Township of South Frontenac
Council Meeting Agenda

TIME: 6:30 PM,
DATE: Tuesday, December 19, 2023
PLACE: Council Chambers/Virtual Via Zoom .

1. *Call to Order*

a) Resolution

2. *Declaration of pecuniary interest and the general nature thereof*

3. *Approval of Agenda*

a) Resolution

4. ***Scheduled** Closed Session*

a) Resolution - That Council resolve itself into the Committee of the Whole "Closed Meeting" to consider the following item:
a) Litigation or potential litigation, including matters before administrative tribunals, affecting the municipality or local board - By-Law Enforcement

b) Litigation or potential litigation, including matters before administrative tribunals, affecting the municipality or local board - By-Law Enforcement

c) Resolution - That Council rise from the Committee of the Whole "Closed Meeting" without reporting.

5. *Recess*

6. *Public Meeting*

a) Resolution - Public Meeting to Order (Proposed Amendments to By-law 2017-76)

- The Council of The Corporation of the Township of South Frontenac will host a public meeting on December 19, 2023, at 7 p.m. on proposed amendments to By-law 2017-76 which provides for the governing the proceedings of Council, the conduct of members and the calling of meetings. The amendments are related to proposed changes to allow staff delegated authority to remove holding provisions and to clarify the Notice of Motion process.

b) Notice of Collection

c) Public Meeting - Proposed Amendments to By-law 2017-76.
(See Business Item 12. B)

d) Resolution - Close Public Meeting

e) Resolution - Public Meeting to Order (Zoning By-law Amendments) 6 - 49

f) Notice of Collection

g) Public Meeting for Zoning By-law Amendment Application - PL-ZBA-2023-0133, Broome and Malloy, 4839 Noble Lane 50 - 55

- This report provides Council with information about Zoning By-law Amendment Application PL-ZBA-2023-0133 for 4839

Noble Lane. If approved, the zone on the property would be changed from Limited Service Residential – Waterfront (RLSW) to a Limited Service Residential – Waterfront Special Provision zone (RLSW-XX).

h) Public Meeting for Zoning By-law Amendment Application - PL-ZBA-2023-0131, AlinkA Group Inc., 41 Bresee Road — 56 - 62
- This report provides Council with information about Zoning By-law Amendment Application PL-ZBA-2023-0131 for 41 Bresee Road. If approved, the zone on the property would be changed from Rural (RU) to a Rural Special Provision zone (RU-XX).

i) Public Meeting for Zoning By-law Amendment - Application PL-ZBA-2023-0102, SNZ Holdings (Fotenn), 1425 Rutledge Road — 63 - 69
- This report provides Council with information about Zoning By-law Amendment Application PL-ZBA-2023-0102 for 1425 Rutledge Road. If approved, the zone on the property would be changed from Rural (RU) to a Rural Special Provision zone (RU-XX).

j) Zoning By-law Amendment Application - PL-ZBA-2023-0092, Itterman, 2348 Sands Road, Storrington District — 70 - 77
- This report provides Council with information about Zoning By-law Amendment Application PL-ZBA-2023-0092 for 2348 Sands Road. If approved, the zone on the subject lands would be changed from Urban Residential – First Density (UR1) to Urban Residential – First Density – Special Provision (UR1-25 and UR1-26).
- Council will review the proposal and invite public input at the statutory public meeting. Staff are recommending that Council pass a by-law during the Council meeting in which the public meeting is held, per Procedural By-law as Amended by By-law 2023-44, as the planning matter is technical in nature (i.e. it fulfills a condition of consent approval).

k) Resolution - Close Public Meeting

7. *Delegations*

8. *Briefings*

9. *Approval of Minutes*

a) Resolutions — 78 - 81

10. *Reports Requiring Action*

a) Drinking Water Quality Management System: Management Review Report and Endorsement of Operational Plan — 82 - 137

That Council receive the Sydenham Drinking Water System Management Review Summary Report 2022, Management Review Meeting Minutes and Audit Report; and

That Council re-endorse the Operational Plan for the Sydenham Drinking Water System and authorize the Mayor and Clerk to sign the Owner and Top Management Endorsement of the Operational Plan for Sydenham's Drinking Water Supply Systems document showing Council's endorsement of the plan.

b) 2024 Budget — 138 - 159

That Council approve and adopt the combined 2024 Capital and Operating budgets requiring $22,474,275 to be raised by taxation, as attached.

c) Asset Retirement Obligations (ARO) Report 160 - 169

That Council approves the Asset Retirement Obligation Policy presented with this report that establishes guidelines to ensure compliance with the new standard PSAB PS 3280.

d) Cloud Server Migration RFP 170 - 172

That Council support awarding the Migration to a Cloud- Hosted Server contract in the amount of $85,104.74 including non-rebatable HST to IC 360 Solutions Inc.

e) 2024 Summer Student Compensation Change 173 - 174

That Council provide approval for the Summer Student Wage Grid for 2024 itemized under Table 1 of the Staff Report.

f) Request for Speed Limit Reduction – Storrington Public School 175 - 193
- The purpose of this report is to provide background on a request for a speed limit reduction on Battersea Road that was recently received from the Storrington Public School.

g) Updated Asset Management Plan 194 - 423

That Council approve the 2023 Asset Management Plan as attached in the staff report.

11. *Advisory Committee Reports or Minutes*

12. *Reports Requiring Approval of By-laws*

a) Dedication of 0.3 metre Reserves Abutting Orser Street, Subdivision Plan 1548 424 - 430

That By-law 2023-100 to dedicate portions of the 0.3 metre reserve along Orser Street, Plan 1548, legally described therein, be given first and second reading; and

That By-law 2023-100 be given third reading, signed and sealed.

b) Proposed Amendments to Council Procedure By-law, By-law 2017-76, As Amended regarding Delegated Authority (holding symbols) and Notice of Motion Process 431 - 437

That By-law 2023-92, being a By-law to amend By-Law 2017-76, As Amended, "A By-Law To Provide For Governing The Proceedings Of The Council, The Conduct Of Members And The Calling Of Meetings", be given first and second reading; and

That By-law 2023-92 be given third reading, signed and sealed.

c) Deeming By-law Applications PL-LC-2022-0089 (St. Pierre), PL-LC-2022-0090 (Conn), PL-LC-2022-0151 (Stover), Plan 716 438 - 444

That By-laws 2023-101, 2023-102 and 2023-103 deeming the properties described as Lots 53, 54, and 55, Plan 716, District of Storrington, Township of South Frontenac not be lots in a plan of subdivision, be given first and second reading; and

That By-laws 2023-101, 2023-102 and 2023-103 be given third reading, signed and sealed.

d) Parkland Dedication By-law Update 445 - 450

That the report regarding the new Parkland Dedication By-law be received; and,

That the new Parkland Dedication By-law (By-law 2023-104) included with this report as Attachment 1 be given first and second reading; and,

That By-law 2023-104 be given third reading, signed and sealed.

e) Zoning By-law Amendment Application - Z-21-29, Estate of Everett Orser (Keith Orser), Part of Lot 3, Concession 8, Loughborough 451 - 461

That By-law 2023-105 to amend the zoning on the lands at Part of Lot 3, Concession 8, District of Loughborough, Township of South Frontenac be given first and second reading; and

That By-law 2023-105 be given third reading, signed and sealed.

f) Zoning By-law Amendment Application - PL-ZBA-2023-0092, Itterman, 2348 Sands Road, Storrington District 462 - 469

- This report provides Council with information about Zoning By-law Amendment Application PL-ZBA-2023-0092 for 2348 Sands Road. If approved, the zone on the subject lands would be changed from Urban Residential – First Density (UR1) to Urban Residential – First Density – Special Provision (UR1-25 and UR1-26).
- Council will review the proposal and invite public input at the statutory public meeting. Staff are recommending that Council pass a by-law during the Council meeting in which the public meeting is held, per Procedural By-law as Amended by By-law 2023-44, as the planning matter is technical in nature (i.e. it fulfills a condition of consent approval)

That By-law 2023-106 to amend the zoning on lands known as 2348 Sands Road, Part of Lot 8, Concession 9, District of Storrington, Township of South Frontenac be given first and second reading; and

That By-law 2023-106 be given third reading, signed and sealed.

13. *Reports for Information*

14. *Committee of the Whole*

15. *Information Items*

16. *Notice of Motions*

17. *Rise and Report regarding County Council and External Boards*

a) County Council

b) Police Services Board

c) Cataraqui Conservation

d) Quinte Conservation

e) Rideau Valley Conservation Authority

f) Frontenac Community Arena Board

18. *Announcements/Statements by Councillors*

19. *Closed Session (if requested)*

a) Resolution - That Council resolve itself into the Committee of the Whole "Closed Meeting" to consider the following items:
a) Approval of the December 5, 2023 Committee of the Whole "Closed Meeting" minutes.
b) A position, plan, procedure, criteria or instruction to be applied to any negotiations carried on or to be carried on by or on behalf of the municipality or local board.
c) Personal matters about an identifiable individual, including municipal or local board employees - Recruitment.

b) Approval of the December 5, 2023 Committee of the Whole "Closed Meeting" minutes.

c) Personal matters about an identifiable individual, including municipal or local board employees - Recruitment.

d) A position, plan, procedure, criteria or instruction to be applied to any negotiations carried on or to be carried on by or on behalf of the municipality or local board.

e) Resolution - That Council rise from the Committee of the Whole "Closed Meeting" without reporting.

20. *Confirmatory By-law*

a) Resolution 470

21. *Adjournment*

a) Resolution

SOUTH FRONTENAC

Public Meeting

under the Planning Act

Applications for Zoning By-law Amendment

PL-ZBA-2023-0092

PL-ZBA-2023-0102

PL-ZBA-2023-0131

PL-ZBA-2023-0133

Tuesday, December 19, 2023

7:00 p.m. Council Meeting

Public Meeting Statement

- The purpose of this public meeting is to hear comments on Zoning By-Law Amendment Applications PL-ZBA-2023-0092, PL-ZBA-2023-0102, PL-ZBA-2023-0131 and PL-ZBA-2023-0133.
- If a person or public body does not make oral or written submissions at this public meeting, or make written submissions to South Frontenac Township before any by-law is passed, the person or public body may not be added to the hearing of an appeal before the Ontario Land Tribunal unless, in the opinion of the Tribunal, there are reasonable grounds to do so.
- If you wish to be notified of the decision of Council in respect to the application, you must submit a written request to the Clerk by email care of planning@southfrontenac.net. This will also entitle you to be advised of an Ontario Land Tribunal appeal.
- Anyone may appeal the decision to the Ontario Land Tribunal. The appeal must be filed with the Clerk within 20 days of the notice of decision. The notice of appeal must set out the reasons for the appeal and be accompanied by the fee required by the Tribunal.

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Meeting Format

- Planner reviews proposal and delivers report
- Open discussion
  - Council questions
  - Public questions and comments
  - Council comments
- Close public meeting

PL-ZBA-2023-0133

Applicant: Frances Broome and Gary Malloy

Property: 4839 Noble Lane, Battersea

Location

Loughborough View Rd
Milburn Creek
125 m
Battersea
Noble Ln
Wellings Ln
Doris Smith Ln
150 m
125 m
Milburn Creek
Cedar

Proposal

- Designation – Settlement Area
- Existing Zone – RLSW
- Proposed Zone – RLSW-XX
- Add accessory uses
  - Chicken Coop
  - Keeping a maximum of five (5) chickens
- Add Zone Provisions for Chicken Coop
  - 70m Highwater Mark Setback
  - 70m Front Yard
  - 15m Interior Side Yard

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View from Shoreline

View from Lane

Chicken Coop

The chickens

Photo Credit: Frances Broome

Department and Public Comments

- Public Services, Building Services and Cataraqui Conservation – no comments
- Public – several individuals on Noble Lane and the immediate area wrote in support of the application, noting
  - Noble Lane runs over a farm property where several different type of livestock are raised
  - Keeping a few chickens in the backyard is in line with the rural character of the Township,
  - The chickens are kept in an enclosed area
  - These particular chickens are more like pets than livestock
  - Chickens should be allowed anywhere in Township as long as they are treated humanely and are not a nuisance

Policy Framework

Provincial Policy Statement

Frontenac County Official Plan

Township of South Frontenac Official Plan

- Healthy, integrated and viable rural areas
- Waterfront areas
- Agricultural uses

Next Steps

- South Frontenac Council should receive comments from the public
- A report with a recommendation will be brought to a future Council meeting

Open Discussion

1. Council Questions
2. Public Questions and Comments
3. Council Comments

If you are joining virtually and would like to speak:

- Use “Raise Hand” feature at the bottom of your screen.
- Dial*9 (star nine) for phone.
- Please wait to speak until you hear your name and your microphone has been unmuted.

SOUTH FRONTENAC

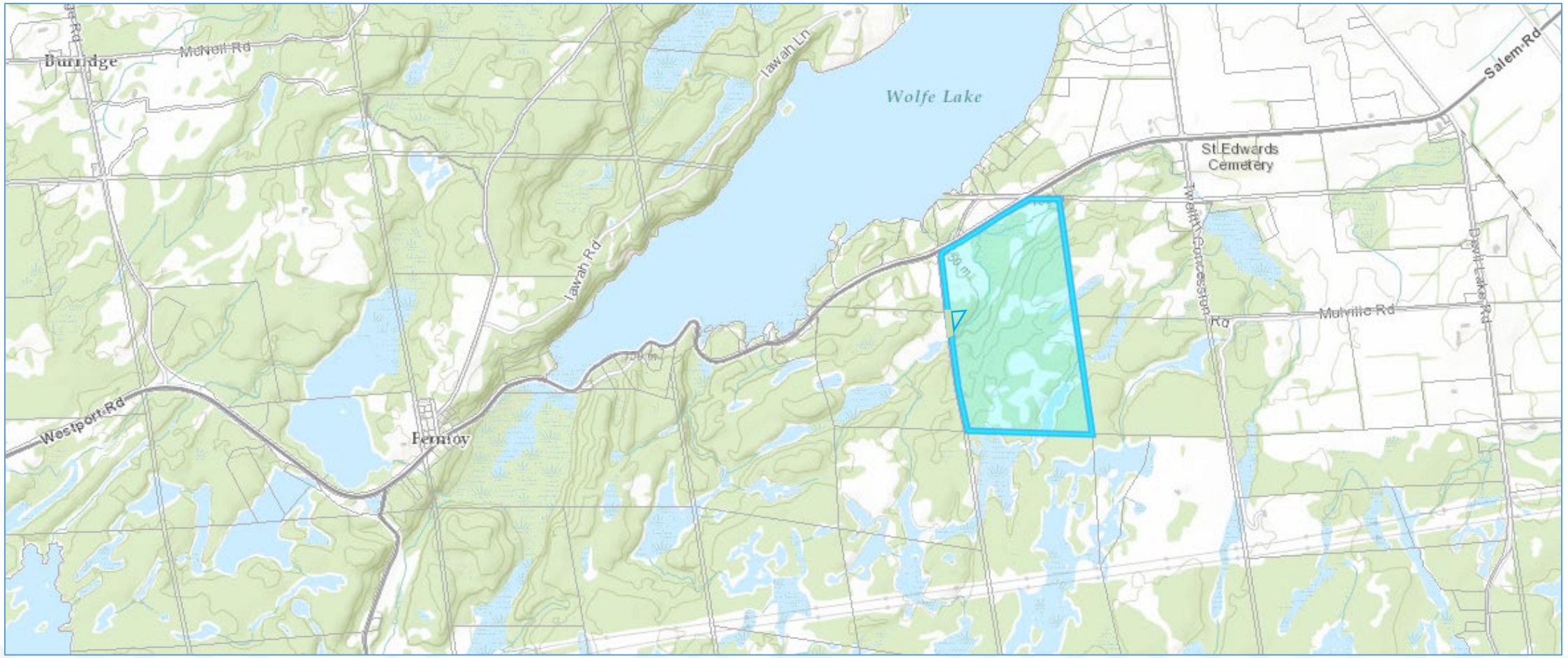
PL-ZBA-2023-0131

Applicant: AlinkA Group Inc.

Agent: Kim Donovan

Property: 41 Bresee Road

Location


Burridge
McNeil Rd
Iawah Ln
Wolfe Lake
Salem Rd
St Edwards Cemetery
Iawah Rd
Twelfth Concession Rd
Melville Rd
Davis Lake Rd
Westport Rd
Fernloy

Proposal

- Designation – Rural and Environmental Protection
- Existing Zone – RU
- Proposed Zone – RU-XX
- Add uses:
- A community service and community facility
    - Ex. learning centre, summer camp, dormitory, campsites, associated cooking and eating facilities, associated play areas, accessory uses
- A retail store
- A craft shop
- A studio
- A nursery or garden centre
- A resort, including a health spa
- A private or commercial club

View from Westport Road

Department and Public Comments

- Public Services – no objection, technical review and feedback on matters such as traffic, parking and stormwater management would be provided at the site plan control stage if/when it is applied
- Building Services – comments regarding Ontario Building Code requirements are forthcoming
- Public – Mr. Scanlan (74 Bresee Road) noted that the map identifies the proposed zone would apply to one of his properties, and does not want the zone changed for his property.

Policy Framework

Provincial Policy Statement

Frontenac County Official Plan

Township of South Frontenac Official Plan

- Leverage rural amenities and assets
- Promote diversification of economic base and employment opportunities
- Provide opportunities for sustainable and diversified tourism

Next Steps

- South Frontenac Council should receive comments from the public
- A report with a recommendation will be brought to a future Council meeting

Open Discussion

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PL-ZBA-2023-0102

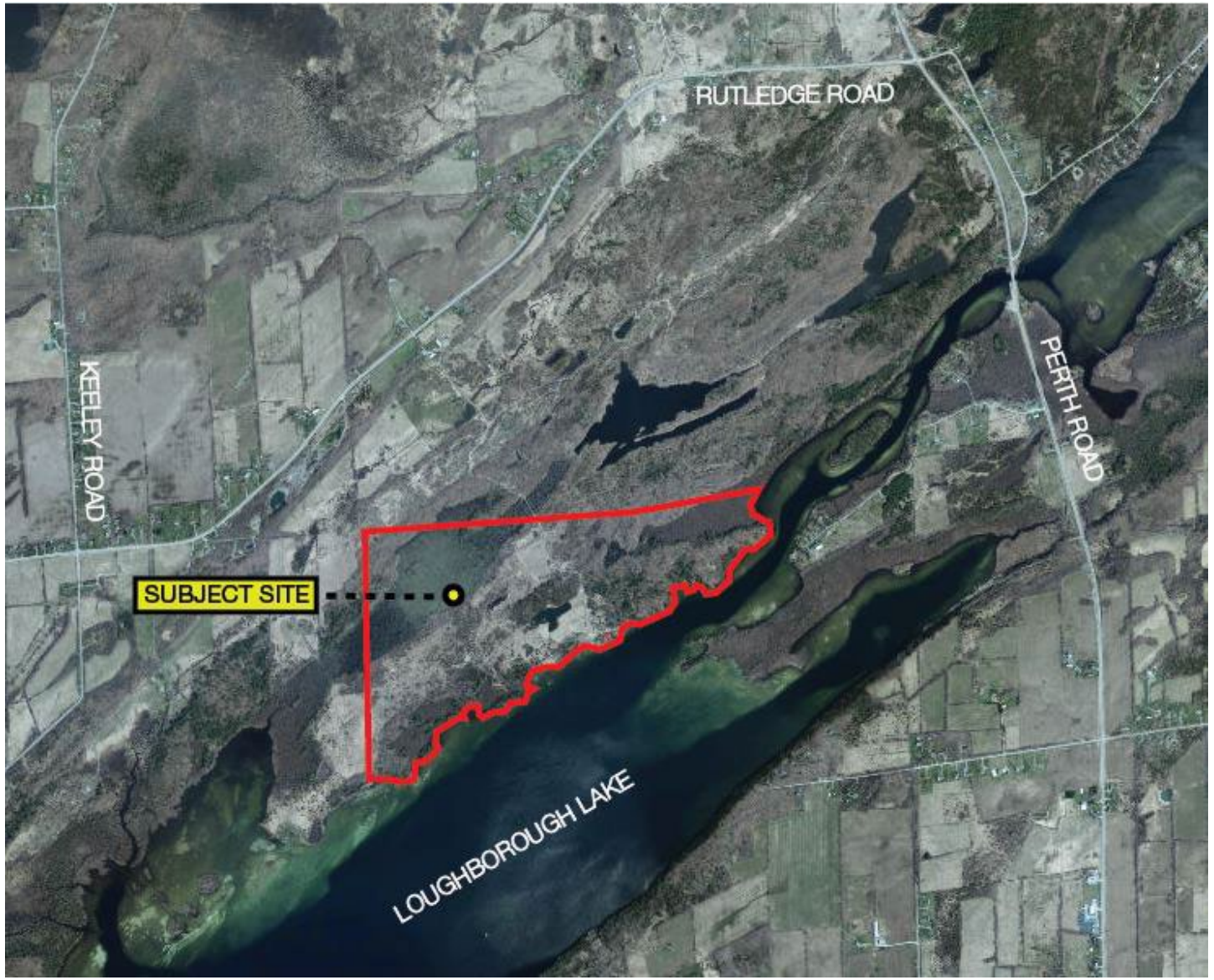
Applicant: SNZ Holdings Inc.

