Quality Management System for Drinking Water 2024 Annual Report

The Drinking Water Quality Management Standard (DWQMS) requires the City of Richmond Hill to establish and maintain a Quality Management System (QMS) that conforms to the Standard.

The City owns a stand-alone drinking water distribution system, QMS policies and procedures govern the activities and services performed by the City. The DWQMS also requires that Members of Council are made aware to the following areas within the QMS, as they are:

- Review and Provision of Infrastructure
- Infrastructure Maintenance, Rehabilitation and Renewal Summary
- Management Review Outcomes
- Third-Party Audit Outcomes and Accreditation Renewal
- Organizational Structure, Roles, Responsibilities and Authorities

1. Review and Provision of Infrastructure

Council is being communicated on the status of the programs in place to rehabilitate and renew the infrastructure of the drinking water system through the 10 Year Capital Forecast for Roads, Water and Wastewater.

For the 2024 calendar year there were 4242 metres of watermain rehabilitated/renewed on the following streets: Cedar Ave. (200 m), Bedford Park Ave. (380 m), Rosemary Ave. (105 m), Blackforest Dr. (1002 m), Acorn Rd. (70 m) and Carville Rd. (2485 m).

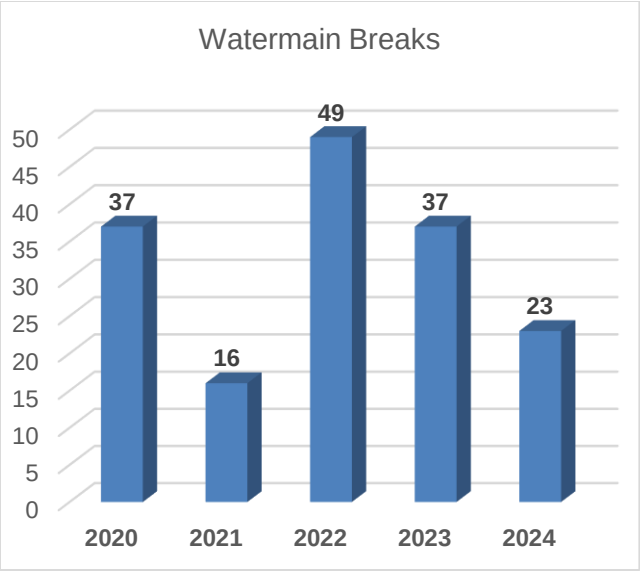
2. Infrastructure Maintenance, Rehabilitation and Renewal Summary

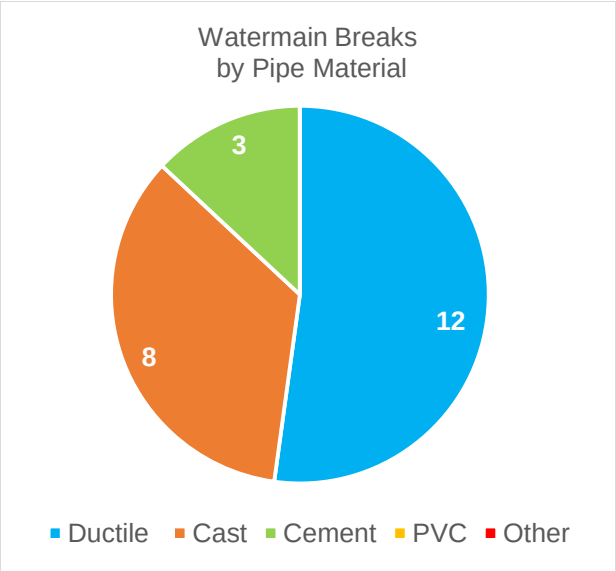
The following is a summary of the various infrastructure maintenance programs the City of Richmond Hill has in place to maintain, rehabilitate, and renew the infrastructure of the drinking water system.

Watermain Maintenance Program:

Watermain Repairs - Repair of watermains following pipe breakage.

For the 2024 year we had a total of 23 watermain breaks, most of the breaks were from ductile iron and cast iron watermains.



