No significant operating issues or system-wide performance deficiencies were identified within the stormwater management system during the 2025 reporting period.

SUMMARY OF COMPLAINTS RELATED TO THE SEWAGE WORKS

The City of Thunder Bay's staff responded to 146 calls for storm sewer concerns in 2025. Each concern was investigated by City staff. Some incidents were identified as private drainage issues unrelated to the City of Thunder Bay's infrastructure, including basement flooding, weeping tile concerns, and blocked or inaccessible storm service connections. Several issues required maintenance and/or repairs by City staff, including plunging, jet rodding, flushing, and debris removal to restore flow in storm laterals and catchbasin leads. A smaller number of incidents required more significant repairs within the municipal system, including deteriorated or collapsed storm leads, localized blockages, and isolated surcharging or overland flooding concerns, which required further investigation and repair.

2025 Storm Sewer Cleanings			
Date	**Location**	**Date**	**Location**
11-Apr-25	Dunlop St. (storm main culvert cleaning)	30-Apr-25	Central Ave. / Memorial Ave. / Macdonnell St. (system + outfall)
12-Apr-25	Minot St. / Brook St. (CB to CB + cleaning)	01-May-25	Central Ave. / Memorial Ave. (McDonald's area system)
15-Apr-25	Caspian St. / Cypress Dr.	07-Oct-25	Hodder Ave. (mid-block MH / corridor to Hallam)
15-Apr-25	Scotland St. / Nor'wester Dr.	07-Oct-25	Strathcona Ave. / Arundel St. (outfall area)

Summary of Alterations to the Authorized System

MacDonell St

New storm sewer infrastructure was installed along MacDonell Street between Central Avenue and Squier Street. The works included approximately 391 m of storm sewer ranging from 375 mm to 750 mm in diameter.

Victoria Avenue Revitalization

Stormwater infrastructure improvements were completed as part of the Victoria Avenue Revitalization project, including new catchbasins, leads, and maintenance holes to support the reconstructed corridor between Archibald Street North and Brodie Street South, as well as pedestrian upgrades along Syndicate Avenue. Existing trunk storm sewers (600 mm to 1050 mm diameter) were maintained.

Summary of Spills or Abnormal Discharge Events

Hodder Avenue / Arundel Street

There was one spill of sewage on October 7, 2025. While clearing a blockage in a 250 mm diameter sanitary sewer on Hodder Ave, a brief sewer surcharge occurred, causing sewage to be spilled onto the roadway and into storm catchbasins; the sewage ultimately discharged overland to the environment at an outfall located approximately at the intersection of Strathcona Ave and Arundel St. The City of Thunder Bay notified the Spills Action Centre and completed cleanup and remediation, including cleaning affected streets, storm infrastructure, and approximately 40 m of the outfall.

Cumberland Avenue / McVicar Street

On August 24, 2025, chlorinated distribution water from an open ¾-inch poly whip in the Cumberland roundabout area flowed across a parking lot and into McVicar's Creek. The whip had been intended to remain shut off as a future flushing/sampling provision, but the curbstop was found to be missing, resulting in unintended discharge. The removal of the curbstop and resulting flow are suspected to have been caused by vandalism at the worksite. Immediate dechlorination measures were implemented on August 24, 2025, including placement of dechlorination pucks and installation of a dechlorination unit on the active ¾-inch whip.

Follow-up corrective actions on August 25, 2025 included operator oversight, installation of a new curbstop, shut-off of the water supply, and burying and marking the whip to prevent further unauthorized access. The incident was reported to the MECP Spills Action Centre.

Summary of Efforts Taken to Improve Performance

The City of Thunder Bay's Stormwater Management Plan was developed in 2016, providing a long-term framework to guide stormwater management infrastructure planning, environmental protection, and sustainable surface water management across the City. The Plan establishes a 20-year roadmap focused on improving water quality, managing runoff quality and quantity, protecting natural systems, and enhancing system resilience to climate change.

As part of this Plan, detailed Hydrologic and Hydraulic models of the stormwater management system within the City have been developed. Base models were generated for seven watersheds, including the watersheds of Current River, McVicar Creek, McIntyre River, Neebing River, Pennock Creek, Kaministiquia River, and Mosquito Creek. Hydraulic models were developed in PCSWMM and informed by as-built drawings, LiDAR-derived digital elevation models and aerial imagery. These models are used to inform future stormwater and natural resource management decisions. The City is committed to utilizing these tools to guide capital improvements, retrofit projects, and maintenance activities to support the effective operation of the stormwater management system.

The City is committed to completing updated inspections on all oil-grit separators within the 2026 calendar year, and prioritizing clean-outs and maintenance where required.

The City is also committed to completing design remediations for any stormwater facilities identified in poor condition in 2026 and prioritizing restoration and maintenance works as part of the 2027 (or prior) capital budget program.

2025

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