Agent: Fotenn

Property: 1425 Rutledge Road

Context

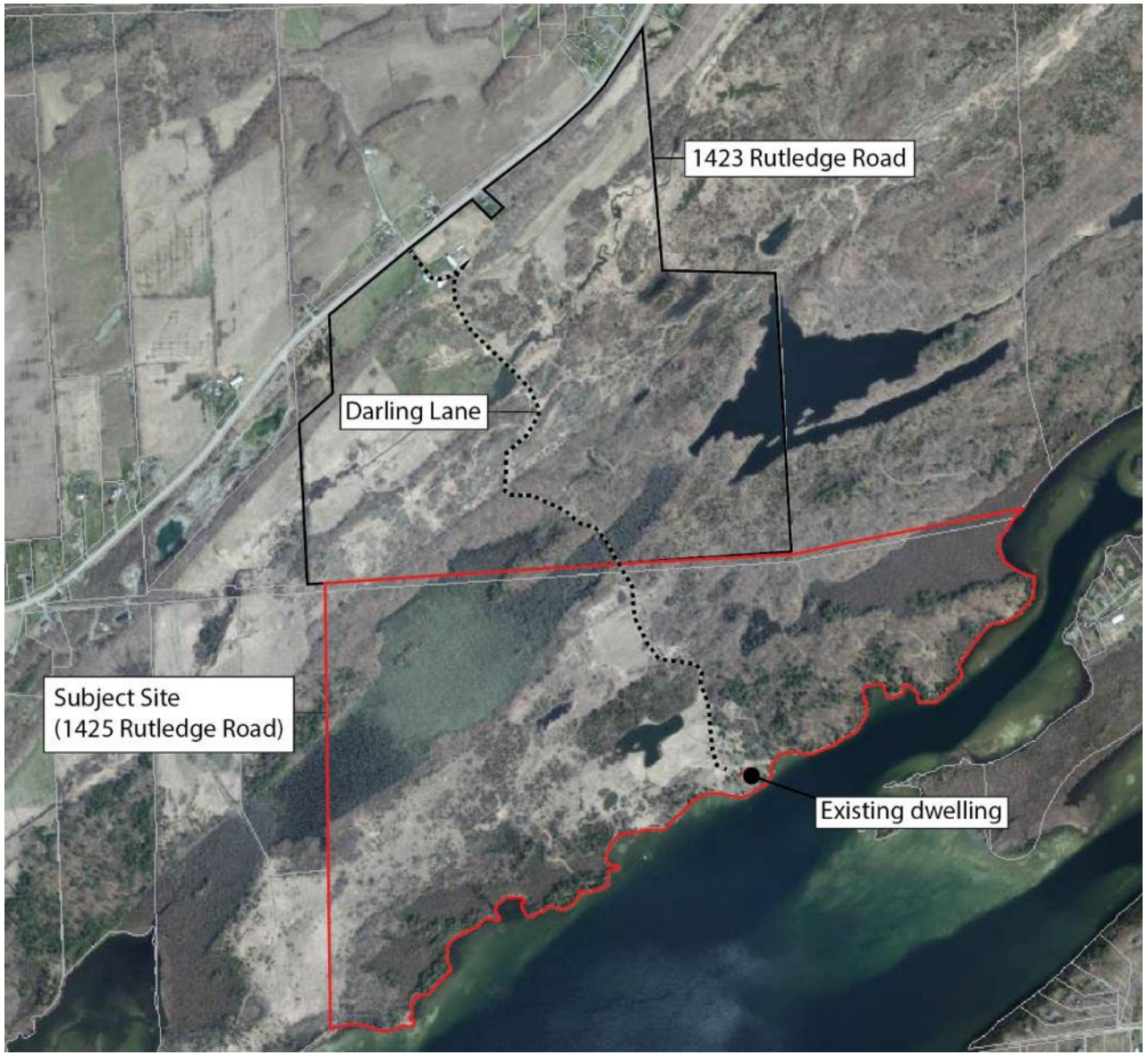
- Primarily rural uses surround site
- Located north of Loughborough Lake



FOTENN

Subject Site

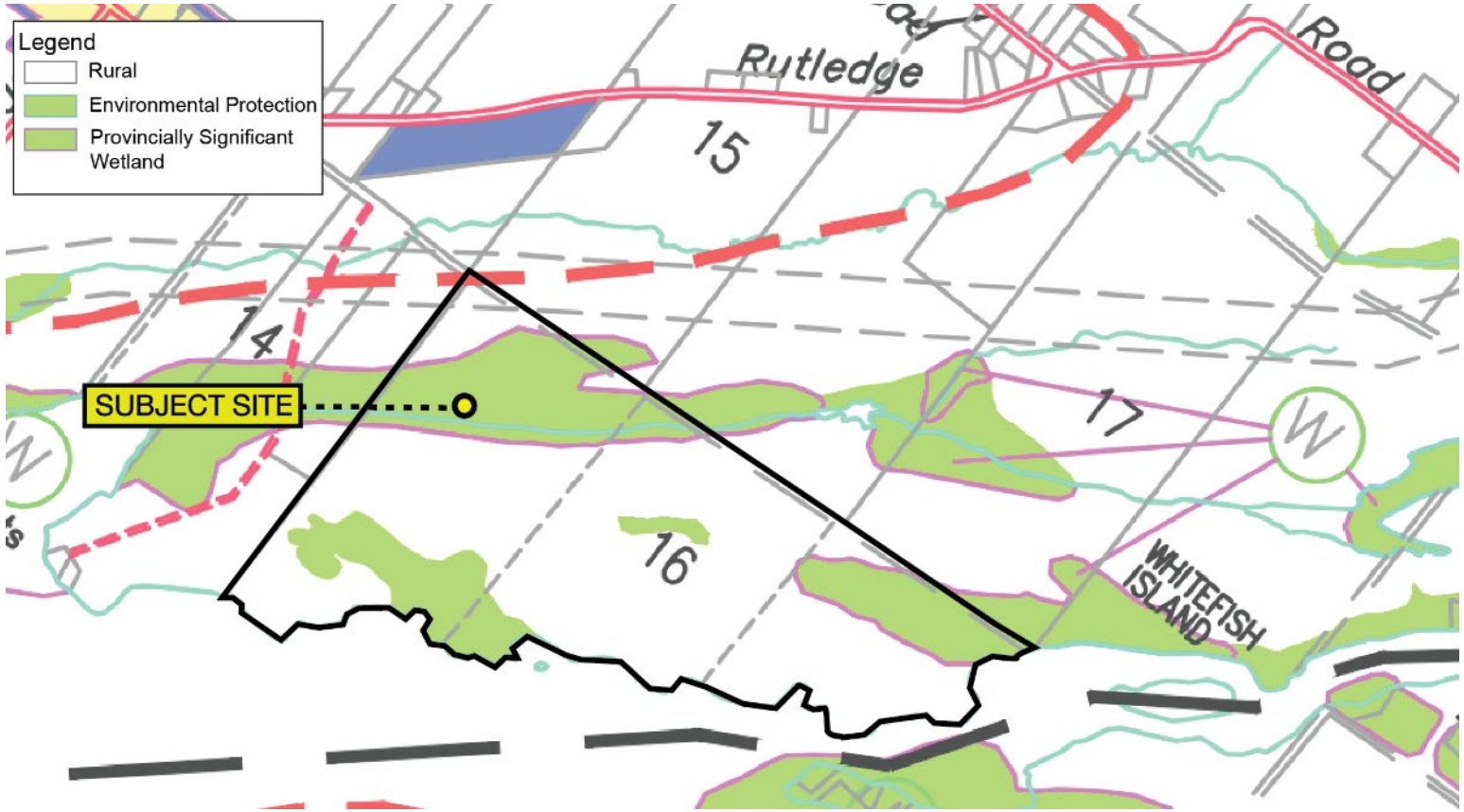
- Existing dwelling on southern edge of the property
- Lot area of approximately 100 hectares
- Accessed via Darling Lane
- Approximately 2,570 metres of water frontage on Loughborough Lake



FOTENN

Official Plan

- Designated Rural Lands with Environmental Protection and Provincially Significant Wetlands
- Intended to accommodate agricultural, recreational, and residential uses



FOTENN

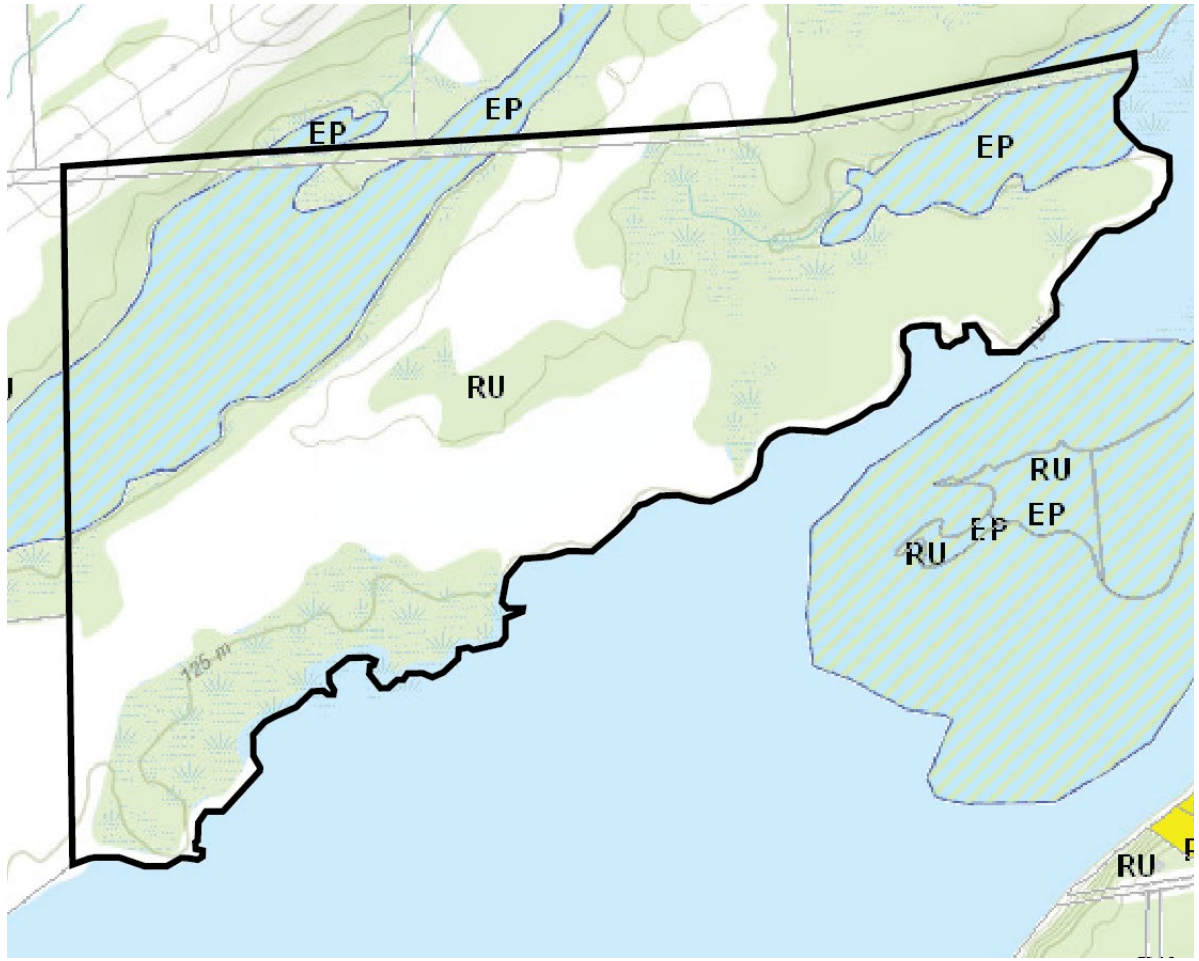
Current Zoning

Rural (RU) Zone

- a single detached dwelling
- home occupation/industry
- various agricultural enterprises

Health retreat / yoga facility not included within the uses permitted for home occupation or home industry

Environmental Protection (EP) Zone



FOTENN

Intent of the Application

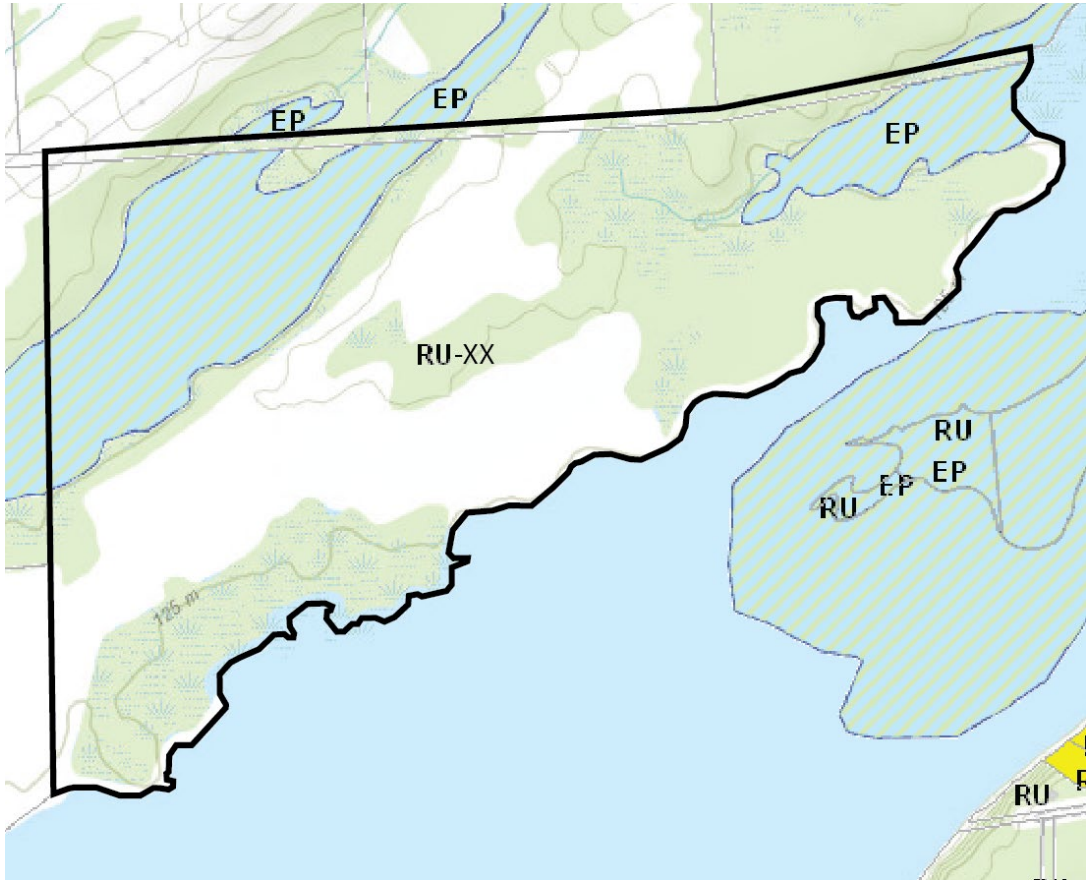
- A yoga and holistic retreat in the existing two-storey, single-detached dwelling
- No new development proposed
- Access will continue via Darling Lane

FOTENN

Proposed Zoning By-law Amendment

Rezone from RU to Site-specific Rural (RU-X-H) Zone

- EP Zone will remain unchanged
- Yoga and Holistic Retreat included as a permitted use and defined
- Parking reduction to reflect size of existing dwelling
- Holding Symbol subject to site plan control agreement



Summary – Good Land Use Planning

- Applications to permit the existing dwelling to be used as a yoga and holistic retreat.
- No new development or site alterations are proposed.
- Zoning By-law Amendment will permit the proposed uses.
- Site-specific zoning to ensure a yoga and holistic retreat is defined and permitted as a primary use.
- Technical considerations will be addressed through the site plan control process (e.g., access from private lane, etc.).

Existing Building Use for Yoga and Holistic Retreat

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Representative Photo of Access Lane

Department and Public Comments

- Public Services – no objection as access is from an existing entrance location and follows a pre-defined road location
- Building Services – the existing sewage system is adequately sized for proposed use
- Cataraqui Conservation – no objection
- Public – none received

Policy Framework

Provincial Policy Statement

Frontenac County Official Plan

Township of South Frontenac Official Plan

- Leverage rural amenities and assets
- Lake trout lake
- Water and sewage services

Next Steps

- South Frontenac Council should receive comments from the public
- A report with a recommendation will be brought to a future Council meeting

Open Discussion

1. Council Questions
2. Public Questions and Comments
3. Council Comments

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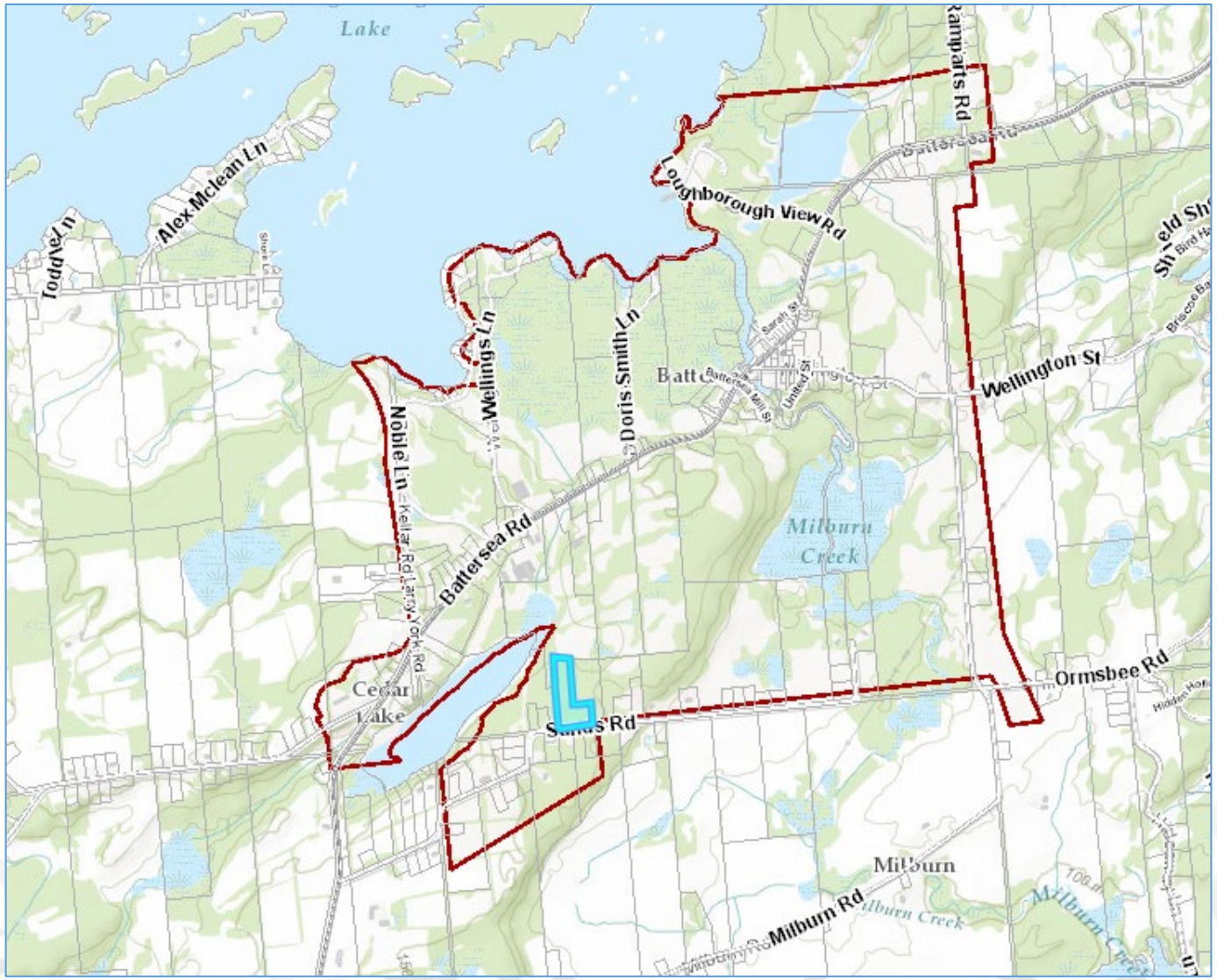
SOUTH FRONTENAC