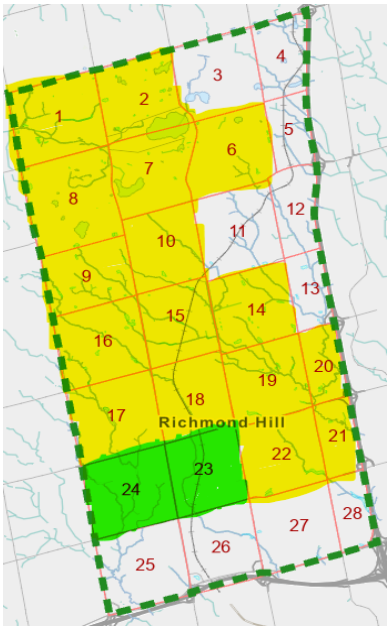


Valve Maintenance and Inspection Programs:

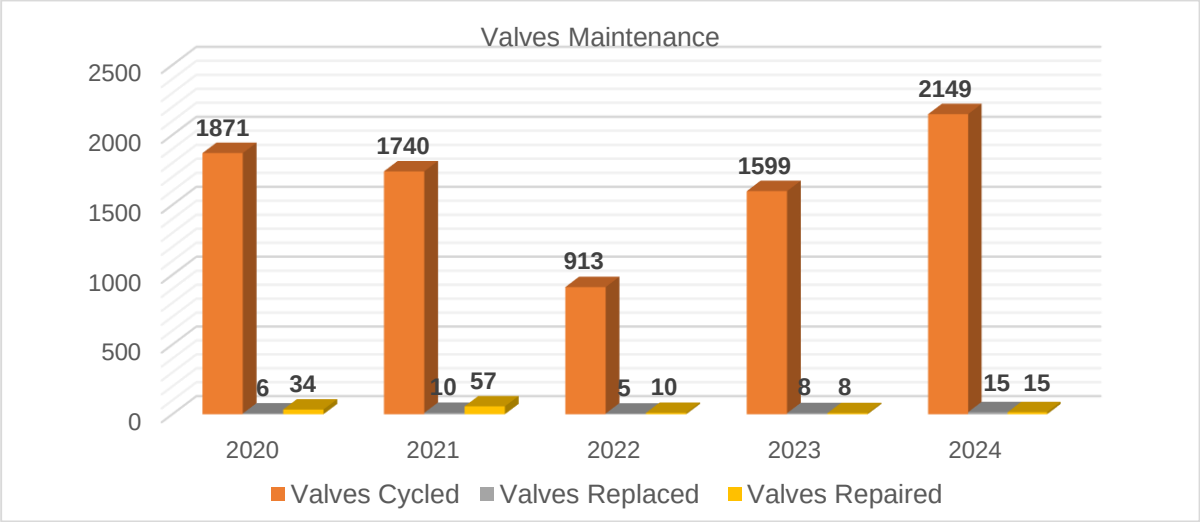
Valve Cycling and Inspection - A preventative program that exercises all valves in the distribution system to locate and identify inoperable, defective, or broken valves.

In 2024, a total 2149 valves were cycled within City Block 16 to 22 and partially completed in Block 23 and 24; adding to the previous Blocks (1-15) completed in 2022 and 2023.

The five-year valve cycling program started in 2022 and as our target is to cycle between 1000-1200 valves per year, this means that we are on target to achieve our goal of cycling all valves in the City by 2026.



Valve Repair and Replaced – Repair/replacement of inoperable, defective, or broken valves.

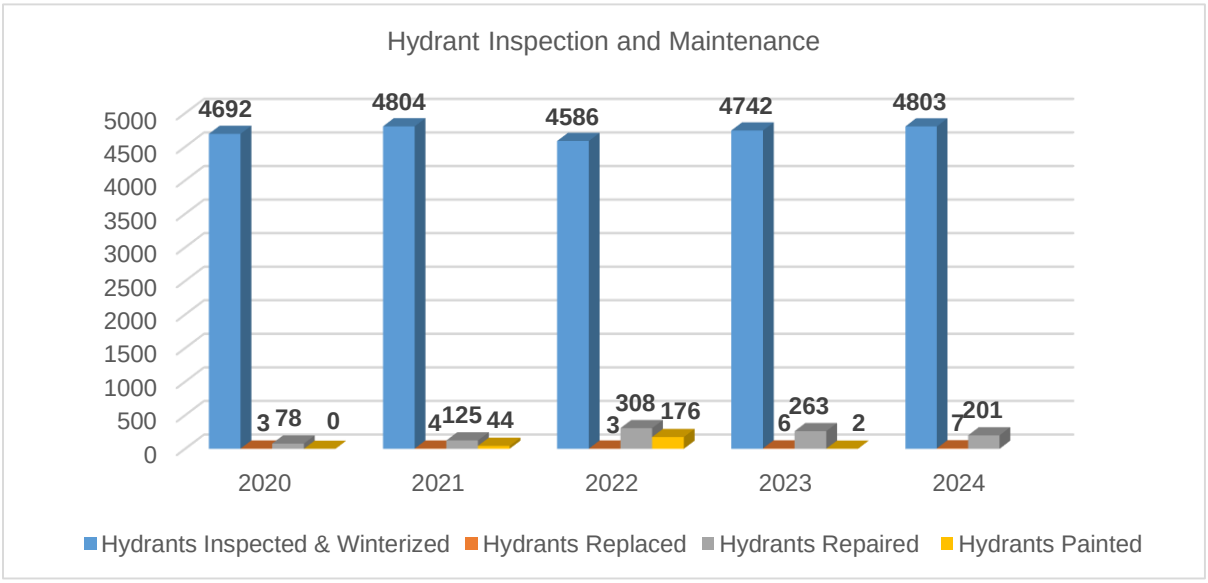


Hydrant Maintenance and Inspection Programs:

Hydrant Inspection and Winterizing – An annual preventative program to identify inoperable, defective, or broken hydrants while maintaining operability.

Hydrant Painting – An annual preventative program to protect hydrants from corrosion and maintain visibility.

Hydrant Repair and Replacement - Repair/replacement of inoperable, defective, or broken hydrants.

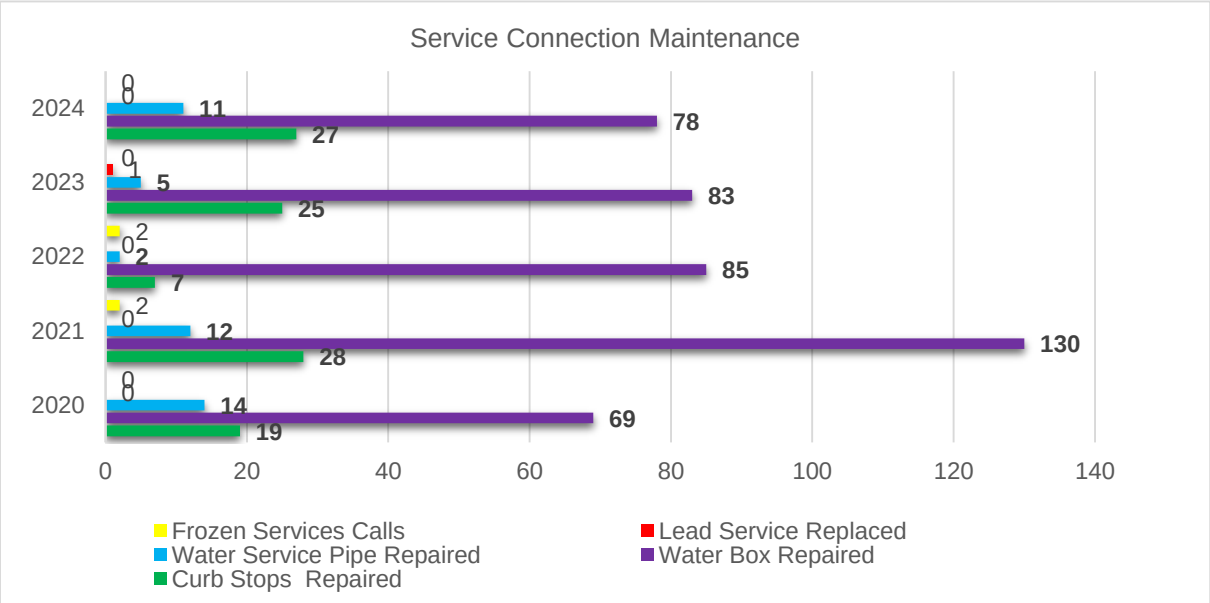


Service Connection Maintenance Programs:

Curb Stop Repairs - Repairs of inoperable, defective, or broken curb stops.