PL-ZBA-2023-0092

Applicant: Karen Itterman

Property: 2348 Sands Road, Battersea

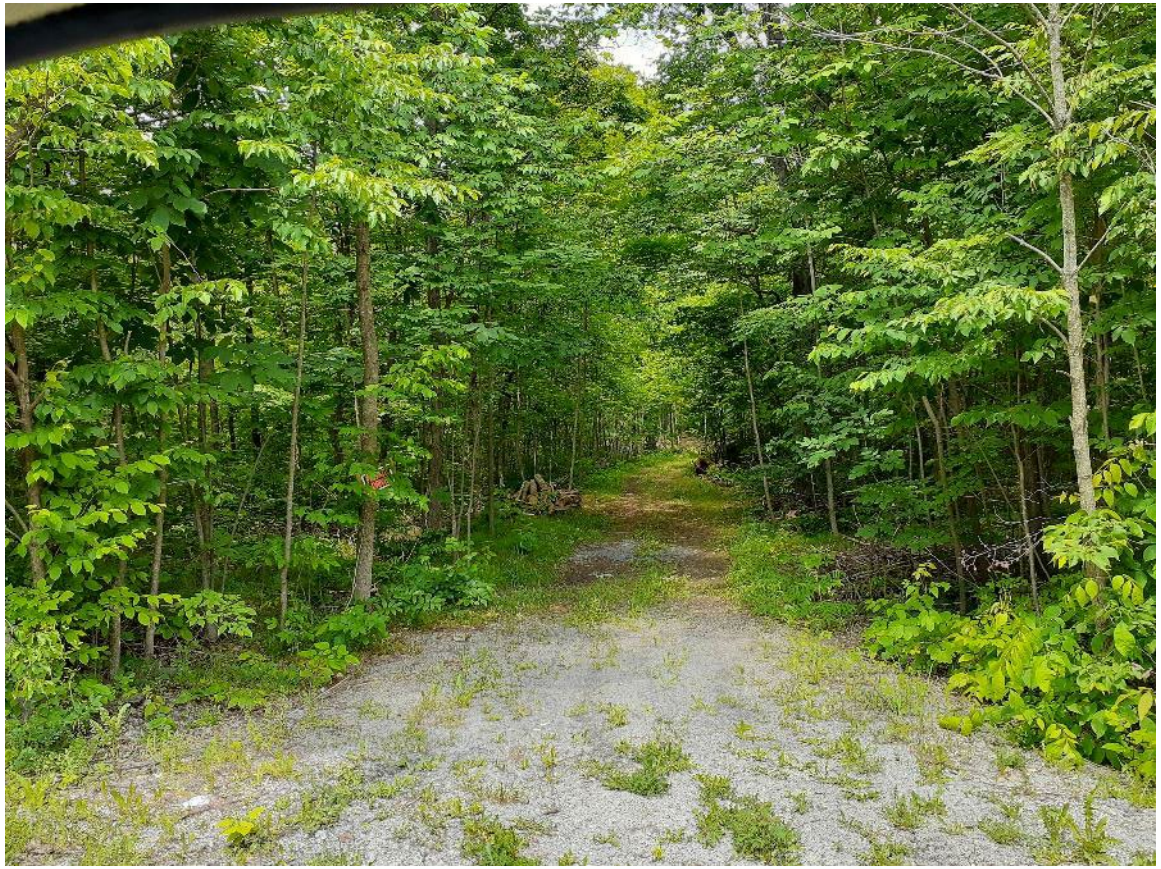
Location


Lake
Alex Mclean Ln
Loughborough View Rd
Ramparts Rd
Wellington St
Doris Smith Ln
Wellings Ln
Noble Ln
Battersea Rd
Milburn Creek
Cedar Lake
Ormsbee Rd
Milburn Rd
Milburn

Proposal

- Severance of one residential lot approved in July 2023
- Designation – Settlement Area
- Existing Zone – UR1
- Proposed Zones:
- UR1-25 on Retained Parcel
  - 0.6ha (1.4ac) area
  - 73m (239.5ft) frontage
- UR1-26 on Severed Parcel
  - 67m (219.8 ft) frontage

Retained Parcel



Severed Parcel

Department and Public Comments

- Public Services and Building Services – no objection to the consent application

- Public – none received

Planning Analysis

- Provincial Policy Statement, County Official Plan and Township Official Plan encourage growth in rural settlement areas
- Minimum 0.8ha (2 acre) lot area required for new lots
- Ensures adequate well and sewage system separation
- Original parcel (1977) was 0.4ha in size with 45 m frontage before a lot addition (1994)
- Retained parcel would have 0.6ha lot area and 73m frontage
- Severed parcel would have 67m frontage to achieve satisfactory geometric design
- Committee of Adjustment approved consent that does not conform to Official Plan and Zoning By-law
- Council may consider the deficient lot area/frontage by changing the zone on the lots

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Next Steps

- South Frontenac Council should receive comments from the public
- Staff recommendation to pass a by-law tonight

Open Discussion

1. Council Questions
2. Public Questions and Comments
3. Council Comments

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Adjourn Public Meeting

Township of South Frontenac

Staff Report

To:	Council
Prepared by:	Development Services Department
Date of Meeting:	December 19, 2023
Subject:	**Public Meeting for Zoning By-law Amendment Application PL-ZBA-2023-0133, Broome and Malloy, 4839 Noble Lane**

Summary

This report provides Council with information about Zoning By-law Amendment Application PL-ZBA-2023-0133 for 4839 Noble Lane. If approved, the zone on the property would be changed from Limited Service Residential – Waterfront (RLSW) to a Limited Service Residential – Waterfront Special Provision zone (RLSW-XX).

Consistent with Council's Procedural By-law, Council will receive comments from the public on the application through the public meeting. Staff will bring a more detailed report considering applicable policy and public comments, as well as providing a recommendation to Council on this application at a future meeting.

Recommendation

This report is for information only.

Background

The purpose of the proposed by-law is to amend the RLSW zone on the subject property to specifically list a chicken coop and the keeping of a maximum of five chickens as a permitted accessory use. The effect of the RLSW-XX zone would be to allow the owners to keep a maximum of five chickens on the subject property.

Under the *Planning Act*, a public meeting is required to be held to receive comments from the public on the proposed rezoning.

Property Description

The subject property is located within the Battersea Settlement Area. The subject property is approximately 2.5 acres in area with 24 metres (80 feet) of frontage on Noble Lane and 114 metres (375 feet) of frontage on Loughborough Lake. The lands are being renaturalized. The property contains a house, two detached garages and a chicken coop with a run. The chicken coop is located between a garage and the lane, approximately 36.5

metres (120 feet) from the lane, 70 metres (230 feet) from the shoreline, and 15 metres (50 feet) from the nearest side lot line. Five chickens are being kept on the property.

Related Applications

The property is not subject to any other applications under the *Planning Act*.

Department and Agency Comments

This application did not require circulation to Township departments due to the property's location on a private lane and the nature of the request. Cataraqui Conservation did not require circulation due to the proposed location of the chicken coop on the property.

Public Comments

Written comments were received from several individuals who own property and live on Noble Lane or in the immediate area. These individuals are supportive of the applicant's desire to continue to raise chickens on the subject property. They noted that Noble Lane runs over a farm property where several different types of livestock are raised, that keeping a few chickens in the backyard is in line with the rural character of the Township, that the chickens are kept in an enclosed area, and that these particular chickens are more like pets than livestock.

Financial Implications

Not applicable.

Relationship to Strategic Plans

☒ Not applicable to this report.

☐ This initiative is supported by the following priorities of the 2019-2022 Strategic Plan.

- Priority: Choose an item.
- Action Item (if applicable): N/A

Climate Considerations

☒ Not applicable to this report.

☐ This initiative supports climate change mitigation/adaption efforts in South Frontenac; and/or impacts the Township's resilience to climate change.

Notice/Consultation

Notice of the Statutory Public Meeting was given pursuant to the requirements of the Planning Act, 20 days in advance of the Public Meeting. This included notice given:

- by mail to every owner of land within 120 metres of the subject lands
- by posting notice signs on the subject lands
- by posting on the Township's Current Planning Application webpage
- by e-mail to prescribed persons and public bodies

Application and Supporting Documents

The application and supporting documents (if any) can be accessed through the Township's CivicWeb Document Center, https://southfrontenac.civicweb.net/filepro/documents/90083/

Attachments

1. Draft By-law

Approvals

Report Prepared By:

Christine Woods, RPP, MCIP, Senior Planner

Submitted By:

Brad Wright
Director of Development Services

Approved By:

Louise Fragnito, CPA, CGA
Chief Administrative Officer

TOWNSHIP OF SOUTH FRONTENAC
BY-LAW 2023-##

BEING A BY-LAW TO AMEND BY-LAW 2003-75, AS AMENDED, TO REZONE LAND FROM LIMITED SERVICE RESIDENTIAL – WATERFRONT (RLSW) TO LIMITED SERVICE RESIDENTIAL – WATERFRONT – SPECIAL PROVISION (RLSW-XX) ON LANDS DESCRIBED AS 4839 NOBLE LANE, PART LOT 7, CONCESSION 9, DISTRICT OF STORRINGTON

WHEREAS pursuant to the provisions of Section 34 of the *Planning Act*, RSO 1990 as amended, the Council of a Municipality may enact by-laws regulating the use of land and the erection, location and use of buildings and structures thereon;

AND WHEREAS By-law 2003-75 being the Zoning By-law regulates the use of land and the erection, location and use of buildings and structures within the Township of South Frontenac;

AND WHEREAS the Council of the Corporation of the Township of South Frontenac considered all written and oral submissions received on this application, the effect of which helped Council make an informed decision;

AND that there be no further notice pursuant to Section 34 (17) of the *Planning Act*;

NOW THEREFORE, the Council of the Corporation of the Township of South Frontenac, hereby enacts as follows:

1. **THAT** Schedule “H” to Zoning By-law Number 2003-75 as amended, is hereby further amended by changing the zoning from Limited Service Residential – Waterfront (RLSW) to Limited Service Residential – Waterfront – Special Provision (RLSW-XX) for the lands shown on Schedule “1”.

2. **THAT** Zoning By-law Number 2003-75 as amended is hereby further amended by adding a new section RLSW-XX (4839 Noble Lane, Part of Lot 7, Concession 9, District of Storrington) immediately after the last Limited Service Residential – Waterfront – Special Provision section to read as follows:

   RLSW-XX (4839 Noble Lane, Part of Lot 7, Concession 9, District of Storrington)

   Notwithstanding the provisions of Section 10 or any other provision of this By-law to the contrary, the lands zoned Special Limited Service Residential – Waterfront (RLSW-XX) shall be used in accordance with the following:

   - *In addition to the Permitted Uses in Section 10.2, the following accessory uses are permitted:*
     - *Chicken Coop*
     - *Keeping a maximum of five (5) chickens*

   - *Zone Provisions for Chicken Coop*
     - *Setback from highwater mark (Minimum)* — *70 metres (230 ft.)*
     - *Front Yard (Minimum)* — *70 metres (230 ft.)*
     - *Interior Side Yard (Minimum)* — *15 metres (50 ft.)*

   All other provisions of this by-law shall apply.

3. THIS BY-LAW shall come into force in accordance with Section 34 of the Planning Act, 1990, as amended, either upon the date of passage or as otherwise provided by said Section 34.

   Dated at the Township of South Frontenac this # day of MONTH, YEAR.

   Read a first and second time this # day of MONTH, YEAR.

   Read a third time and finally passed this # day of MONTH, YEAR.

DRAFT

THE CORPORATION OF THE
TOWNSHIP OF SOUTH FRONTENAC

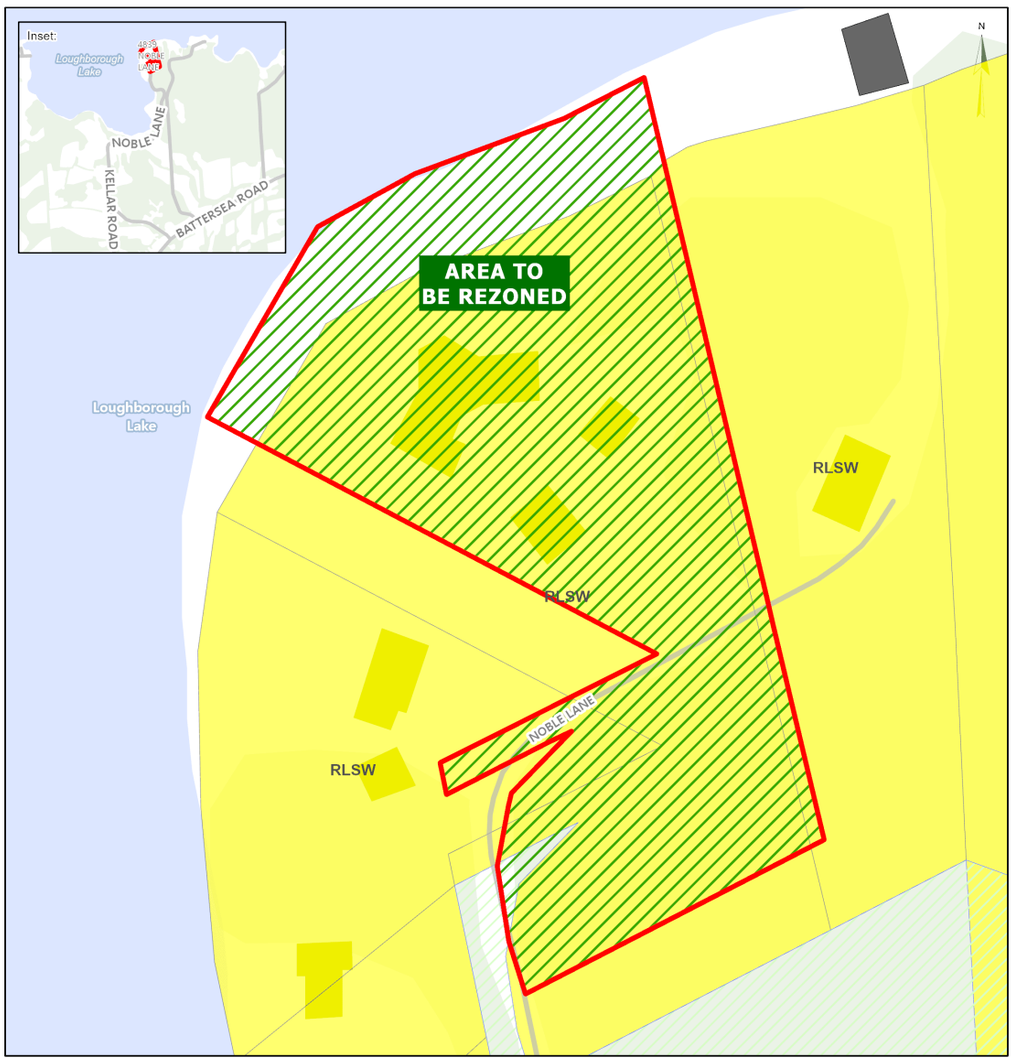
_____
Ron Vandewal, Mayor

_____
James Thompson, Clerk

DRAFT

Schedule 1

This is Schedule “1” to By-law No. 2023-##.



SOUTH FRONTENAC

(BROOME MALLOY)
4839 NOBLE LANE
PL-ZBA-2023-0133

Scale: 1:960

LEGEND

- Subject Lands
- Area to be Rezoned
- Building Footprints
- Wooded Area
- Waterbody
- Road

Zoning

- AGRICULTURAL ZONE (A)
- COMMUNITY FACILITY ZONE (CF)
- ENVIRONMENTAL PROTECTION ZONE (EP)
- MOBILE HOME RESIDENTIAL ZONE (MHR)
- OPEN SPACE - PUBLIC ZONE (OS)
- OPEN SPACE - PRIVATE ZONE (OSP)
- PIT 'A' ZONE (PA)
- PIT 'B' ZONE (PB)
- QUARRY 'A' ZONE (QA)
- QUARRY 'B' ZONE (QB)
- RESIDENTIAL ZONE (R)
- RURAL COMMERCIAL ZONE (RC)
- RURAL INDUSTRIAL ZONE (RI)
- LIMITED SERVICE RESIDENTIAL ZONE (RLS)
- LIMITED SERVICE RESIDENTIAL - ISLAND ZONE (RLSI)
- LIMITED SERVICE RESIDENTIAL - WATERFRONT ZONE (RLSW)
- RECREATIONAL RESORT COMMERCIAL ZONE (RRC)
- RURAL ZONE (RU)
- WATERFRONT RESIDENTIAL ZONE (RW)
- SALVAGE YARD INDUSTRIAL ZONE (SI)
- TEMPORARY USE ZONE (TUZ)
- URBAN COMMERCIAL ZONE (UC)
- URBAN INDUSTRIAL ZONE (UI)
- URBAN MULTIPLE RESIDENTIAL ZONE (UMR)
- URBAN RESIDENTIAL ZONE - FIRST DENSITY ZONE (UR1)
- URBAN RESIDENTIAL ZONE - SECOND DENSITY (UR2)
- WASTE DISPOSAL ZONE (WD)

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UTM Projection NAD 83 | Date: 2023-11-27

Passed this # day of MONTH, YEAR

Ron Vandewal, Mayor

James Thompson, Clerk

Township of South Frontenac
Staff Report

To:	Council
Prepared by:	Development Services Department
Date of Meeting:	December 19, 2023
Subject:	**Public Meeting for Zoning By-law Amendment Application PL-ZBA-2023-0131, AlinkA Group Inc., 41 Bresee Road**

Summary

This report provides Council with information about Zoning By-law Amendment Application PL-ZBA-2023-0131 for 41 Bresee Road. If approved, the zone on the property would be changed from Rural (RU) to a Rural Special Provision zone (RU-XX).

Consistent with Council's Procedural By-law, Council will receive comments from the public on the application through the public meeting. Staff will bring a more detailed report considering applicable policy and public comments, as well as providing a recommendation to Council on this application at a future meeting.

Recommendation

This report is for information only.

Background

The purpose of the proposed by-law is to amend the Rural (RU) zone on the property. The list of permitted uses would be expanded to include a retail store, a craft shop, a nursery or garden centre, a resort including a health spa, a private or commercial club, a studio, and a community service and community facility (e.g. learning centre).

The effect of the by-law would be to allow a non-profit community campus and social/spiritual hub for people from the community and beyond to come learn, share and practice skills based around agriculture, ecology, culture and the arts, and to enjoy nature. The campus would provide classes in life skills and artistic expression to mixed ability individuals including developmentally challenged youth and adults.

The proposed expanded uses would have dual purposes – part of the learning centre but also independent of the learning centre. For example, the learning centre would have a craft shop where people would come to learn a craft such as pottery, but the craft shop could also be used by professional/amateur potters to make and sell their goods.

Under the *Planning Act*, a public meeting is required to be held to receive comments from the public on the proposed rezoning.

Property Description

The subject property is approximately 184 acres in area with 520 metres of frontage on Westport Road and 400 metres of frontage on Bresee Road. It consists of forest, wetland and fields. The property contains a house and two barns. The two barns are used for recreational, event gatherings and storage uses. There are also several small accessory buildings.

Related Applications

The property is not subject to any other applications under the Planning Act.

Supporting Documentation

Planning Justification Report

A Planning Justification Report (Richard Doherty, November 20, 2023) was submitted in support of the application. The report explained how the property is currently used and its proposed use. The report assessed the appropriateness of the proposed zoning by-law amendment in the context of the surrounding area as well as its conformity with the applicable policy and regulatory framework.

Department and Agency Comments

Public Services had no concerns with the proposal, noting that their technical review and feedback on matters such as traffic, parking and stormwater management would be provided at the site plan control stage if/when it is applied.

Building Services comments regarding Ontario Building Code requirements are forthcoming. Their review will not impact the proposed zoning by-law amendment but would inform future site layout and building design considerations.

Public Comments

Mr. Bob Scanlan (74 Bresee Road) raised concerns that the notice map identified that the proposed zone would be applied to one of his properties. Mr. Scanlan provided documentation of ownership and property location. Staff can use the documentation provided to ensure that his land will remain zoned Rural if the subject application is approved.

Financial Implications

Not applicable.

Relationship to Strategic Plans

☒ Not applicable to this report.

☐ This initiative is supported by the following priorities of the 2019-2022 Strategic Plan.

- Priority: Choose an item.
- Action Item (if applicable): N/A

Climate Considerations

☒ Not applicable to this report.

☐ This initiative supports climate change mitigation/adaption efforts in South Frontenac; and/or impacts the Township's resilience to climate change.