Water Service Pipe Repairs - Repairs and/or replacement of broken water service pipes. If the water service is lead pipe, this is then replaced up to the property line.

Frozen Services - Thawing of frozen water service piping.



3. Management Review Outcomes

Management Review meeting took placed on December 16, 2024. The following table presents the outcomes of the management review:

Summary of Deficiencies	• Parameter exceeded for the 24 adverse drinking water test result was: Total coliform (TC count). • Upon flushing, sample test results received for all locations passed the Ontario Drinking Water Quality Standard. (Please see 2024 Drinking Water Annual Report)
Summary of Decisions	Incidents of Adverse Drinking Water Test Year-to-date there have been 24 adverse drinking water test, with 18 of them coming from final connection within new development or capital projects (9 were original location and 9 were resamples that failed). ○ Revisit sampling procedure and protocol to avoid contamination. ○ Provide training to all staff involve in taking the samples. ○ Using torch to kill bacteria at sample station/location. ○ Reach out to neighboring municipalities for best practices to take the sample, location and/or process. Resources needed to maintain QMS RFP for QMS Software Solution was cancelled since neither company met all the requirements. QMS Rep to work with IT to develop in-house solution for various portions of the Management System:

<table>
<tr><td></td><td colspan="2">Document and Records Control – SharePoint
Training hours – Maximo
Operational Performance for Management Review reporting – Power BI
<u>Results of Infrastructure Review</u>
From year to year, there is about 2 kilometres of watermain been replaced, which means that it will take about 40 years to replace all metallic pipe in the City. Furthermore, some projects will be delayed until the Region is ready to proceed on these locations.
Replacement should be based on the condition of the watermain and not on the road condition above.
Better communication and coordination are necessary with York Region.</td></tr>
<tr><td rowspan="2">Update on Previous Action Items</td><td><u>Operational Performance</u>
Managers (from Top Management) to discuss program creation to utilize hydraulic model for chlorine dissipation and water age within distribution system.</td><td>Ongoing
Model for chlorine dissipation and water age showed suboptimal results. Study will be performed again.</td></tr>
<tr><td><u>Resources needed to maintain the Quality Management System</u>