Notice/Consultation

Notice of the Statutory Public Meeting was given pursuant to the requirements of the Planning Act, 20 days in advance of the Public Meeting. This included notice given:

- by mail to every owner of land within 120 metres of the subject lands
- by posting notice signs on the subject lands
- by posting on the Township's Current Planning Application webpage
- by e-mail to prescribed persons and public bodies

Application and Supporting Documents

The application and supporting documents (if any) can be accessed through the Township's CivicWeb Document Center, https://southfrontenac.civicweb.net/filepro/documents/90083/

Attachments

1. Draft By-law

Approvals

Report Prepared By:

Christine Woods, RPP, MCIP, Senior Planner

Submitted By:

Brad Wright
Director of Development Services

Approved By:

Louise Fragnito, CPA, CGA
Chief Administrative Officer

TOWNSHIP OF SOUTH FRONTENAC
BY-LAW 2023-XX

BEING A BY-LAW TO AMEND BY-LAW 2003-75, AS AMENDED, TO REZONE LAND FROM RURAL (RU) TO RURAL – SPECIAL PROVISION (RU-XX) ON LANDS DESCRIBED AS 41 BRESEE ROAD, PART LOTS 19 AND 20, CONCESSION 11, DISTRICT OF BEDFORD

WHEREAS pursuant to the provisions of Section 34 of the *Planning Act*, RSO 1990 as amended, the Council of a Municipality may enact by-laws regulating the use of land and the erection, location and use of buildings and structures thereon;

AND WHEREAS By-law 2003-75 being the Zoning By-law regulates the use of land and the erection, location and use of buildings and structures within the Township of South Frontenac;

AND WHEREAS the Council of the Corporation of the Township of South Frontenac considered all written and oral submissions received on this application, the effect of which helped Council make an informed decision;

AND that there be no further notice pursuant to Section 34 (17) of the *Planning Act*;

NOW THEREFORE, the Council of the Corporation of the Township of South Frontenac, hereby enacts as follows:

1. **THAT** Schedule “D” to Zoning By-law Number 2003-75 as amended, is hereby further amended by changing the zoning from Rural (RU) to Rural – Special Provision (RU-XX) for the lands shown on Schedule “1”.

2. **THAT** Zoning By-law Number 2003-75 as amended is hereby further amended by adding a new section RU-XX (Part of Lots 19 and 20, Concession 11, District of Bedford) immediately after the last Rural – Special Provision section to read as follows:

   RU-XX (Part of Lots 19 and 20, Concession 11, District of Bedford)

   Notwithstanding the provisions of Section 7 or any other provision of this By-law to the contrary, the lands zoned Special Rural (RU-XX) shall be used in accordance with the following:

   - *In addition to the Permitted Uses in Section 7.2, the following uses are permitted:*
     - *A community service and community facility*
       - *For example, a learning centre, summer camp, dormitory, campsites, associated cooking and eating facilities, associated play areas, accessory uses to the above*
     - *A retail store*
     - *A craft shop*
     - *A studio*
     - *A nursery or garden centre*
     - *A resort, including a health spa*
     - *A private or commercial club*

   All other provisions of this by-law shall apply.

3. THIS BY-LAW shall come into force in accordance with Section 34 of the Planning Act, 1990, as amended, either upon the date of passage or as otherwise provided by said Section 34.

   Dated at the Township of South Frontenac this # day of MONTH, YEAR.

   Read a first and second time this # day of MONTH, YEAR.

   Read a third time and finally passed this # day of MONTH, YEAR.

DRAFT

THE CORPORATION OF THE
TOWNSHIP OF SOUTH FRONTENAC

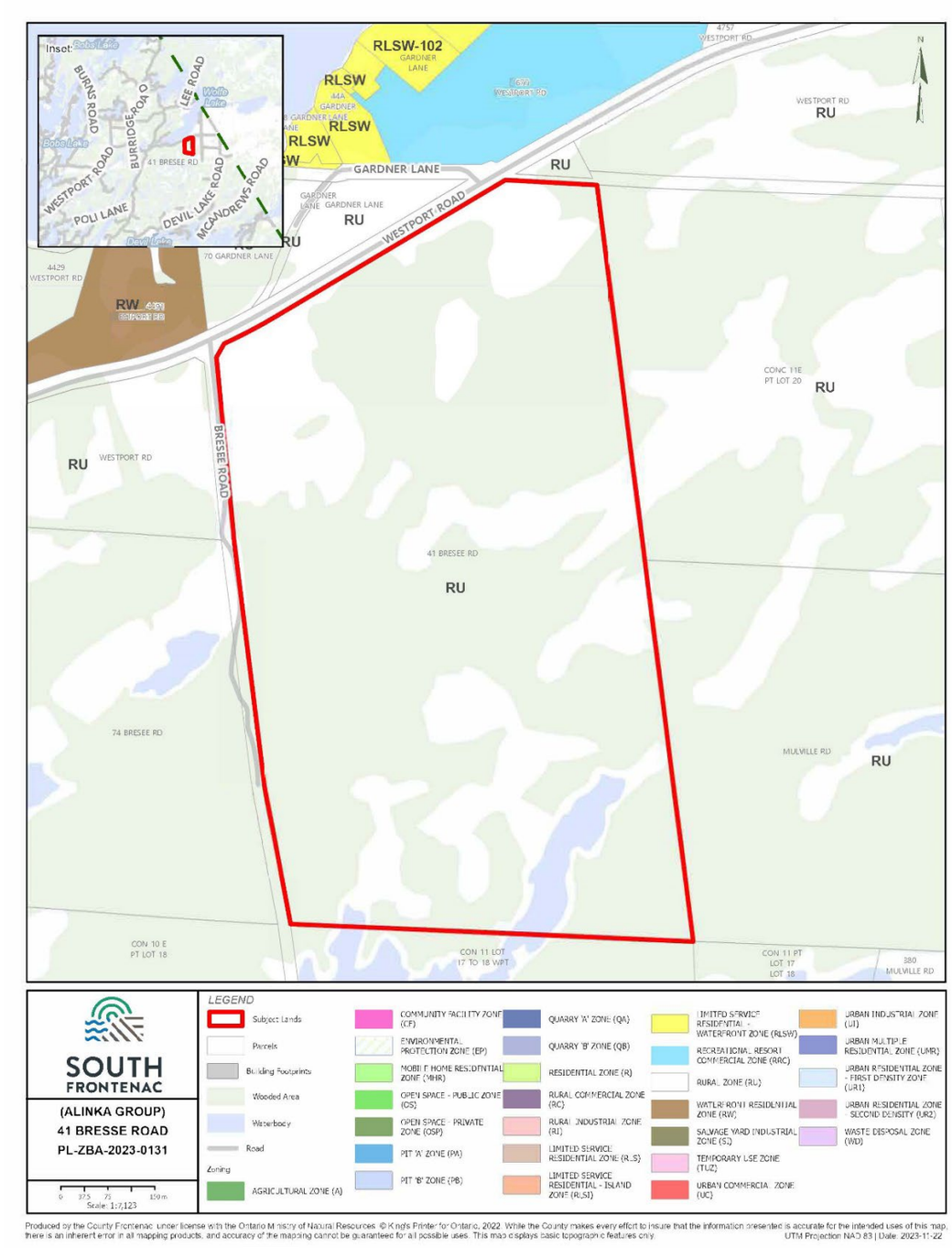
_____
Ron Vandewal, Mayor

_____
James Thompson, Clerk

DRAFT

Schedule 1

This is Schedule “1” to By-law No. 2023-XX



Passed this # day of MONTH, YEAR

Ron Vandewal, Mayor

James Thompson, Clerk

Township of South Frontenac
Staff Report

To:	Council
Prepared by:	Development Services Department
Date of Meeting:	December 19, 2023
Subject:	**Public Meeting for Zoning By-law Amendment Application PL-ZBA-2023-0102, SNZ Holdings (Fotenn), 1425 Rutledge Road**

Summary

This report provides Council with information about Zoning By-law Amendment Application PL-ZBA-2023-0102 for 1425 Rutledge Road. If approved, the zone on the property would be changed from Rural (RU) to a Rural Special Provision zone (RU-XX).

Consistent with Council's Procedural By-law, Council will receive comments from the public on the application through the public meeting. Staff will bring a more detailed report considering applicable policy and public comments, as well as providing a recommendation to Council on this application at a future meeting.

Recommendation

This report is for information only.

Background

The purpose of the application is to add a yoga and holistic retreat as a permitted use in the Rural zone on the subject property. The yoga and holistic retreat would be established within the existing dwelling on the property. The by-law would also place a holding symbol on the lands for this use, to be removed only once there is confirmation of legal deeded access to the subject lands, and a site plan control agreement has been executed and registered on the title of the property to the satisfaction of the Township.

Under the *Planning Act*, a public meeting is required to be held to receive comments from the public on the proposed rezoning.

Property Description

The subject property is approximately 250 acres in area with more than 2,500 metres of frontage on Loughborough Lake. It consists of forest, wetland and fields. The property

contains a 475 square metre footprint, two storey dwelling and a picnic shelter near the lake.

Related Applications

The property is not subject to any other applications under the Planning Act.

Supporting Documentation

A planning justification report and Building Code letter were submitted in support of the application.

Planning Justification Report

A Planning Justification Report (Fotenn, July 31, 2023) was submitted in support of the application. The report assessed the appropriateness of the proposed zoning by-law amendment in the context of the surrounding area as well as its conformity with the applicable policy and regulatory framework.

Building Code Letter

A letter (Morrison Hershfield, April 24, 2023) was also submitted that reviewed the proposed change of use from a single family residence to a yoga retreat against the Ontario Building Code. The consultant concluded that the building would comply with the Ontario Building Code, but recommended voluntarily provision of a fire alarm system, and the provision of additional exits.

Department and Agency Comments

Public Services had no concerns with the proposal, on the understanding that road access is proposed from an existing entrance location at 1423 Rutledge Road and that the access plans to follow a pre-defined road location on the properties.

Building Services determined that the proposed change of use of the building will not reduce the performance level of the existing sewage system (i.e. it is adequately sized).

Cataraqui Conservation staff indicated on November 8, 2023, that they had no objection to the application within the context of natural hazard and stormwater management policies, and O. Reg. 148/06 under the Conservation Authorities Act. They note that CRCA permit approval will be required if upgrades or changes are proposed to the existing access road.

Public Comments

No comments were received from the public at the time of writing this report.

Financial Implications

Not applicable.

Relationship to Strategic Plans

☒ Not applicable to this report.

☐ This initiative is supported by the following priorities of the 2019-2022 Strategic Plan.

- Priority: Choose an item.
- Action Item (if applicable): N/A

Climate Considerations

☒ Not applicable to this report.

☐ This initiative supports climate change mitigation/adaption efforts in South Frontenac; and/or impacts the Township's resilience to climate change.

Notice/Consultation

Notice of the Statutory Public Meeting was given pursuant to the requirements of the Planning Act, 20 days in advance of the Public Meeting. This included notice given:

- by mail to every owner of land within 120 metres of the subject lands
- by posting notice signs on the subject lands
- by posting on the Township's Current Planning Application webpage
- by e-mail to prescribed persons and public bodies

Application and Supporting Documents

The application and supporting documents (if any) can be accessed through the Township's CivicWeb Document Center, https://southfrontenac.civicweb.net/filepro/documents/90083/

Attachments

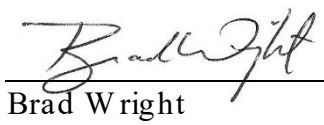
1. Draft By-law 2023-XX

Approvals

Report Prepared By:

Christine Woods, MCIP, RPP, Senior Planner

Submitted By:



Brad Wright
Director of Development Services

Approved By:

Louise Fragnito, CPA, CGA
Chief Administrative Officer

TOWNSHIP OF SOUTH FRONTENAC
BY-LAW 2023-##

BEING A BY-LAW TO AMEND BY-LAW 2003-75, AS AMENDED, TO REZONE LAND FROM RURAL (RU) TO RURAL – SPECIAL PROVISION (RU-XX-H) ON LANDS DESCRIBED AS 1425 RUTLEDGE ROAD, PART LOTS 15 TO 17, CONCESSION 4, DISTRICT OF LOUGHBOROUGH

WHEREAS pursuant to the provisions of Section 34 of the *Planning Act*, RSO 1990 as amended, the Council of a Municipality may enact by-laws regulating the use of land and the erection, location and use of buildings and structures thereon;

AND WHEREAS By-law 2003-75 being the Zoning By-law regulates the use of land and the erection, location and use of buildings and structures within the Township of South Frontenac;

AND WHEREAS the Council of the Corporation of the Township of South Frontenac considered all written and oral submissions received on this application, the effect of which helped Council make an informed decision;

AND that there be no further notice pursuant to Section 34 (17) of the *Planning Act*;

NOW THEREFORE, the Council of the Corporation of the Township of South Frontenac, hereby enacts as follows:

1. **THAT** Schedule “B” to Zoning By-law Number 2003-75 as amended, is hereby further amended by changing the zoning from Rural (RU) to Rural – Special Provision (RU-XX-H) for the lands shown on Schedule “1”.

2. **THAT** Zoning By-law Number 2003-75 as amended is hereby further amended by adding a new section RU-XX-H (Part of Lots 15 to 17, Concession 4, District of Loughborough) immediately after the last Rural – Special Provision section to read as follows:

   RU-XX-H (Part of Lots 15 to 17, Concession 4, District of Loughborough)

   Notwithstanding the provisions of Section 7 or any other provision of this By-law to the contrary, the lands zoned Special Rural (RU-XX) shall be used in accordance with the following:

   - *In addition to the Permitted Uses in Section 7.2, the following uses are permitted:*
     - *Yoga and Holistic Retreat*

   - *Definition*
     - *“Yoga and Holistic Retreat” shall mean a building or part thereof wherein the business of a yoga and holistic retreat is carried on. Without limiting the generality of this type of use, such services as a business office, therapeutic massage, yoga practice, health and food counselling and therapy, may be located therein.*

   - *Zone Provisions*
     - *Off-street Parking Spaces (Minimum) 8 (Eight)*

   All other provisions of this by-law shall apply.

   Removal of the Holding (H) Symbol

   The Holding (H) Symbol shall be removed to permit a yoga and holistic retreat use only once there is confirmation of legal deeded access to the subject lands, and a site plan control agreement has been executed and registered on the title of the property to the satisfaction of the Township.

DRAFT

3. THIS BY-LAW shall come into force in accordance with Section 34 of the Planning Act, 1990, as amended, either upon the date of passage or as otherwise provided by said Section 34.

Dated at the Township of South Frontenac this # day of MONTH, YEAR

Read a first and second time this # day of MONTH, YEAR

Read a third time and finally passed this # day of MONTH, YEAR

THE CORPORATION OF THE
TOWNSHIP OF SOUTH FRONTENAC

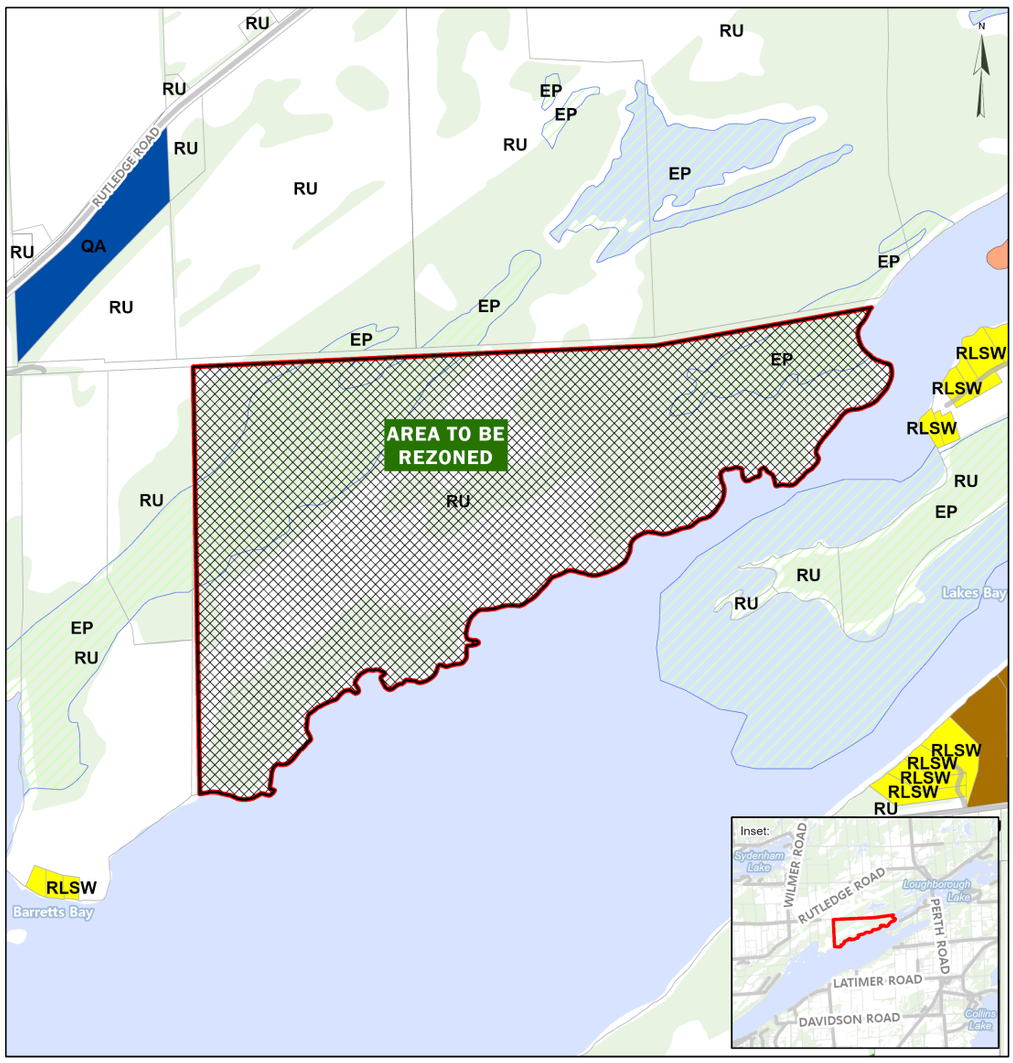
_____
Ron Vandewal, Mayor

_____
James Thompson, Clerk

DRAFT

Schedule 1

This is Schedule “1” to By-law No. 2023-##.



SOUTH FRONTENAC

(SNZ HOLDINGS INC)
(FOTENN)
1425 RUTLEDGE
PL-ZBA-2023-0102

0 85 170 340 m
Scale: 1:11,900

LEGEND

Subject Lands
Area to be Rezoned
Township Boundaries
Parcels
Building Footprints
Wooded Area
Waterbody
Road

Zoning

AGRICULTURAL ZONE (A)
COMMUNITY FACILITY ZONE (CF)
ENVIRONMENTAL PROTECTION ZONE (EP)
MOBILE HOME RESIDENTIAL ZONE (MHR)
OPEN SPACE - PUBLIC ZONE (OS)
OPEN SPACE - PRIVATE ZONE (OSP)
PIT 'A' ZONE (PA)
PIT 'B' ZONE (PB)
QUARRY 'A' ZONE (QA)
QUARRY 'B' ZONE (QB)
RESIDENTIAL ZONE (R)
RURAL COMMERCIAL ZONE (RC)
RURAL INDUSTRIAL ZONE (RI)
LIMITED SERVICE RESIDENTIAL ZONE (RLS)
LIMITED SERVICE RESIDENTIAL - ISLAND ZONE (RLSI)
LIMITED SERVICE RESIDENTIAL - WATERFRONT ZONE (RLSW)
RECREATIONAL RESORT COMMERCIAL ZONE (RRC)
RURAL ZONE (RU)
WATERFRONT RESIDENTIAL ZONE (RW)
SALVAGE YARD INDUSTRIAL ZONE (SI)
TEMPORARY USE ZONE (TUZ)
URBAN COMMERCIAL ZONE (UC)
URBAN INDUSTRIAL ZONE (UI)
URBAN MULTIPLE RESIDENTIAL ZONE (UMR)
URBAN RESIDENTIAL ZONE - FIRST DENSITY ZONE (UR1)
URBAN RESIDENTIAL ZONE - SECOND DENSITY (UR2)
WASTE DISPOSAL ZONE (WD)

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UTM Projection NAD 83 | Date: 2023-08-14

Passed this # day of MONTH, YEAR

Ron Vandewal, Mayor

James Thompson, Clerk

Township of South Frontenac

Staff Report

To:	Council
Prepared by:	Development Services Department
Date of Meeting:	December 19, 2023
Subject:	**Zoning By-law Amendment Application PL-ZBA-2023-0092, Itterman, 2348 Sands Road, Storrington District**

Summary

This report provides Council with information about Zoning By-law Amendment Application PL-ZBA-2023-0092 for 2348 Sands Road. If approved, the zone on the subject lands would be changed from Urban Residential – First Density (UR1) to Urban Residential – First Density – Special Provision (UR1-25 and UR1-26).

Council will review the proposal and invite public input at the statutory public meeting. Staff are recommending that Council pass a by-law during the Council meeting in which the public meeting is held, per Procedural By-law as Amended by By-law 2023-44, as the planning matter is technical in nature (i.e. it fulfills a condition of consent approval).