QMS requires a software solution and Water Division will work with the IT Dept. and Procurement to put together a Request for Proposal (RFP).</td><td>Cancelled
Posted RFP on August 2-30, 2024, only two companies bid on the project: however, neither one met all the requirements.</td></tr>
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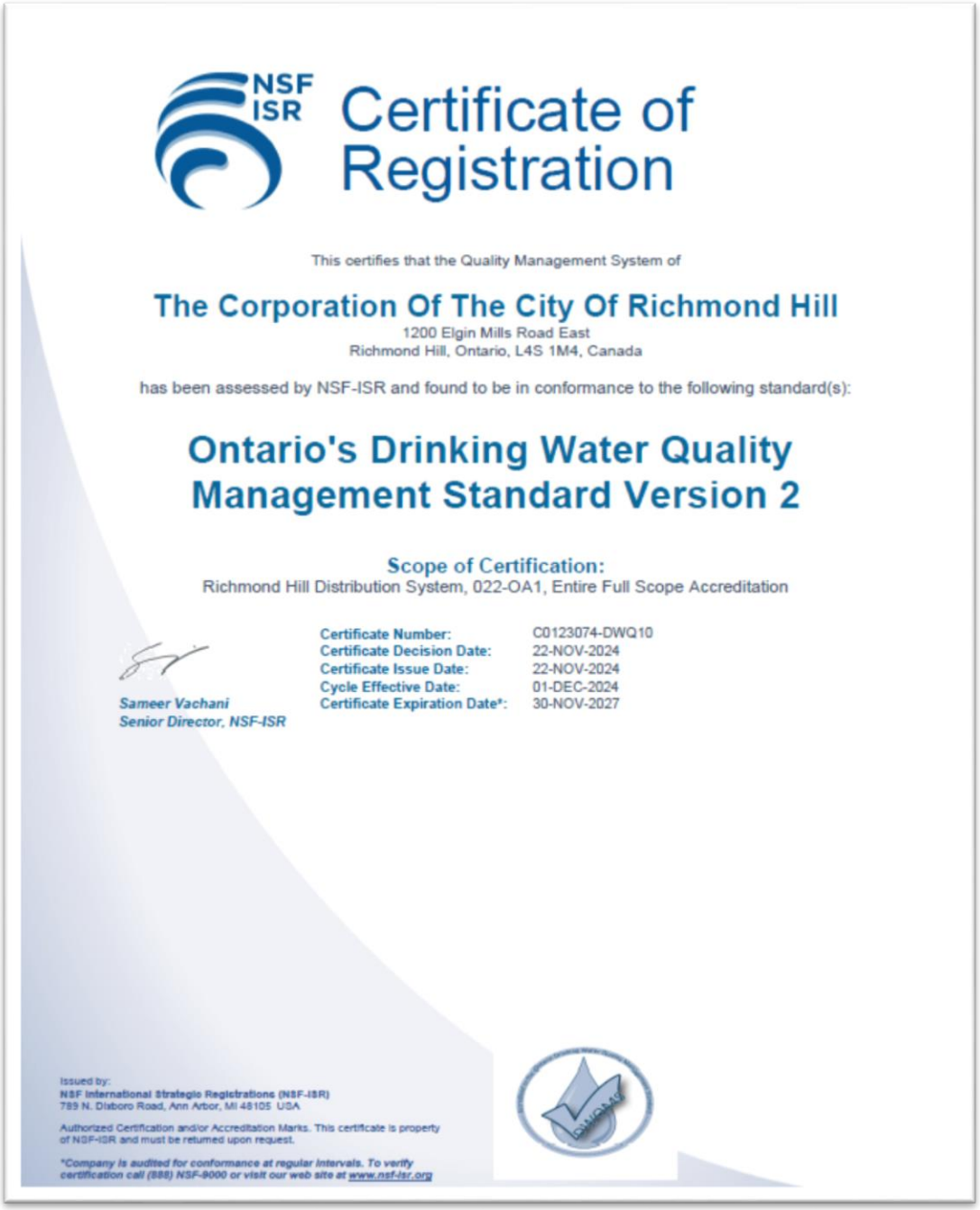
4. Third-Party Audit Outcomes and Accreditation Renewal

The Surveillance Audit took placed on October 24-25, 2023. Two minor non-conformances were identified and 2 opportunities for improvement:

Element	**Non-conformances**
Element 7 Risk Assessment	Not all potential hazardous events and associated hazards, as identified in the Ministry of Environment and Climate Change document titled Potential Hazardous Events for Municipal Residential Drinking Water Systems dated Feb. 2017 as it may be amended, are considered in performing risk assessment.
Element 13 Essential Supplies & Services	No evidence of listing of a certification agency as required by the contracts is available on file for a capital contract and inventoried components contract.
Element	**Opportunity for improvement**
Element 8 Risk Assessment Outcomes	While Operating Authority is conforming to the requirements of Element 8 Table column headers needs review and amendment to align with the DWQMS Standard requirement 8 d) to h).

Element 21 Continual Improvement	While Operating Authority is conforming to the requirements of Element 21 opportunity is available to record sufficient evidence relating to implementation of actions planned and its effectiveness before corrective actions are judged closed.

Upon accepting resolution to the above non-conformities and opportunities for improvement, NSF IRS issued the accreditation of our QMS, valid through November 30, 2027.