Recommendation

THAT By-law 2023-106 to amend the zoning on lands known as 2348 Sands Road, Part of Lot 8, Concession 9, District of Storrington, Township of South Frontenac be given first and second reading; and

That By-law 2023-106 be given third reading, signed and sealed.

Background

The subject application is related to consent application PL-BDJ-2023-0029 for the creation of one new lot. The consent application was approved by the Committee of Adjustment on July 13, 2023. The purpose of the rezoning application is to implement a condition that requires the parcels to be rezoned. This change would permit the severed parcel to have a minimum 67 m frontage, and the retained parcel to have a minimum 73 m frontage and 0.6 ha lot area, whereas a minimum 76 m frontage and 0.8 ha lot area is generally required.

Under the *Planning Act*, a public meeting is required to be held to receive comments from the public on the proposed rezoning.

Property Description

The subject property is located on Sands Road in the Battersea Settlement Area. The lands are forested, and generally level. A house and detached garage are located on the far east end of the property. The property is surrounded by residential land uses.

Department and Agency Comments

Public Services and Building Services were not circulated the rezoning application as they had no objection to the approval of the consent application.

Public Comments

No comments were received from the public at the time of writing this report.

Planning Analysis

The proposed zoning by-law amendment was assessed against the applicable policies of the Provincial Policy Statement 2020, County of Frontenac Official Plan, and Township of South Frontenac Official Plan, as well as the provisions of Zoning By-law No. 2003-75.

The Committee of Adjustment had consideration for these planning documents in the decision to grant provisional approval to the consent application.

The Provincial Policy Statement 2020 (PPS) states that rural settlement areas shall be the focus of growth and development and their vitality and regeneration shall be promoted. The PPS also states that planning authorities must consider rural characteristics, the scale of development and the provision of appropriate service levels when directing development in rural settlement areas.

The County of Frontenac Official Plan supports the PPS policies, encouraging the Township to promote mixed use development including residential, commercial, institutional, parks and employment areas (section 3.2). The Township of South Frontenac Official Plan also intends that a majority of new growth will be directed to existing settlement areas where it can be supported by appropriate servicing (section 5.6).

The original parcel was created in 1977. It was 0.4 hectares (1 acre) in size with 45 metres of frontage. The dwelling was constructed in the 1980s. The parcel was enlarged to the current size (2.5 hectares) and configuration through a lot addition in 1994. According to the Owner and Township records, the lot addition was from a larger parcel that was divided equally between family members. The Owner's intent is to divide the property so that as

much as possible of the lands are included with the severed parcel so that it stays with family over the long term.

Section 5.6.1 (ii)(b) of the Township Official Plan states that the minimum lot area for lots shall not be less than 0.8 hectares (2 acres) when serviced by a private well and private sanitary sewage system. The land division policies (Section 7.1) echo the requirement for minimum lot areas for lots created through consent (i.e. for the severed parcel). The UR1 zone also requires a minimum 0.8 hectare (2 acre) lot area.

The subject property is an L-shape. The severed parcel would be the deeper part of the lot (the “stick” of the L), while the retained parcel would be shallower part (the “base” of the L). The severed parcel would be a minimum of 1.9 hectares in area, which exceeds the minimum lot area requirements.

In order to achieve a satisfactory geometric design of the severed and retained parcels, and to maximize the area of the retained parcel, the severed parcel would have 67 metres of frontage. This frontage was confirmed by an Ontario Land Surveyor. The Official Plan does not specify a minimum lot frontage for residential lots in settlement areas. However, the UR1 zone requires a minimum of 76 metres of frontage. It is the opinion of Planning staff that a reduced frontage of 67 metres is acceptable given that there are opportunities for a safe entrance to the severed parcel (per Public Services review), and that the frontage would exceed the existing frontages of most lots in the immediate area.

The retained parcel would be 0.6 hectares in size. The retained parcel would be less than the 0.8 hectares required by the Official Plan and the Zoning By-law. The retained parcel would have 73 metres of frontage according to the Ontario Land Surveyor.

The Township Official Plan requires a minimum 0.8 hectare lot area to ensure adequate separation distances between wells and sewage systems so that groundwater quality is not impacted, to avoid an overdeveloped appearance, and to help ensure a reasonable separation between residential uses.

Section 5.6.1 of the Township Official Plan suggests that the minimum lot area could be changed subject to the approval of Council. This approval would come in the form of a zoning by-law amendment to permit the retained parcel to have a lesser lot area. Staff note that Council has spoken favourably of similar proposals that support infill development in settlement areas.

The subject property is in a low-density residential area, with lot areas ranging from 0.4 hectares to 7.5 hectares. The average area is 1.6 hectares (0.6 hectares when the largest lots are excluded from the calculation). There are no further opportunities for lot creation in the immediate area because all other useable frontage has already been divided. The

severed parcel would be twice the required size. The retained parcel is already developed so any potential impact to groundwater quality and quantity is anticipated to be the same regardless of whether the parcel is 0.8 hectares or 0.6 hectares.

Private wells and sewage systems are the only servicing option in Battersea. The Township must be satisfied that any new lot created by consent can be serviced by a sewage disposal facility and adequate water supply. Building Services was satisfied that the severed parcel has flexibility to locate a sewage disposal system. The Township typically requires the ability for a parcel to be serviced by a private well as a condition of consent approval. The retained parcel would contain the existing dwelling, well, and sewage system.

Conclusion

It is the opinion of staff that the proposed zoning by-law amendment is consistent and conforms to the Provincial Policy Statement 2020, the County of Frontenac Official Plan, and the South Frontenac Official Plan, and represents good planning for the subject lands.

Staff are recommending that Council pass a by-law during the Council meeting in which the public meeting is held, per Procedural By-law as Amended by By-law 2023-44, as the planning matter is technical in nature. Specifically, the Committee of Adjustment had consideration for all applicable policy in the decision to grant provisional approval to the consent applications, and the by-law will fulfill one of their conditions.

Financial Implications

Not applicable.

Relationship to Strategic Plans

☒ Not applicable to this report.

☐ This initiative is supported by the following priorities of the 2019-2022 Strategic Plan.

- Priority: Choose an item.
- Action Item (if applicable): N/A

Climate Considerations

☒ Not applicable to this report.

☐ This initiative supports climate change mitigation/adaption efforts in South Frontenac; and/or impacts the Township's resilience to climate change.

Notice/Consultation

Notice of the Statutory Public Meeting was given pursuant to the requirements of the Planning Act, 20 days in advance of the Public Meeting. This included notice given:

- by mail to every owner of land within 120 metres of the subject lands
- by posting notice signs on the subject lands
- by e-mail to prescribed persons and public bodies

Application and Supporting Documents

The application and supporting documents (if any) can be accessed through the Township's CivicWeb Document Center, https://southfrontenac.civicweb.net/filepro/documents/90083/

Attachments

1. By-law 2023-106

Approvals

Report Prepared By:

Christine Woods, RPP, MCIP, Senior Planner

Submitted By:

Brad Wright
Director of Development Services

Approved By:

Louise Fragnito, CPA, CGA
Chief Administrative Officer

TOWNSHIP OF SOUTH FRONTENAC
BY-LAW 2023-106

BEING A BY-LAW TO AMEND BY-LAW 2003-75, AS AMENDED, TO REZONE LAND FROM URBAN RESIDENTIAL – FIRST DENSITY (UR1) TO URBAN RESIDENTIAL – FIRST DENSITY – SPECIAL PROVISION (UR1-25 AND UR1-26) ON LANDS DESCRIBED AS 2348 SANDS ROAD, PART OF LOT 8, CONCESSION 9, DISTRICT OF STORRINGTON

WHEREAS pursuant to the provisions of Section 34 of the *Planning Act*, RSO 1990 as amended, the Council of a Municipality may enact by-laws regulating the use of land and the erection, location and use of buildings and structures thereon;

AND WHEREAS By-law 2003-75 being the Zoning By-law regulates the use of land and the erection, location and use of buildings and structures within the Township of South Frontenac;

AND WHEREAS the Council of the Corporation of the Township of South Frontenac considered all written and oral submissions received on this application, the effect of which helped Council make an informed decision;

AND that there be no further notice pursuant to Section 34 (17) of the *Planning Act*;

NOW THEREFORE, the Council of the Corporation of the Township of South Frontenac, hereby enacts as follows:

1. **THAT** Schedule “H” to Zoning By-law Number 2003-75 as amended, is hereby further amended by changing the zoning from Urban Residential – First Density (UR1) to Urban Residential – First Density – Special Provision (UR1-25 and UR1-26) for the lands shown on Schedule “1”.

2. **THAT** Zoning By-law Number 2003-75 as amended is hereby further amended by adding new sections UR1-25 and UR1-26 (Part of Lot 8, Concession 9, District of Storrington) immediately after the last Urban Residential – First Density – Special Provision section to read as follows:

   UR1-25 (Part of Lot 8, Concession 9, District of Storrington)

   Notwithstanding the provisions of Section 14 or any other provision of this By-law to the contrary, on the lands zoned Special Urban Residential – First Density (UR1-25), the following provisions apply:

   - *Lot Area (Minimum)* *0.6 hectares (1.4 acres)*
   - *Lot Frontage (Minimum)* *73 metres (239.5 ft)*

   All other provisions of this by-law shall apply.

   UR1-26 (Part of Lot 8, Concession 9, District of Storrington)

   Notwithstanding the provisions of Section 14 or any other provision of this By-law to the contrary, on the lands zoned Special Urban Residential – First Density (UR1-26), the following provisions apply:

   - *Lot Frontage (Minimum)* *67 metres (219.8 ft)*

   All other provisions of this by-law shall apply.

3. THIS BY-LAW shall come into force in accordance with Section 34 of the Planning Act, 1990, as amended, either upon the date of passage or as otherwise provided by said Section 34.

   Dated at the Township of South Frontenac this 19th day of December, 2023.

   Read a first and second time this 19th day of December, 2023.

Read a third time and finally passed this 19th day of December, 2023.

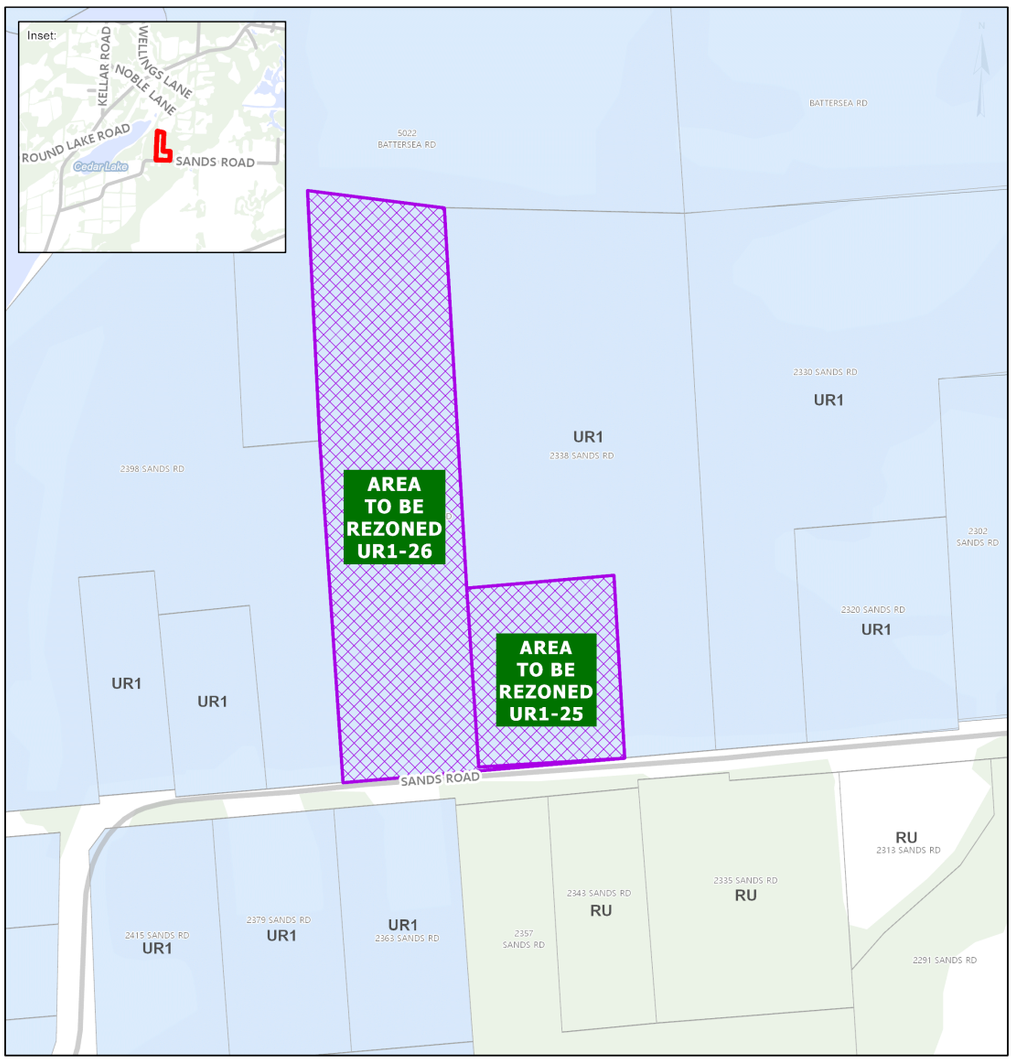
THE CORPORATION OF THE
TOWNSHIP OF SOUTH FRONTENAC

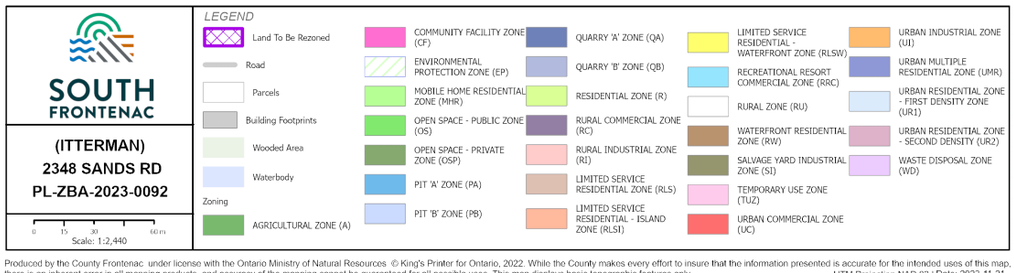
_____
Ron Vandewal, Mayor

_____
James Thompson, Clerk

Schedule 1

This is Schedule “1” to By-law No. 2023-106





Passed this 19th day of December, 2023

Ron Vandewal, Mayor

James Thompson, Clerk

Minutes of Council
December, 12, 2023

Township of South Frontenac
Council Meeting Minutes

Meeting # 35

Time: 9:00 a.m.
Location: Council Chambers / virtual via Zoom

Present: Charlene Godfrey, Ray Leonard, Doug Morey, Steve Pegrum (arrived at 9:06 a.m.), Norm Roberts, Randy Ruttan, Ron Sleeth (departed at 11:25 a.m.), Scott Trueman, Mayor Ron Vandewal

Staff: Louise Fragnito - Chief Administrative Officer, James Thompson - Clerk, Michelle Hannah - Deputy Clerk, Brad Wright - Director of Development Services, Alex Bennett- Acting Director of Fire and Emergency Services (arrived at 11:30 a.m.), Kyle Bolton - Director of Public Services, Shelley Stedall - Director of Corporate Services and Treasurer, Troy Dunlop - Manager of Engineering & Capital Projects, Tim Laprade - Recreation and Facilities Manager, Brian Kirk - Manager of Operations & Fleet, Jan Minaker - Manager of Human Resources, Stephanie Kuca - Deputy Treasurer.

1 Call to Order

a) Resolution

Resolution No. 2023:35:01
Moved by Councillor Roberts
Seconded by Councillor Trueman
That the Council meeting of December 12, 2023, 2023 be called to order at 9:02 a.m.

Carried

2 Declaration of pecuniary interest and the general nature thereof

a) There were none.

3 Approval of Agenda

a) Resolution

Resolution No. 2023:35:02
Moved by Councillor Ruttan
Seconded by Councillor Trueman
That the agenda be approved, as presented.

Carried

4 Scheduled Closed Session

a) There was none.

5 Recess

6 Public Meeting

a) There was none.

7 Delegations

a)

There were none.

8 Briefings

a)

There were none.

9 Approval of Minutes

a) Resolution

Resolution No. 2023:35:03
Moved by Councillor Godfrey
Seconded by Councillor Morey
That the minutes of the December 5, 2023 Council meeting be approved.

Carried

10 Reports Requiring Action

a) Township of South Frontenac - 2024 Draft Budget Deliberation

Shelley Stedall, Director of Corporate Services conducted a PowerPoint presentation regarding the 2024 Budget.

During deliberations Council directed staff to remove $6,173.00 regarding the special levy for the 14 Island Lake Dam maintenance for Quinte Conservation from the budget.

Council recessed from 10:14 a.m. - 10:24 a.m.

11 Advisory Committee Reports or Minutes

a)

There were none.

12 Reports Requiring Approval of By-laws

a) Appointment of Treasurer

Resolution No. 2023:35:04
Moved by Councillor Leonard
Seconded by Councillor Roberts
That By-law 2023-98 being a By-law to appoint Louise Fragnito as Treasurer be given first and second reading.

Carried

Resolution No. 2023:35:05
Moved by Councillor Morey
Seconded by Councillor Ruttan
That By-law 2023-98 be given third reading, signed and sealed.

Carried

13 Reports for Information

a)

There were none.

14 Committee of the Whole

a) There was none.

15 Information Items

a) There were none.

16 Notice of Motions

a) There were none.

17 Rise and Report regarding County Council and External Boards

a) There were none.

18 Announcements/Statements by Councillors

a) There were none.

19 Closed Session (if requested)

a) There was none.

20 Confirmatory By-law

a) Resolution

Resolution No. 2023:35:06
Moved by Councillor Roberts
Seconded by Councillor Pegrum
That By-law 2023-99, being a by-law to confirm generally all actions and proceedings of the Council of the Township of South Frontenac, be given first and second reading.

Carried

Resolution No. 2023:35:07
Moved by Councillor Morey
Seconded by Councillor Godfrey
That By-law 2023-99, being the confirmatory by-law, be given third reading, signed and sealed.

Carried

21 Adjournment

a) Resolution

Resolution No. 2023:35:08
Moved by Councillor Trueman
Seconded by Councillor Leonard
That the Council meeting of December 12, 2023 be adjourned at 11:36 a.m.

Carried

Ron Vandewal, Mayor

James Thompson, Clerk

Township of South Frontenac

Staff Report

To:	Council
Prepared by:	Public Services Department
Date of Meeting:	December 19, 2023
Subject:	**Drinking Water Quality Management System: Management Review Report and Endorsement of Operational Plan**

Summary

The purpose of this report is to recommend that Township Council receive the Top Management Report for 2022 and re-endorse the Operational Plan for the Sydenham Drinking Water System.

Recommendation

That Council receive the Sydenham Drinking Water System Management Review Summary Report 2022, Management Review Meeting Minutes and Audit Report; and

That Council re-endorse the Operational Plan for the Sydenham Drinking Water System and authorize the Mayor and Clerk to sign the Owner and Top Management Endorsement of the Operational Plan for Sydenham's Drinking Water Supply Systems document showing Council's endorsement of the plan.

Background

South Frontenac Township, as the Owner of the Sydenham Drinking Water System, is required by the Safe Drinking Water Act to ensure that these systems are operated by an Accredited Operating Authority, Utilities Kingston.

In accordance with the Drinking Water Quality Management Standard, one component is the annual Management Review. This addresses the continuing suitability, adequacy, and effectiveness of the Quality Management System. The Management Review was recently completed by the Operating Authority's identified Top Management. The report and meeting minutes are required to be provided to the Owner (Council), and as a best management practice it is recommended that the Owner re-endorse the Operational Plan and their commitment to the Quality Management System.

Background on Drinking Water Quality Management Standard

The Drinking Water Quality Management Standard (DWQMS) approved under section 21 of the Safe Drinking Water Act was developed in partnership between the Ministry of the Environment, Conservation and Parks (MECP) and Ontario's water sector, after Justice Dennis O'Connor's, Report of the Walkerton Inquiry 2002 recommended the adoption of quality management for municipal drinking water systems.

The DWQMS complements the legislative and regulatory framework by endorsing a proactive and preventive approach to assuring 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 is based on a "plan, do, check, and improve" methodology which is similar to that found in some international standards. "Plan" requirements of the standard typically specify policies and procedures that must be documented in the operational plans for the drinking water system. "Do" requirements specify the policies and procedures that must be implemented. "Check" and "Improve" requirements of the standard are reflected in requirements to conduct internal audits and management reviews. The MECP has developed a pocket guide that examines the requirements of the DWQMS, providing high level overview of what each of the requirements means in the context of a municipal residential drinking water system.

Most applicable to the recommendations in this report, the SDWA requires Owners and Operating Authorities of Municipal Residential Drinking Water Systems to have an accredited Operating Authority (Utilities Kingston). In order to become accredited, an Operating Authority must establish and maintain a Quality Management System (QMS). Minimum requirements for the QMS are specified in the Standard, the DWQMS.

Utilities Kingston has appointed a Quality Management Representative and Alternate Representative to administer the QMS by ensuring that processes and procedures needed for the system are established and maintained. Additionally, the QMS Representative reports to Top Management and the Owner on the performance of the QMS including any need for improvement, ensures that personnel are aware of all applicable legislative and regulatory requirements that pertain to their duties for the operation of the system, and promotes awareness of the QMS throughout the Operating Authority.

The Owner must in writing endorse the Operational Plan and receive relevant aspects of the QMS including the adequacy of infrastructure necessary to operate and maintain the

system, summary of maintenance, rehabilitation, renewal programs, and sampling results. These are all included in the Management Report, provided as Attachment A to this report.

Discussion/Analysis

Management Review Report and Endorsement of Operational Plan

Utilities Kingston, as the Operating Authority for the Sydenham Drinking Water Systems, is responsible for the implementation and ongoing maintenance of a Quality Management System (QMS) which meets the requirements of the Drinking Water Quality Management Standard (DWQMS). The accreditation of operating authorities is based on the successful implementation of a QMS.

In accordance with the DWQMS, one component is the annual Management Review, which addresses the continuing suitability, adequacy, and effectiveness of the QMS, including the results of the annual accreditation audit. This Management Review was recently completed by the Operating Authority's identified Top Management. The Top Management Summary report, meeting minutes and the annual accreditation report are contained in Attachments A, B and C, respectively, to this report, and are required to be provided to the Owner.

No regulatory non-compliances, non-conformances or deficiencies were identified in the Management Review Summary report for the Sydenham Drinking Water System.

The DWQMS requires that an Operational Plan be maintained by the Operating Authority, endorsed by the Owner, and accepted by the Ministry of Environment, Conservation and Parks. The Operational Plan for the Sydenham Drinking Water Systems was last approved by Top Management and Endorsed by the System Owner in 2022. There were no changes made to the Operational Plan in 2022. The Operational Plan is available on the Townships website and is also linked to Utilities Kingston's website and attached as Attachment F to this report. It is recommended that the Owner re-endorse the Operational Plan and their commitment to the QMS.

Financial Implications

Not applicable to this report.

Relationship to Strategic Plans

☒ Not applicable to this report.

☐ This initiative is supported by the following priorities of the 2019-2022 Strategic Plan.

- Priority: Choose an item.
- Action Item (if applicable):

Climate Considerations

☒ Not applicable to this report.

☐ This initiative supports climate change mitigation/adaption efforts in South Frontenac; and/or impacts the Township's resilience to climate change.

Notice/Consultation

- Utilities Kingston

Attachments

Attachment A – Sydenham Management Review Summary Report 2022

Attachment B – Sydenham DWQMS Management Review Meeting Minutes

Attachment C – Sydenham DWS Systems Audit Report

Attachment D – W-P-01 Sydenham QMS Policy

Attachment E – W-P-02 Sydenham QMS Owner and Top Management Commitment and Endorsement (intentionally left blank for re-endorsement)

Attachment F – W-OP-01 Sydenham Operational Plan v.8.0

Approvals

Submitted By:

W. Troy Dunlop, C.E.T.
Manager of Engineering and Capital Projects

Reviewed By:

Kyle Bolton, C.E.T.
Director of Public Services

Approved By:

Louise Fragnito, CPA, CGA
Chief Administrative Officer

Sydenham Management Review Summary Report 2022

INTRODUCTION

This report has been prepared for the system owner to provide a summary of information reviewed by Top Management to evaluate the continuing suitability, adequacy, and effectiveness of the Quality Management System (QMS) for the Sydenham Drinking Water System as required by the Drinking Water Quality Management Standard (DWQMS).

INCIDENTS OF REGULATORY NON-COMPLIANCE

There were no incidents of regulatory non-compliance.

INCIDENTS OF ADVERSE DRINKING WATER TESTS

In total, 566 treated water and distribution system samples were collected for testing by an accredited laboratory. One sample collected resulted in a notification of an indicator of adverse water quality. Notifications of Adverse Water Quality represent 0.18% of the total samples collected.

DEVIATIONS FROM CRITICAL CONTROL POINT LIMITS AND RESPONSE ACTIONS

There were three reported deviations from the critical control limits. Responses for these incidents were pursued appropriately and effectively through process adjustments or through flushing to restore the combined chlorine residual to above 1.00mg/l.

THE EFFECTIVENESS OF THE RISK ASSESSMENT PROCESS

The risk assessments outcomes for the Sydenham System were reviewed in Q4 and included potential hazardous events and associated hazards listed by the Ministry of the Environment, Conservation and Parks (MECP). The risk assessment outcomes are available on SharePoint. These risk assessments and associated outcomes have been identified as effective due to their ability to reduce risk, and consistently provide safe and reliable water services to our customers and community. The risk assessment outcomes are available on SharePoint. There were no new risks identified in this reporting period.

INTERNAL AND THIRD-PARTY AUDIT RESULTS

Internal Audit

Internal Audits were completed and covered all 21 elements of the DWQMS. No major or minor-nonconformance were identified.

External Audit

QMS documents and records were provided to SAI Global for the External System Audit. The external audit resulted in no non-conformances. A copy of the audit report has been attached to this report as an appendix.

RESULTS OF EMERGENCY RESPONSE TESTING

Emergency Response Testing

Tabletop scenarios for each of the identified Emergency Response and Recovery Procedures were planned as part of this year's emergency response training and testing. Staff worked through scenarios with their supervisor to identify deficiencies and potential improvements to the Emergency Response and Recovery Procedure and other procedures and processes applicable to emergency situations.

Identified Possible Improvements

Annual emergency response training and testing involving the evaluation of emergency scenarios and identification of appropriate response actions and necessary reporting has demonstrated to be a very valuable element of the DWQMS. Operators continue to immediately demonstrate and identify all appropriate response actions and necessary reporting requirements during the tabletop scenario. Operators also recognize the importance of sharing and communicating information between Treatment Operations, System Operations, and Engineering Services. Communication and working together as a team before and after an event further improve the assessment of potential emergency events and the response actions taken. The following action items were identified during this year's training exercise.

- Confirm Spill Kit is on truck 51.
    - Follow up - Completed.
- Confirm Spill Kits are in barrels outside of Bay.
    - Follow up - Completed.
- Inform all staff of capacity of Spill Kits
    - Follow up - Completed.
- Investigate Catch basin Spill Kit possibilities.
    - Follow up - Completed.
- Equip all trucks with appropriately sized spill kits.
    - Follow up - Completed.
- Follow-up on the following question from Sam Bowden "Would it be beneficial to redirect the dewatering pump to somewhere other than where it was originally? To a manhole possibly?"
    - Follow up - Completed.
- Communicate to staff Outstanding Adverse Water Quality Notification
    - Follow up - Completed.
- Discuss with Operations if there is a need for a checklist of people to notify in an emergency. If so, who maintains this list?
    - Follow up - Completed.

STATUS OF POSSIBLE IMPROVEMENTS FROM PREVIOUS TESTING

No improvements were identified from the emergency response testing.

OPERATIONAL PERFORMANCE

The Sydenham water treatment plant operated by Utilities Kingston continued to perform well. Process inputs also remained relatively stable during the reporting year. Current and routine maintenance, rehabilitation, and renewal programs continue to be a priority.

Distribution system performance is typically measured by its ability to provide safe drinking water at adequate pressure and volume, and its efficiency in delivering that water with minimal loss. Aspects of distribution system performance, such as lost water, can have a major impact on the performance of treatment, pumping, and storage facilities.

System Inspection Rating

Sydenham Drinking Water System (DWS) – 100%

Percentage Of Microbiological (Total Coliform & E. Coli) Test Results Meeting Ontario's Drinking Water Quality Standards

Sydenham DWS – 99.7%*

*Any samples taken within the rating period that results in an indicator of adverse water quality will affect the rating.

Percentage Of Chemical & Radiological Test Results Meeting Ontario's Drinking Water Quality Standards

Sydenham DWS 100%

RAW WATER SUPPLY AND DRINKING WATER QUALITY TRENDS

Raw water chemistry is continuously monitored as it can change quickly because of Sydenham Lake's composition of granite to the north and limestone to the south.

Growths of blue green algal blooms are increasing in Ontario's lakes and rivers. This is generating concern for changes in risk to the raw water supply and the potential of associated human health dangers caused by cyanobacteria that can be present in toxic blooms. Weekly testing of intake and treated water is being tested for Microcystin, the harmful toxin found in Blue-green algal blooms. Additional blue green algal refresher training is also by operators in advance of the typical June to October growing season.

FOLLOW-UP ON ACTION ITEMS FROM PREVIOUS MANAGEMENT REVIEWS

The following action items were identified during the previous management review:

- Determine who at South Frontenac can provide water loss information.
    - Pending.
- Establish a formalized system for South Frontenac to forward customer complaints to Utilities Kingston.
    - Completed.
- Revise W-P-05 Sydenham QMS Owner and Top Management Commitment and Endorsement to reflect recent changes to Top Management.
    - Completed.

THE STATUS OF MANAGEMENT ACTION ITEMS IDENTIFIED BETWEEN REVIEWS

There have been no action items identified since the last Management Review.

CHANGES THAT COULD AFFECT THE QUALITY MANAGEMENT SYSTEM

There have been no changes to the MECP DWQMS 2.0.

Our strong documentation and reporting system allow us to evaluate the effectiveness and operational performance of the DWS as required by the standard. Our QMS also incorporates proactive and reactive approaches to ensure continual improvement of the system, ensuring that the QMS is not limited to fixing things as they fail. Although the Standard does not continually change, it does require continuous ongoing changes and monitoring of the system that include but not limited to documents, work process, organizational changes, initiatives, strategies, and information.

CONSUMER FEEDBACK

Water Quality Assurance Operators reported no water quality complaints or concerns.

THE RESOURCES NEEDED TO MAINTAIN THE QUALITY MANAGEMENT SYSTEM

There were no identified deficiencies during the management review. It was decided that current programs and resources are continued, no additional action items are required.

Top Management has made the necessary resources available to maintain and continually improve the QMS. To ensure the requirement continues to be met, it is recommended that current dedicated resources (QMS Representative and Alternate) be maintained, and that Top Management continues to make additional personnel available as requested for QMS activities such as risk assessments, maintenance and infrastructure reviews, document development, revision and review, training, and other activities identified as necessary to maintain and improve the QMS.

THE RESULTS OF THE INFRASTRUCTURE REVIEW

The annual Review and Provision of Infrastructure was completed by the Director of Water / Wastewater in the last quarter of the reporting Calendar year. The review confirmed that relevant and applicable information is regularly reviewed by personnel to evaluate the condition and capacity of the DWS and its components. No recommendations were identified by the Review and Provision of Infrastructure review.

MULTI-YEAR INFRASTRUCTURE PROGRAM

Existing infrastructure is reviewed based on criteria such as age, material, available condition assessments, and main break history.

From this review a priority list was compiled. Then, with consideration for each element's needs, level of priority, and the available budget, a master list of projects was developed, defining the infrastructure renewal plan. The following capital projects were completed in:

- Pneumatic Actuated Valve Replacement.
- Redundant Air Compressor and Parallel Air Supply System.

OPERATIONAL PLAN CURRENCY, CONTENT AND UPDATES

The Operational Plan for the Sydenham Water System was last approved by Top Management and Endorsed by the System Owner in 2021. There were no changes made to the Operational Plan.

STAFF SUGGESTIONS

Suggestions received from individual personnel concerning the QMS have been focused on and resulted in improvements to the processes and forms used to record operational information and improvements to how information is accessed through SharePoint. Staff have made considerable suggestions to continue to further improve ease of use to SharePoint from mobile devices. Staff also provide suggestions for improvements through their participation in annual QMS Review Training and Emergency Response and Recovery Training and Testing. The majority of staff suggestions are made verbally to either Supervisors or Quality Management Coordinators. Staff suggestions that require a change to a document or form are recorded using the Document Change Request form with OFI, BMP, Corrective Action Request, and Preventative Action Request forms available as a formalized processes to capture other staff suggestions. Additionally, a Water Staff Suggestions List is available to encourage suggestions and feedback related to the day to day operations. The Water Staff Suggestions list received no entries this reporting year but continues to be made available to staff as a formal way to make suggestions.

IDENTIFIED DEFICIENCIES, DECISIONS, AND ACTION ITEMS

There were no identified deficiencies during the management review.

It was decided that all other programs and resources are continued.

BEST MANAGEMENT PRACTICES AND OPPORTUNITIES FOR IMPROVEMENT

Best Management Practices (BMI) and Opportunities for Improvement (OFI). BMP & OFI items are documented using the DWQMS Best Management Practices List on SharePoint. Implemented BMPs and OFIs are identified for items that assist the owner and operating authority of the DWS in the delivery of safe, high quality drinking water and in providing mechanisms to optimize efficiencies within the DWS and/or QMS and provide information to assist in future planning for the systems.

The following Best Management Practices and follow up details are provided below:

- Gather documentation on a maintenance and asset management program for Systems and determine what resources are necessary to drive it.
    - Completed.
- Attended OWWA Water Conference where we attended breakout sessions, networked with peer and industry experts.
    - Completed.
- Created a "Planned Work Assessment and Contingency Plan" form. This form is available to staff on SharePoint as a tool to document and communicate planned work. This is not a required form but is provided as an additional tool to assist in organizing and communicating planned work that potentially could affect other groups.
    - Completed.
- Participated in the OMWA webinar - The Great Resignation and the Challenge of Hiring and Retaining Staff
    - Completed.
- Completed Best Management Participated in Applied Learning from Operations during COVID-19 put on by Ontario Municipal Water Association.
    - Completed.

Opportunity for Improvement and follow up details are provided below:

- Update the Competencies, Certification, and Training table in W-L-13 Kingston and Cana Organizational Structure, Roles, Responsibilities, Authorities and Competency to require the Sub-Foreperson – System Operations to have a Class IV Water Distribution Certificate.
    - Updated the job titles to match the new position titles.
- Add clarification to the table in W-L-05 Operator Training Table that Operator Responsibility Training is defined in W- L-13s Sydenham Organizational Structure, Roles, Responsibilities, Authorities and Competency.
    - Completed.
- Update W-E-03 Boil Water Advisory Notification to add the person responsible for Utilities Kingston communications with additional communication methods updated to reflect modern technology.
    - Completed.

DRINKING WATER QUALITY MANAGEMENT SYSTEM
MINUTES OF THE 2023 MANAGEMENT REVIEW MEETING FOR THE SYDENHAM DRINKING WATER SYSTEMS

October 30, 2023
Start Time: 1430hrs
In Attendance: David Fell, Remi Adedapo, Heather Roberts, Julie Runions, Chris Leeman, Kurt Clark, Carl Dooher, Philip Emon, James Patenaude, Adam Long

---

Raw Water Supply and Drinking Water Quality Trends

DF asked why there were zero flow tests performed since 2019. CD explained that for Sydenham, we are not required to do flow testing annually, but every 5 years. DF asked if it is more efficient to do them all in one year, or to spread them across the 5 years. CD answered yes, System Operators inspect all hydrants every year, but only do flow tests every 5 years as it is more efficient.

The Results of The Infrastructure Review

RA: Are the recommended works in the table labelled "Recommended Works and Implementation Status to 2029" in the budget? HR answered, yes.

Identified Deficiencies, Decisions, and Action Items from this Management Review

Identified Action Items from This Management Review		
Action Item	**Responsible Person**	**Follow Up**
There were no actions identified during this Management Review Meeting	N/A	N/A

End Time: 1500hrs

Audit Report

Re Accreditation Audit for

1425445 Ontario Limited (Operating as Utilities Kingston)

1670083-03

Audited Address:
4410 Point Road, Sydenham, Ontario, CAN, K0H 2T0

Start and End Date: June 21, 2022

Type of audit: Verification Audit

Issue Date: June 22, 2022
Revision Level: *Final*

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BACKGROUND INFORMATION

SAI Global conducted an audit of 1425445 Ontario Limited (Operating as Utilities Kingston) beginning and ending on June 21, 2022 to DRINKING WATER QUALITY MANAGEMENT STANDARD VERSION 2 - 2017.

The purpose of this audit report is to summarise the degree of compliance with relevant criteria, as defined on the cover page of this report, based on the evidence obtained during the audit of your organization. This audit report considers your organization's policies, objectives, and continual improvement processes. Comments may include how suitable the objectives selected by your organization appear to be in regard to maintaining customer satisfaction levels and providing other benefits with respect to policy and other external and internal needs. We may also comment regarding the measurable progress you have made in reaching these targets for improvement.

SAI Global audits are carried out within the requirements of SAI Global procedures that also reflect the requirements and guidance provided in the international standards relating to audit practice such as ISO/IEC 17021-1, ISO 19011 and other normative criteria. SAI Global Auditors are assigned to audits according to industry, standard or technical competencies appropriate to the organization being audited. Details of such experience and competency are maintained in our records.

In addition to the information contained in this audit report, SAI Global maintains files for each client. These files contain details of organization size and personnel as well as evidence collected during preliminary and subsequent audit activities (Documentation Review and Scope) relevant to the application for initial and continuing certification of your organization.

Please take care to advise us of any change that may affect the application/certification or may assist us to keep your contact information up to date, as required by SAI Global Terms and Conditions.

This report has been prepared by SAI Global Limited (SAI Global) in respect of a Client's application for assessment by SAI Global. The purpose of the report is to comment upon evidence of the Client's compliance with the standards or other criteria specified. The content of this report applies only to matters, which were evident to SAI Global at the time of the audit, based on sampling of evidence provided and within the audit scope. SAI Global does not warrant or otherwise comment upon the suitability of the contents of the report or the certificate for any particular purpose or use. SAI Global accepts no liability whatsoever for consequences to, or actions taken by, third parties as a result of or in reliance upon information contained in this report or certificate.

Please note that this report is subject to independent review and approval. Should changes to the outcomes of this report be necessary as a result of the review, a revised report will be issued and will supersede this report.

Standard:	DRINKING WATER QUALITY MANAGEMENT STANDARD VERSION 2 - 2017
Scope of Certification:	Drinking Water
Drinking Water System Owner:	The Corporation of the Township of South Frontenac
Operating Authority:	1425445 Ontario Ltd. (Operating as Utilities Kingston)
Population Services:	940
Activities:	**Treatment and Distribution**
Drinking Water Systems	Sydenham Drinking Water System Licence #166-101, issue 3
Total audit duration:	**Person(s):** 1 **Day(s):** 0.75
Audit Team Member(s):	Team Leader Sandra Tavares
Other Participants:	Refer to Audit Summary below and associated Meeting Attendees

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Definitions and action required with respect to audit findings

Major Non-conformance:

Based on objective evidence, the absence of, or a significant failure to implement and/or maintain conformance to requirements of the applicable standard. Such issues may raise significant doubt as to the capability of the management system to achieve its intended outputs (i.e. the absence of or failure to implement a complete Management System clause of the standard); or

A situation which would on the basis of available objective evidence, raise significant doubt as to the capability of the Management System to achieve the stated policy and objectives of the customer.

NOTE: The "applicable Standard" is the Standard which SAI Global are issuing certification against, and may be a Product Standard, a management system Standard, a food safety Standard or another set of documented criteria.

Action required: This category of findings requires SAI Global to issue a formal NCR; to receive and approve client's proposed correction and corrective action plans; and formally verify the effective implementation of planned activities. Correction and corrective action plan should be submitted to SAI Global prior to commencement of follow-up activities as required. Follow-up action by SAI Global must 'close out' the NCR or reduce it to a lesser category within 90 days for initial certification and within 60 days for surveillance or re-certification audits, from the last day of the audit.

If significant risk issues (e.g. safety, environmental, food safety, product legality/quality, etc.) are detected during an audit these shall be reported immediately to the Client and more immediate or instant correction shall be requested. If this is not agreed and cannot be resolved to the satisfaction of SAI Global, immediate suspension shall be recommended.

In the case of initial certification, failure to close out NCR within the time limits means that the Certification Audit may be repeated.

If significant risk issues (e.g. safety, environmental, food safety, product legality/quality, etc.) are detected during an audit these shall be reported immediately to the Client and more immediate or instant correction shall be requested. If this is not agreed and cannot be resolved to the satisfaction of SAI Global, immediate suspension shall be recommended.

In the case of an already certified client, failure to close out NCR within the time limits means that suspension proceedings may be instituted by SAI Global.

Follow-up activities incur additional charges.