NSF ISR

Certificate of Registration

This certifies that the Quality Management System of

The Corporation Of The City Of Richmond Hill

1200 Elgin Mills Road East
Richmond Hill, Ontario, L4S 1M4, Canada

has been assessed by NSF-ISR and found to be in conformance to the following standard(s):

Ontario's Drinking Water Quality Management Standard Version 2

Scope of Certification:
Richmond Hill Distribution System, 022-OA1, Entire Full Scope Accreditation

Sameer Vachani
Senior Director, NSF-ISR

Certificate Number:	C0123074-DWQ10
Certificate Decision Date:	22-NOV-2024
Certificate Issue Date:	22-NOV-2024
Cycle Effective Date:	01-DEC-2024
Certificate Expiration Date*:	30-NOV-2027

Issued by:
NSF International Strategic Registrations (NSF-ISR)
789 N. Dixboro Road, Ann Arbor, MI 48105 USA

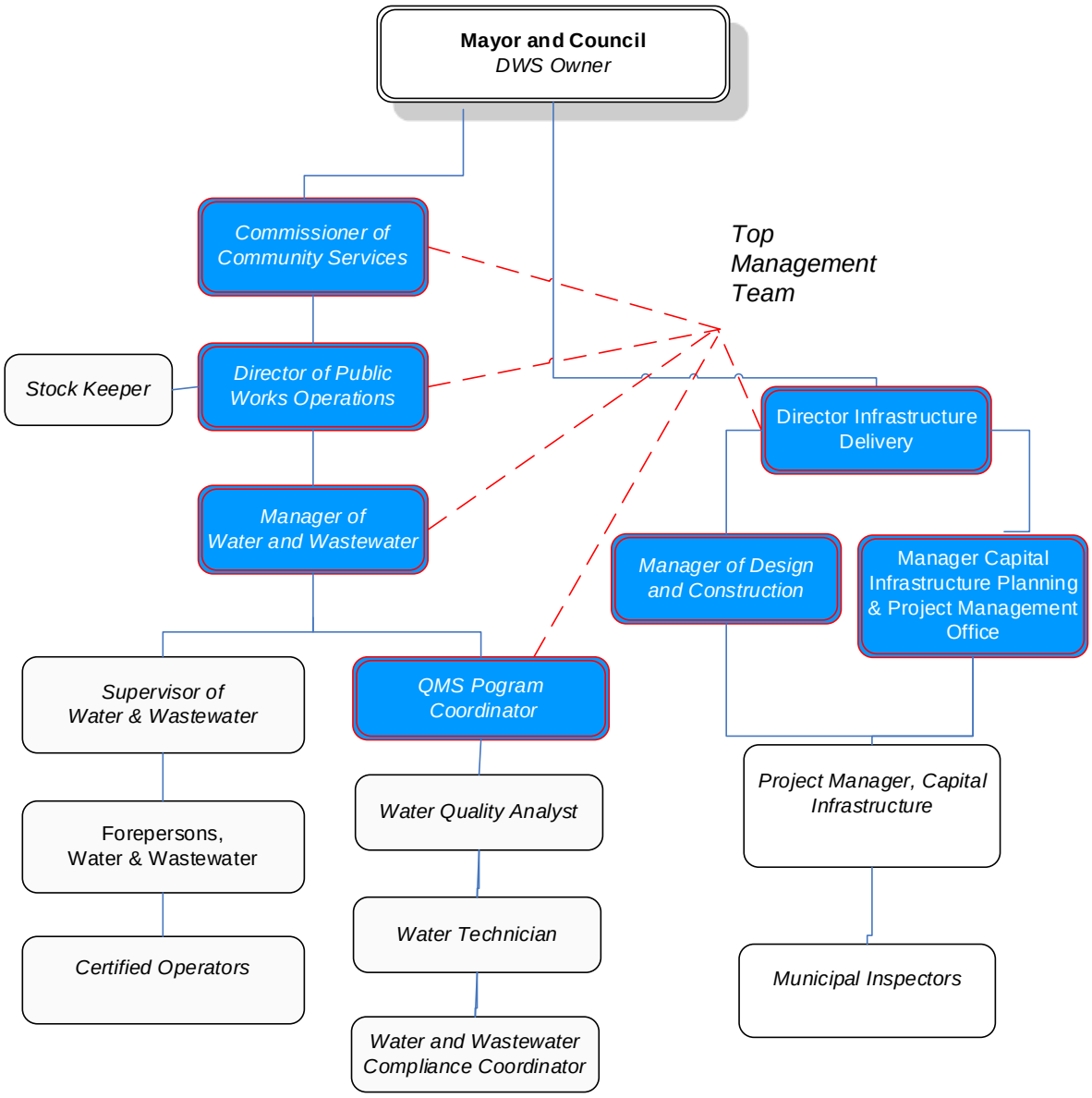
Authorized Certification and/or Accreditation Marks. This certificate is property of NSF-ISR and must be returned upon request.