Minor Non-conformance:

Represents either a management system weakness or minor issue that could lead to a major nonconformance if not addressed. Each minor NC should be considered for potential improvement and to further investigate any system weaknesses for possible inclusion in the corrective action program

Action required: This category of findings requires SAI Global to issue a formal NCR; to receive and approve client's proposed correction and corrective action plans; and formally verify the effective implementation of planned activities at the next scheduled audit.

Opportunity for Improvement:

A documented statement, which may identify areas for improvement however shall not make specific recommendation(s).

Action required: Client may develop and implement solutions in order to add value to operations and management systems. SAI Global is not required to follow-up on this category of audit finding.

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Audit Type and Purpose

On-site Verification Audit:

An onsite audit to assess whether a QMS has been implemented for the subject system that meets the “DO” requirements of the DWQMS V2.

Audit Objectives

The objective of the audit was to determine whether the drinking water Quality Management System (QMS) of the subject system conforms to the requirements of the Ontario Ministry of the Environment, Conservation and Parks (MECP) Drinking Water Quality Management Standard (DWQMS V2).

The audit was also intended to gather the information necessary for SAI Global to assess whether accreditation can continue or be offered or to the Operating Authority.

Audit Scope

The facilities and processes associated with the operating authority’s QMS were objectively evaluated to obtain audit evidence and to determine a) whether the quality management activities and related results conform with DWQMS V2 requirements, and b) if they have been effectively implemented and/or maintained.

Audit Criteria:

- The Drinking Water Quality Management Standard Version 2
- Current QMS manuals, procedures and records implemented by the Operating Authority
- SAI Global Accreditation Program Handbook

Confidentiality and Documentation Requirements

The SAI Global stores their records and reports to ensure their preservation and confidentiality. Unless required by law, the SAI Global will not disclose audit records to a third party without prior written consent of the applicant. The only exception will be that the SAI Global will provide audit and corrective action reports to the Ontario Ministry of the Environment. For more information, please refer to the SAI Global Accreditation Program Handbook.

As part of the SAI Global Terms, it is necessary for you to notify SAI Global of any changes to your Quality Management System that you believe are significant enough to risk non-conformity with DWQMS V2: For more information, please refer to the SAI Global Accreditation Program Handbook.

Review of any changes

Changes to the Operating Authority since last audit include: refer to Element 9

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EXECUTIVE OVERVIEW

Based on the results of this onsite verification audit (Stage 2) and the results of the System audit (Stage 1) it has been determined that the management system is effectively implemented and meets the requirements of the standard relative to the scope of certification identified in this report; therefore, a recommendation for certification will be submitted to SAI Global review team.

Recommendation

Based on the results of this audit it has been determined that the management system is effectively implemented and maintained and meets the requirements of the standard relative to the scope of certification identified in this report; therefore, a recommendation for (continued) certification will be submitted to SAI Global review team.

Opportunities for Improvement:

The following opportunities for improvement have been identified.

- **Element 2 QMS Policy** – There is an opportunity to post the QMS Policy (and associated Operational Plan) on the South Frontenac website.
- **Element 5 Document and Records Control** – There is an opportunity to:
  i) ensure document control (e.g., Water Treatment Plant Chemistry sheet).
  ii) include external maintenance records (e.g., Tower Inspection, Generator and Calibration reports) and their specific locations within the W-L-04 Records Table.
- **Element 13 Essential Supplies and Services** – There is an opportunity to retain evidence of essential services quality (e.g., calibration services).
- **Element 18 Emergency Management** – There is an opportunity to create an emergency testing planning matrix to ensure all emergency situations identified (e.g., W-E-05 Spill Response as a result of identified seasonal recreational traffic risk, W-E-03 Boil Water Advisory, and W-E-02 Adverse Water Quality, W-E-04 Drinking Water Contamination Investigation and Response) are tested within a 3-year period (coinciding with the DWQMS ReAccreditation cycle) to ensure preparedness.
- **Element 21 Continual Improvement** – There is an opportunity to:
  i) consistently identify root cause (e.g., 2020 internal audit 201027-201225-16-1) and review of effectiveness (21115-211129-12-1 from 2021 internal audit), complete with verification comments.
  ii) review Best Management Practice ‘Objective Evidence’, ‘Response’ and ‘Effectiveness’ SharePoint fields for applicability and completion.

It is suggested that the opportunities for improvement be considered by management to further enhance the Operating Authority’s Quality Management System and performance.

Management System Documentation

The management systems operational plan(s) was reviewed and found to be in conformance with the requirements of the standard.

Management Review

Records of the most recent management review meetings were verified and found to meet the requirements of the standard. All inputs were reflected in the records and appear suitably managed as reflected by resulting actions and decisions.

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Internal Audits

Internal audits are being conducted at planned intervals to ensure conformance to planned arrangements, the requirements of the standard and the established management system.

Corrective, Preventive Action & Continual Improvement Processes

The Operating Authority is implementing an effective process for the continual improvement of the management system through the use of the quality policy, quality objectives, audit results, data analysis, the appropriate management of corrective and preventive actions and management review.

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Summary of Findings

1. Quality Management System	Conforms
2. Quality Management System Policy	OFI
3. Commitment and Endorsement	Conforms
4. Quality Management System Representative	Conforms
5. Document and Records Control	OFI
6. Drinking-Water System	Conforms
7. Risk Assessment	Conforms
8. Risk Assessment Outcomes	Conforms
9. Organizational Structure, Roles, Responsibilities and Authorities	Conforms
10. Competencies	Conforms
11. Personnel Coverage	Conforms
12. Communications	Conforms
13. Essential Supplies and Services	OFI
14. Review and Provision of Infrastructure	Conforms
15. Infrastructure Maintenance, Rehabilitation & Renewal	Conforms
16. Sampling, Testing and Monitoring	Conforms
17. Measurement & Recording Equipment Calibration and Maintenance	Conforms
18. Emergency Management	OFI
19. Internal Audits	Conforms
20. Management Review	Conforms
21. Continual Improvement	OFI

Major NCR #	Major non-conformity. The auditor has determined one of the following: (a) a required element of the DWQMS has not been incorporated into a QMS; (b) a systemic problem with a QMS is evidenced by two or more minor non-conformities; or (c) a minor non-conformity identified with a corrective action request has not been remedied.
Minor NCR #	Minor non-conformity. In the opinion of the auditor, part of a required element of the DWQMS has not been incorporated satisfactorily into a QMS.
OFI	Opportunity for improvement. Conforms to requirement, but there is an opportunity for improvement.
Conforms	Conforms to requirement.
NANC	Not applicable/Not Covered during this audit.
********	Additional comment added by auditor in the body of the report.

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PART D. Audit Observations, Findings and Comments

DWQMS Reference:	1 Quality Management System
Client Reference:	Sydenham Drinking Water System (DWS) Operational Plan (OP) W-OP-03 (V8.0, 5-Nov-2021)

Details: *(personnel interviewed, procedures, activities and records observed)*

The Operating Authority (OA, Utilities Kingston) has established and maintains the Quality Management System (QMS) in accordance with the DWQMS requirements and the policies and procedures documented in the Operational Plan (OP) available at https://utilitieskingston.com/Water/Quality/Management (viewing at the Utilities Kingston Service Centre at 85 Lappan's Lane could not be confirmed due to time constraints). ***Refer to Element 2 OFI.***

DWQMS Reference:	2 Quality Management System Policy
Client Reference:	Sydenham DWS OP W-OP-03 Section 2 (V8.0, 5-Nov-2021), referenced W-P-04 QMS Policy for the Sydenham Drinking Water System

Details: *(personnel interviewed, procedures, activities and records observed)*

Utilities Kingston has established and maintains a QMS that is consistent with its QMS Policy via:

a) commitment to maintenance and continual improvement as per Elements 15 and 21 below,

b) commitment to the Consumer to provide safe drinking water as per Element 16,

c) commitment to comply with applicable legislation and regulations as per Element 3 directly below, and

d) is in a form that can be communicated to all OA personnel, the Owner, and the Public via the OP as per Element 1 directly above ***– refer to OFI***.

DWQMS Reference:	3 Commitment and Endorsement
Client Reference:	Sydenham DWS OP W-OP-03 Section 3 (V8.0, 5-Nov-2021), W-P-05 Owner and Top Management Endorsement of the Operational Plan for the Sydenham DWS (rev. 8-Nov-2021)

Details: *(personnel interviewed, procedures, activities and records observed)*

Top Management (represented by the President & Chief Executive Officer [CEO], Chief Operating Officer [COO], Director Water & Wastewater Operations, and Managers of Water & Wastewater Treatment and System Operations) have provided evidence of commitment to an effective QMS by:

a) ensuring that a QMS is in place that meets the DWQMS requirements as per Element 1 above,

ensuring the OA is aware of all applicable legislative and regulatory requirements (e.g., formalising existing microcystin through license and quarterly HaloAcetic Acid [HAA] sampling and testing, MECP Watermain Disinfection Procedure and MECP cybersecurity risk [Asset Risk Assessment Report for SCADA dated 9-Feb-2021] and their identification via training, MECP emails and interaction and impact on the QMS was discussed with Manager of System Operations, QMS Representative and Alternate),

b) communicating the QMS according to the procedure for communications as per Element 12,

c) determining, obtaining, or providing the resources needed to maintain and continually

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improve the QMS as per Element 20.

DWQMS Reference:	4 Quality Management System Representative
Client Reference:	Sydenham DWS OP W-OP-03 Section 4 (V8.0, 5-Nov-2021), W-P-06 QMS Representative for the Sydenham DWS Acknowledgement of Responsibilities (rev.26-Jan-2022)

Details: *(personnel interviewed, procedures, activities and records observed)*

Top Management has appointed and authorized via W-OP-06 dated 28-Apr-2022, a QMS Representative and alternate who, irrespective of other responsibilities:

- administer the QMS by ensuring that processes and procedures are established and maintained, and that current versions of documents required are being used at all times, as per Element 5.
- report to Top Management on the QMS performance and any need for improvement as per Element 20,
- ensure that personnel are aware of all applicable legislative and regulatory requirements that pertain to their duties for the operation of the Subject System as per Element 3 directly above, and
- promote QMS awareness throughout the OA as per Elements 10 and 12.

DWQMS Reference:	5 Document and Record Control
Client Reference:	Sydenham DWS OP W-OP-03 Section 5 (V8.0, 5-Nov-2021), W-G-01 Document Control (rev.28-Apr-2020) and W-G-02 Records Control (rev.29-Apr-2020), W-L-01 Document and W-L-04 Records Control Tables (rev.18-Dec-2018)

Details: *(personnel interviewed, procedures, activities and records observed)*

Utilities Kingston has implemented and conforms to W-G-01 and -02 and W-L-01 and -04 for document and records control and has ensured the QMS documentation for the Subject System includes, as referenced throughout this summary:

a) the OP and its associated policies and procedures,

b) documents and records determined by the OA as being needed to ensure the effective planning, operation, and control of its operations, and

c) the results of internal and external audits and Management Reviews as per Elements 19 and 20 below, respectively.

W-G-01 Distribution and revision of procedures to ensure currency, along with W-G-02 record accuracy, availability, and accessibility (e.g., cloud-based unet / SharePoint and server-based shared directories) was reviewed with Manager of Systems Operations and QMS Representative and alternate. W-L-04 Records Control Table hard (2019-2022 Rounds Sheets binders at 4410 Point Road, Sydenham Water Treatment Plant [WTP]) and soft (e.g., PeopleSoft) copy locations (Utilities Kingston 300 King St., Kingston) and their minimum retention time was also discussed and observed.

DWQMS Reference:	6 Drinking Water System
Client Reference:	Sydenham DWS OP W-OP-03 Section 6 (V8.0, 5-Nov-2021)

Details: *(personnel interviewed, procedures, activities and records observed)*

Utilities Kingston has ensured the description of the Drinking Water System is kept current, confirmed through a tour of the Sydenham Class 2 (certificate posted dated 4-Oct-2017) WTP and

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SCADA for the elevated storage tank (level is function of batch facility). Raw water source, low lift and submersible pumps, pre-chlorination, 2 Granular Activated Carbon (GAC) tanks run in summer for colour and odour, 2 clearwells, backwashing/storage, primary and secondary disinfection, including alternating Ultra-Violet (UV) units, 3 pressure filters and high lift pumps (HLPs 1-3) and processes for dealing with temperature fluctuations were discussed. Ongoing monitoring of raw water quality and continual monitoring of the water treatment processes was observed.

DWQMS Reference	7 Risk Assessment
Client Reference:	Sydenham DWS OP W-OP-03 Section 7 (V8.0, 5-Nov-2021), W-G-03 Risk Assessment (rev.14-Jun-2017)

Details: *(personnel interviewed, procedures, activities and records observed)*

Utilities Kingston performs a risk assessment consistent with OP Section 7. The Risk Assessment Team and annual and 36-month process was confirmed with the Manager of Systems Operations and QMS Representative, including reliability and redundancy of equipment. As per 'QMS Revisions Since Last Audit Completed in 2021', an annual review was completed with a re-assessment in 2019 (refer to Element 20 below).

DWQMS Reference:	8 Risk Assessment Outcomes
Client Reference:	Sydenham DWS OP W-OP-03 Section 8 (V8.0, 5-Nov-2021), W-L-11s Sydenham Risk Assessment Outcomes Table

Details: *(personnel interviewed, procedures, activities and records observed)*

Utilities Kingston has implemented and conforms to OP Section 8. The identification of hazardous events associated with drinking water health hazards, and the assessment of the associated risks for the Sydenham Drinking Water System was last completed in 2019 with results in the Risk Assessment Outcomes Table. Deviations from Critical Control Limits (CCLs) are addressed in Element 20 with one instance of Filter Effluent Turbidity 24-Nov-2018 and the remainder Secondary Disinfection within the last 3 years. Forms can be completed electronically via SharePoint.

DWQMS Reference:	9 Organizational Structure, Roles, Responsibility and Authorities
Client Reference:	Sydenham DWS OP W-OP-03 Section 9 (V8.0, 5-Nov-2021), Sydenham DWQMS Organizational Structure W-L-13 (rev.24-Jan-2022)

Details: *(personnel interviewed, procedures, activities and records observed)*

Utilities Kingston keeps current the description of the organizational structure including respective W-L-13 roles, responsibilities, and authorities, and communicates this information to OA personnel and the Owner as per Element 12 below. Management Review and Operator responsibilities were confirmed with the Manager of Systems Operations and QMS Representative and alternate. Manager of Systems Operations also confirmed involvement in risk assessment, maintenance and calibration processes.

DWQMS Reference:	10 Competencies
Client Reference:	Sydenham DWS OP W-OP-03 Section 10 (V8.0, 5-Nov-2021), Sydenham DWQMS Organizational Structure, W-L-13s (rev.24-Jan-2022), W-G-04 Operator Training (rev.11-Dec-2012)

Details: *(personnel interviewed, procedures, activities and records observed)*

Utilities Kingston undertakes activities to meet and maintain competencies for personnel directly

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affecting drinking water quality, and ensure that personnel are aware of the relevance of their duties and how they affect safe drinking water as per W-G-04, and maintains records of these activities (e.g., PeopleSoft which tracks frequencies such as the 3-year Director-approved MECP Mandatory Operator training; [at least annual] report observed sent to Manager of Systems Operations from Clerk with access by both) associated with Operator certification (observed in binder at Sydenham WTP), e.g.:

- **J. Andersen** Class 4 Treatment 88243 exp.31-Jul-2024
- **T. Arthur** Classes 3 Treatment 108108 and 2 Distribution 113504 exp. 31-Dec- and 30-Apr-2024 respectively
- **B. Curran** Class 2 Treatment 88700 and Distribution 98731 exp.29-Feb- and 31-Mar-2024
- **P. Emon** (Manager of Systems Operations and Overall Responsible Operator [ORO]) Class 4 Treatment 10961 and Distribution 18484 exp. 31-Oct/Dec-2024 respectively
- **E. Fargo** Class 3 Treatment 104037 exp. 31-Jul-2024
- **P. Frigault** Class 4 Treatment 13934 exp. 31-Mar-2023
- **D. Harris** Class 2 Distribution 15482 exp.31-May-2025

DWQMS Reference:	11 Personnel Coverage
Client Reference:	Sydenham DWS OP W-OP-03 Section 11 (V8.0, 5-Nov-2021), W-G-05 Personnel Coverage (rev.18-Mar-2020)

Details: *(personnel interviewed, procedures, activities and records observed)*

Utilities Kingston has implemented and appears to conform to OP Section 11 and W-G-05 to ensure sufficient personnel meeting identified competencies are available for duties that directly affect drinking water quality. Refer to Element 20 for Operator callouts which are documented in the logbook and if work completed, identified in the SharePoint Maintenance portal. The Systems Operations Manager reported an average of 30-40 callouts / year.

DWQMS Reference:	12 Communications
Client Reference:	Sydenham DWS OP W-OP-03 Section 12 (V8.0, 5-Nov-2021), W-G-06 QMS Communications (rev.28-Jan-2019)

Details: *(personnel interviewed, procedures, activities and records observed)*

Utilities Kingston has implemented and conforms to OP Section 12 and referenced W-G-06, where OA Top Management communicates with:

- the **Owner** regarding drinking water system issues and the QMS through reports to the CAO and Council (refer to Element 20) on the QMS Policy through OP review and endorsement, and audit and Management Review results.
- **OA personnel** as per Element 10 and annual review sign off as per the Systems Operations Manager, staff meetings and uNet / SharePoint, etc.
- **Suppliers** as per Element 13.
- **Public** through the Utilities Kingston web site as per Element 1.

DWQMS Reference:	13 Essential Supplies and Services
Client Reference:	Sydenham DWS OP W-OP-03 Section 13 (V8.0, 5-Nov-2021), W-L-06 Essential Supplies and Services List (26-April-2022)

Details: *(personnel interviewed, procedures, activities and records observed)*

Utilities Kingston has implemented and conforms to OP Section 13 and W-L-06 where providers of

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essential supplies and services have been identified. 205L treatment chemical drums observed at the Sydenham WTP (e.g., ammonium sulphate, Kemira PAX-X, sodium hypochlorite) were NSF/60 identified and Caduceon CALA accreditation available for laboratory testing services (exp.22-Nov-2022).

DWQMS Reference:	14 Review and Provision of Infrastructure
Client Reference:	Sydenham DWS OP W-OP-03 Section 14 (V8.0, 5-Nov-2021), W-G-07S Sydenham DWS Review and Provision of Infrastructure (rev.9-Mar-2019)

Details: *(personnel interviewed, procedures, activities and records observed)*

Utilities Kingston has implemented and conforms to OP Section 14 and W-G-07S and communicates the findings of the review to the Owner as per Element 20. Previously annual, now quarterly review of maintenance programs (e.g., 2/4, 5/6, 7/15, 9/2 and 11/16/2021 as per SharePoint; 8-Feb-2022 set agenda and minutes reviewed discussed cathodic protection and 3rd party dive crew to address issue to replace breaks) is incorporated into the annual Director communication of capital needs (presentation 14-Dec-2021 to Committee of the Whole) which is currently being compiled for 2024 and 2025 (previous 2019-2024 capital budget dated 26-Jan-2018 was approved in 2018 and observed with a 2019-2029 forecast). As per the Systems Operations Manager, distribution monitoring hydrant for dead ends is in this year's budget as a result of the risk assessment outcomes and funds available; similarly, a repeated water main break has resulted in replacement scheduling to reduce risk.

DWQMS Reference:	15 Infrastructure Maintenance, Rehabilitation and Renewal
Client Reference:	Sydenham DWS OP W-OP-03 Section 15 (V8.0, 5-Nov-2021), W-G-08 Infrastructure Maintenance, Rehabilitation and Renewal (rev.20-May-2020)

Details: *(personnel interviewed, procedures, activities and records observed)*

Utilities Kingston:

- keeps the summary of the infrastructure maintenance, rehabilitation, and renewal programs current through SharePoint for recurring (work orders are generated) and unscheduled maintenance for the 1.5 years (currently entering assets, activities and their frequencies which is to be *complete by the end of 2022) which was reviewed with the Manager of Systems Operations:
  - ***Generator** (observed during the WTP tour) maintenance takes place every 6 months and completed by Tandet (on Essential Supplies and Services List) who provide invoices detailing work completed ***(refer to Element 5 OFI)***; Standby Engine and Genset Run Sheet 2022 was observed completed at WTP dated 5/23-Jan, 7/17/24-Feb, 11-Mar, 29-Apr, 5/29(latter outage)-May as well as 1-Oct-, 2/18-Nov- and 14-Dec-2021 (hardcopy records date back to 2007)
  - Monthly **UV** reference check based on hours was completed 13-May and due 13-Nov
  - Collector app / ipad is used for **flushing** with raw data observed for hydrant inspections and valve inspection, and maintenance 2-Oct-2020 through 2021 (dashboard identifies % completion but could not be accessed during the audit with an IT ticket submitted)
  - ***HLP** internal annual preventive maintenance is documented in the logbook
  - An external ***Tower inspection** is completed every 5 years, lastly ROV through the capital process 13-Dec-2015 which led to an unforeseen budget item with funds available and another offline inspection in 2019 (records in K: drive)
- ensures that the long-term forecast is reviewed at least once every Calendar Year,

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communicates the programs to the Owner, and monitors the effectiveness of the maintenance program quarterly as per Element 14 directly above.