**Company is audited for conformance at regular intervals. To verify certification call (888) NSF-9000 or visit our web site at www.nsf-isr.org*

5. Organizational Structure, Roles, Responsibilities and Authorities

Members of Council as the “Owner” of the drinking water distribution system are responsible for ensuring their drinking water system meets all prescribed drinking water quality standards, operate in accordance with the *Safe Drinking Water Act* and its regulations, keep a fit state of repair, comply with all sampling, testing, and monitoring requirements, and meet all reporting requirements.

QMS Top Management consist of: Commissioner of Community Services, Director Public Works Operations, Director Infrastructure Delivery, Manager of Water and Wastewater, Manager of Design and Construction, Manager Capital Infrastructure Planning & Project Management Office and QMS Program Coordinator.



Roles and Responsibilities in accordance with the Safe Drinking Water Act:

Section 11 – Duties of Owner and Operating Authorities	• Ensure that drinking water meets prescribed standards. • Ensure that the system is operated by qualified persons • Ensure that all sampling, testing and monitoring requirements are complied with • Use licensed (accredited) labs.
Section 14 – Agreement with accredited operating authority	• Municipal officials with decision-making authority remain personally liable, even when the system is run by a corporate entity • System owners are not relieved of duty to comply, even if operations are delegated • Owners must ensure the Operating Authority is carrying out its responsibilities

Section 19 – Standard of Care, Municipal Drinking Water System	• Those with decision-making authority:
	  ○ Exercise care to ensure the protection and safety of the users of the system
	  ○ Act honestly, competently and with integrity
	• May rely in good faith on a report of an engineer, lawyer, accountant, or other qualified professional.
	• Enforcement of the Standard of Care
	  ○ A provincial officer can lay a charge against a person to whom the standard applies
	  ○ Maximum penalties - $4 million fine and potential imprisonment for up to five years
	  ○ Penalties are decided by the courts based on the severity and consequences of the offence

In the City of Richmond Hill Council assumes "Owner" responsibilities and authorities outlined in the *Safe Drinking Water Act* and the DWQMS which include attending the "Responsibilities Under the Statutory Standard of Care: Safe Drinking Water Act" training session at minimum once per Council term (four years).	

Roles and Responsibilities during an Emergency Response:

Level 1	Minor Operational Impact or Interruption of Service/System	Certified Operator Supervisor Overall Responsible Operator (ORO) /Manager	Verbal notification of Level 1 emergency Escalation
Level 2	Water Quality and/or Large Volume Consumer Affected	Certified Operator Supervisor Overall Responsible Operator (ORO) /Manager	Verbal notification of Level 2 emergency Escalation Public Health and MECP Notification
Level 3	Immediate Danger to Health or Property	Certified Operator Supervisor Overall Responsible Operator (ORO) /Manager Director Public Works Top Management Communication Services	Verbal notification of Level 3 emergency Escalation Public Health and MECP Notification Top Management in consultation with the Communication Services shall decide upon the public communication process.
Level 4	City-wide Emergency	Certified Operator Supervisor Overall Responsible Operator (ORO) /Manager Director Public Works Top Management Communication Services Fire Chief Mayor and Council	Verbal notification of Level 4 emergency Escalation Public Health and MECP Notification City-wide emergency communication coordinated by the Communications Services Department