DWQMS Reference:	16 Sampling, Testing and Monitoring
Client Reference:	Sydenham DWS OP W-OP-03 Section 16 (V8.0, 5-Nov-2021), W-G-09 Sampling, Testing and Monitoring (rev.26-Oct-2020), W-E-02 Adverse Water Quality Notifications (rev.1-May-2020), W-L-09 Bacteriological (rev.15-Oct-2020) and W-L-10 Chemical Sampling Schedules (rev.16-Oct-2020)

Details: *(personnel interviewed, procedures, activities and records observed)*

Utilities Kingston has implemented and conforms to OP Section 16 and W-G-09, the latter confirmed via:

- continuous monitoring observed at the WTP (e.g., **Daily Records Sheet** [rev.18-Aug-2021] for Jan-June 6-12 [WTP visits 7 and 9-12 June meeting a minimum of 2/week with SCADA monitoring from King St. location] capturing general, raw, UV, compressor, flows and analyser verification data; **Daily Report** 18-Jun-2020; May and June 2022 **Chemistry** related to Cl, monochloramine, Ammonia, Aluminum, turbidity, UV, raw and treated; Lab Bench Sheet [rev.18-Aug-2021] for February through April with January in different binder)
- in house, microbiological (latter as per W-L-09, 18-May-2022 Caduceon results observed for raw and treated water and elevated tank; Bacteriological / Chemical and Daily Reports were observed in binders at the WTP dating back to 2018) and lead sampling and testing (W-L-10) entered into WaterTrax and located in a shared location at '5 Sydenham' by year which is then summarised by the Quality Assurance Operator within the Annual and Summary Reports (2021 combined), reviewed by the Systems Operations Supervisor, and made available at https://www.southfrontenac.net/en/living-here/billing-information.aspx?_mid_=102631.

DWQMS Reference:	17 Measurement and Recording Equipment Calibration and Maintenance
Client Reference:	Sydenham DWS OP W-OP-03 Section 17 (V8.0, 5-Nov-2021), W-G-10 Measurement and Recording Equipment Calibration and Maintenance (rev.24-Jun-2019)

Details: *(personnel interviewed, procedures, activities and records observed)*

Kingston Utilities has implemented and conforms to OP Section 17 through W-G-10. Critical calibration was observed to be conducted by a third party as per the Essential Supplies and Services List W-L-06:

- **ClearTech *(refer to Element 13 OFI)*** certificates were observed exp.4-Apr-2024 supporting equipment stickers observed at WTP (e.g., handheld colorimeter DR300 in lab and 3 Cl analysers) with reports located in 'K:\Sydenham\Calibration Reports' by year and backed up to server at Kingston Wig Municipal building
- **Franklin Empire** stickers on equipment due 10/22 for FIT-2019 raw water flowmeter

Refer to Element 16 directly above for verification activities.

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DWQMS Reference:	18 Emergency Management
Client Reference:	Sydenham DWS OP W-OP-03 Section 18 (V8.0, 5-Nov-2021), W-E-01 Emergency Response and Recovery, W-E-03 Boil Water Advisory Notification, and W-E-02 Adverse Water Quality Notification (all rev.1-May-2020), W-E-04 Drinking Water Contamination Investigation and Response (rev.26-Sep-2019), W-E-05 Spill Response (rev.24-Nov-2015), W-E-06 Emergency Water Conservation and Supply (rev.8-Dec-2021), 2021 Emergency Training and Testing Details, W-CC-07, -08, -09 (rev.26-Nov-2014), -10 (rev.5-Jan-2018) CCL Responses, Internal W-L-07 and External W-L-08 Contact List

Details: *(personnel interviewed, procedures, activities and records observed)*

Utilities Kinston has implemented and conforms to OP Section 18 through W-E-01. Annual emergency preparedness training was confirmed to be provided by the Systems Operations Manager an in-class exercise ***(refer to OFI)*** was last carried out **13-Dec-2021** to review the requirements needed to ensure continuous operation of the WTP pertaining to Westbrook 300mm CI transmission watermain break; the review involved different training groups (e.g., 2-4 sessions 15/17-Dec) which needed to identify regulations and response measures required to respond to this emergency event, including internal and external communications. Dec-2020 testing involved management and had no resulting actions. Testing also took place in 2019. All emergency testing records are in SharePoint. Weekly backup systems are also tested from a maintenance perspective as per the Systems Operations Manager.

DWQMS Reference:	19 Internal Audits
Client Reference:	Sydenham DWS OP W-OP-03 Section 19 (V8.0, 5-Nov-2021), W-G-11 Internal Audit (rev.29-May-2020), W-G-13 Preventative and Corrective Action (rev.26-Feb-2019)

Details: *(personnel interviewed, procedures, activities and records observed)*

Utilities Kingston has implemented and conforms to W-G-11 and ensures that internal Audits are conducted at least once every Calendar Year, lastly 8-11-Nov-2021 conducted by a Team of Operators and Supervisors and done remotely resulting in a minor nonconformance relating to Element 12 and whose resolution was reviewed in SharePoint ***(refer to Element 21 OFI)***. SharePoint 'Element Lists' shows results associated with respective Element year after year as of 2019. Previous hardcopy internal audits are located at the downstairs 300 King St. location dating back to 2012 / 2013 when Utilities Kingston took over as OA. External audits are available electronically dating back to 2012 in SharePoint.

DWQMS Reference:	20 Management Review
Client Reference:	Sydenham DWS OP W-OP-03 Section 20 (V8.0, 5-Nov-2021), W-G-12 Management Review (rev.1-May-2019), 2020 Management Review Summary Report, 23-Jul-2021 PowerPoint and Minutes

Details: *(personnel interviewed, procedures, activities and records observed)*

Utilities Kingston Top Management has implemented and conforms W-G-12 by:

a) ensuring a Management Review is conducted at least once every Calendar Year, lastly 23-Jul-2021, which included Top Management as identified in Element 3 above as well as Supervisors of Water & Wastewater Systems Operations and QMS Representative and alternate who discussed:

No a) incidents of regulatory non-compliance in relation to MECP Inspections and **b) incidents of adverse drinking water tests**

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c) deviations from CCLs and response actions included 1 in 2021 as per 2021 Summary Report, 4 in 2020, 3 in 2019 and 10 in 2018 (resulting in autoflusher implementation and leading to reduced CCL deviation instances)

d) the effectiveness of the risk assessment process pertains to the 2020 review with no changes identified and minutes in SharePoint with read access.

e) internal and third-party Audit results involved trending over 3 years with 1 external N/C in 2019 (chlorine packet expired) as well as in 2020 and 2021 internal audits with mostly OFIs.

f) results of emergency response testing

g) operational performance focusing on inspection and DWS ratings pertaining to adverse at 100% since 2019 with 2021 not yet available

h) raw water supply and drinking water quality trends addresses microcystin and associated testing

i) follow-up on previous and **j) the status of management action items identified between reviews** pertain to non-revenue water

k) changes that could affect the QMS involves WTP condition assessment and the revised drinking water license

l) Consumer feedback identified 0 complaints over 3 years

no additional m) resources needed to maintain the QMS

n) the results of the infrastructure review compared maintenance (Operations) to Capital (Engineering focus)

o) OP currency, content, and updates involved moving documents out of the OP to streamline process when making changes to risk assessment and organisation

p) staff suggestions are ongoing, including changes to documents which is managed through the feedback list with automated emails to advise of changes

b) considering the results and identifying deficiencies and actions items to address as per item a) above,

c) providing a record of any decisions and action items including the personnel responsible and the proposed timelines for their implementation through SharePoint (used since 2013-2015 and adding more capability annually to rely less on paper) with previous records dating back to 2011 at 'city.kingston.on.ca/ns/UK/water/water_QMS_Master/09_Management Review/Sydenham/2021-2020 Reporting Year'

d) reporting the results, the identified deficiencies, decisions and action items to the Owner, lastly 14-Dec-2021 (minutes forwarded via email to Director from QMS Representative 17-Nov) through Committee of the Whole (Minutes Item 7a).

DWQMS Reference:	21 Continual Improvement
Client Reference:	Sydenham DWS OP W-OP-03 Section 21 (V8.0, 5-Nov-2021), W-G-13 Preventative and Corrective Action (rev.26-Feb-2019),

Details: *(personnel interviewed, procedures, activities and records observed)*

Utilities Kingston continually improves the QMS effectiveness by implementing and conforming to W-G-13. Nonconformities are managed through SharePoint ***(refer to OFI)*** as well as Best Management Practices whose list was reviewed including 17-May-2022 internally-generated entry relating to planned work assessment and contingency plan which has not yet been implemented; preventive actions are similarly managed (e.g., 25-Aug-2021 CT instrument verification 210825-210825-17).

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Details regarding the personnel interviewed and objective evidence reviewed are maintained on file at SAI Global.

This report was prepared by:

Sandra Tavares, *B.Sc., M.Sc., EP(EMSLA), EP-Sustainability*
SAI Global Management Systems Auditor

The audit report is distributed as follows:

- SAI Global
- Operating Authority
- Owner
- MECP

Notes

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Utilities Kingston

SOUTH FRONTENAC

DRINKING WATER QUALITY MANAGEMENT SYSTEM POLICIES

DOCUMENT:	DOCUMENT NO:
QUALITY MANAGEMENT SYSTEM POLICY FOR THE SYDENHAM DRINKING WATER SYSTEM	**W-P-04**

Utilities Kingston is a community based corporation dedicated to the responsible management of safe and reliable integrated services. Our mission is to manage, operate and maintain community infrastructure to deliver safe, reliable services and a personal customer experience, guided by our values of safety, integrity, innovation and reliability. Our vision is to advance the unique multi-utility model to benefit our customers and build better communities.

Utilities Kingston, acting as the Operating Authority for the Sydenham Drinking Water System, owned by the Township of South Frontenac, is committed to providing a safe and reliable supply of drinking water to our customers.

Through the development, implementation, maintenance, and continual improvement of a Quality Management System, the management and staff of Utilities Kingston will ensure the continued safety and security of the drinking water supply by meeting or exceeding the requirements of all relevant legislation and regulations, and the Drinking Water Quality Management Standard.

APPROVAL

David Fell

DAVID FELL, PRESIDENT AND CEO, UTILITIES KINGSTON

May 24, 2022

DATE

Document:	Document No:
Owner and Top Management Endorsement of The Operational Plan for the Sydenham Drinking Water System	**W-P-05**

The Township of South Frontenac, the Owner, and Utilities Kingston, the Operating Authority, support the implementation, maintenance, and continual improvement of a Quality Management System for the Sydenham Drinking Water System as documented in the Sydenham Drinking Water System Operational Plan.

This endorsement of the Operational Plan by the Owner's representatives and by the Operating Authority's top management acknowledges their commitment to fulfill the responsibilities, duties, and authorities as defined in the Operational Plan, the Drinking Water Quality Management Standard, and the Safe Drinking Water Act.

Endorsement

Ron Vandewal Mayor, Township of South Frontenac	Date
Louise Fragnito Chief Administrative Officer, Township of South Frontenac	Date
Kyle Bolton Director of Public Services, Township of South Frontenac	Date
Troy Dunlop Manager of Engineering and Capital Projects	Date
David Fell President and CEO, Utilities Kingston	Date
Heather Roberts Director of Water & Wastewater Services, Utilities Kingston	Date
Vacant Director of Utilities Engineering, Utilities Kingston	Date
Julie Runions Manager of Water & Wastewater Treatment, Utilities Kingston	Date
Chris Leeman Manager of Water & Wastewater System Operations, Utilities Kingston	Date

Document:	Document No:
Operational Plan for the Sydenham Drinking Water System	W-OP-03

Operational Plan

for the

SOUTH FRONTENAC

Prepared by Utilities Kingston

(1425445 Ontario Limited)

for

The Township of South Frontenac

Approval

Heather Roberts, Director, Water/Wastewater **Date:**

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Definitions

Accredited Operating Authority – a person or entity that is given responsibility by the owner for the management, operation, maintenance, or alteration of a drinking water system and has been accredited after demonstrating conformance to the requirements of the Drinking Water Quality Management Standard to the satisfaction of the accreditation body authorized by the Ministry of Environment.

Action Item - a deficiency of the QMS identified through management review which requires corrective action.

Annually - A period of one year beginning and ending with the dates conventionally accepted as marking the beginning and end of a year (January 1st to December 31st).

Audit – a systematic and documented verification process that involves objectively obtaining and evaluating documents and processes to determine whether a quality management system conforms to the requirements of the Drinking Water Quality Management Standard.

Authority – official permission or approval to carry out tasks and make decisions regarding the drinking water system.

Calendar Year - A period of one year beginning and ending with the dates conventionally accepted as marking the beginning and end of a year (January 1st to December 31st).

Competence – the combination of observable and measurable knowledge, skills and abilities which are required for a person to carry out assigned duties.

Compliance – the fulfillment of a regulatory requirement.

Conformance – the fulfillment of a Drinking Water Quality Management Standard requirement

Customer – the drinking water end user.

Control Measure – includes any processes, physical steps, or other contingencies that have been put in place to prevent or reduce a hazard.

Control Point (CP) – a step in the drinking water system process where primary control is applied to prevent or reduce the likely occurrence of a hazardous event with associated drinking water health hazards.

Corrective Action – 1) action to eliminate the cause of a detected non-conformity with the Drinking Water Quality Management Standard, Quality Management System, or other undesirable situations 2) action taken in response to reported adverse water quality identified under Schedule 16 of Ontario Regulation 170/03 to immediately restore proper drinking water disinfection or treatment including any actions taken as directed by the Medical Officer of Health.

Critical Control Limit (CCL) – the point at which a critical control point response procedure is initiated.

Critical Control Point (CCP) – an essential step in the drinking water system process where primary control measures can be applied, and the results measured to ensure the safety of drinking water delivered to the customer by preventing or eliminating a drinking water health hazard or reducing the hazard to an acceptable level.

Document – information recorded or stored by means of any device which is revised to remain current. For the Drinking Water Quality Management System, they include policies, operational plans, procedures, GIS/network drawings, legislation, regulations, and standards, but not records. (See Records).

Drinking Water Emergency – a situation or service interruption that may result in the loss of the ability to maintain a supply of safe drinking water to consumers.

Drinking Water System – the system of connected works, excluding plumbing, which is established for the purpose of providing users of the system with drinking water.

Duty – an authorized task or decision regarding the drinking water system that is required to fulfill responsibilities identified in the Operational Plan and associated procedures.

DWQMS – Drinking Water Quality Management Standard.

Emergency – a situation which requires immediate action to protect and preserve the health, safety and welfare of persons and to limit or prevent damage and destruction of property, infrastructure and the environment.

Emergency Response – the effort to mitigate the impact of an emergency on customers.

Hazard – a source of danger or a property that may cause drinking water to be unsafe for human consumption. The hazard may be biological, chemical, physical, or radiological in nature.

Hazardous Event – an incident or situation that can lead to the presence of a hazard.

Infrastructure – the set of interconnected structural elements that provide the framework for supporting the operation of the drinking water system, including buildings, workspace, process equipment, hardware and software, and supporting services, such as transportation or communication.

Major Drinking Water Emergency – an emergency which is adversely affecting or will adversely affect the supply of safe drinking water to a significant portion of the system or to critical facilities such as hospitals, nursing homes and medical clinics.

Minimum Critical Control Point (Minimum CCP) – an essential step in the drinking water system process where control measures must be applied to meet minimum treatment requirements for primary and secondary disinfection as outlined in the Procedure for Disinfection of Water in Ontario.

MECP – Ministry of Environment, Conservation and Parks.

Monitoring – checks or systems that are available to detect hazards or the potential for hazards

Non-compliance – the failure to fulfill a regulatory requirement.

Non-conformance – the failure to fulfill a Drinking Water Quality Management Standard or quality management system requirement**.**

Operating Authority – Utilities Kingston, as authorized by the owner to undertake the management, operation, maintenance or alteration of the drinking water system.

Owner – The Township of South Frontenac.

Potential Major Drinking Water Emergency – an emergency with the potential to adversely affect the supply of safe drinking water to a significant portion of the system or to critical facilities such as hospitals, nursing homes and medical clinics.

Preventative Action – Action to prevent the occurrence of nonconformity of the QMS with the requirements of the DWQMS or another undesirable situation).

Quality Management System (QMS) – a system to establish policy and objectives, achieve those objectives, and direct and control an organization with regard to quality.

Record – information recorded or stored by means of any device which provides proof of activities performed and results achieved. For the Drinking Water Quality Management System, they include log books, laboratory test results, water quality data, system performance data, completed operation and maintenance forms, photographs, audio/video recordings, and “As Built”/record drawings.

Responsibility – an overarching requirement, identified in the Operational Plan, for which persons having duties and authorities impacting the safe and reliable supply of drinking water to the customer are held accountable.

Role – a management or staff position within Utilities Kingston for which responsibilities, duties, and authorities have been identified.

The Standard – the Drinking Water Quality Management Standard.

Document: Operational Plan for the Sydenham Drinking Water System	Document No: W-OP-03

1. Introduction to the Quality Management System

This document is the Drinking Water Quality Management System Operational Plan for the Sydenham Drinking Water System. It has been developed in response to legislated requirements resulting from recommendations contained within the Report of the Walkerton Inquiry.

In Part Two, Report of the Walkerton Inquiry, Justice Dennis R. O'Conner recommended that municipal water providers adopt a "quality management" approach for the operation of drinking water systems in Ontario. Also recommended by Justice O'Conner was the development of a quality management standard specific to drinking water systems and the accreditation of operating agencies based on the implementation of quality management systems conforming to that standard. These recommendations have been mandated through the Safe Drinking Water Act.

The Safe Drinking Water Act requires the owner of a municipal residential drinking water system to ensure that the system is operated by an Accredited Operating Authority. To become accredited, an Operating Authority must establish and maintain a Quality Management System, documented in an Operational Plan, which meets the requirements of the Drinking Water Quality Management Standard for Ontario.

The Ministry of Environment, with assistance from water industry stakeholders, has developed the Drinking Water Quality Management Standard specifically to meet the needs of municipal residential drinking water systems in Ontario. The Drinking Water Quality Management Standard contains elements of both the International Organization for Standardization's ISO 9001 quality management system standard and the Hazard Analysis and Critical Control Point (HACCP) standard.

The Standard specifies minimum requirements to facilitate an Operating Authority's ability to consistently produce and deliver drinking water that meets legislative, regulatory and owner requirements, and to enhance consumer protection through the effective application and continual improvement of a Quality Management System.

The process to develop, implement and maintain the Quality Management System required by the Drinking Water Quality Management Standard is divided into three steps; PLAN/DO, CHECK, and IMPROVE. These steps are cyclic which enables the continuous evolution and improvement of the Quality Management System.

The Drinking Water Quality Management Standard is comprised of

twenty-one elements; eighteen PLAN/DO elements, two CHECK elements, and one IMPROVE element. PLAN/DO elements deal with the development and implementation of an Operational Plan; CHECK elements deal with reviewing the effectiveness of the Quality Management System through internal audits and management reviews; and the IMPROVE element requires an Operating Authority to strive to continually improve its Quality Management System through the use of corrective and preventative actions in addition to the review and consideration to applicable best management practices published by the Ministry of the Environment, Conservation and Parks.. Each of the numbered sections in this document corresponds to a required element in the Standard.

As the Operating Authority for the Sydenham Drinking Water System, owned by the Township of South Frontenac, Utilities Kingston has developed this Operational Plan to meet the requirements of the Drinking Water Quality Management Standard and to ensure the continued safe and reliable supply of drinking water to the community through the efficient and effective use of resources.

2. Quality Management System Policy

The Quality Management System Policy for the Sydenham Drinking Water System – W-P-04 has been reviewed and approved by Top Management.

Quality Management System Policy for the Sydenham Drinking Water System

Utilities Kingston is a community based corporation dedicated to the responsible management of safe and reliable integrated services. Our mission is to manage, operate and maintain community infrastructure to deliver safe, reliable services and a personal customer experience, guided by our values of safety, integrity, innovation and reliability. Our vision is to advance the unique multi-utility model to benefit our customers and build better communities.

Utilities Kingston, acting as the Operating Authority for the Sydenham Drinking Water System, owned by the Township of South Frontenac, is committed to providing a safe and reliable supply of drinking water to our customers.

Through the development, implementation, maintenance, and continual improvement of a Quality Management System, the management and staff of Utilities Kingston will ensure the continued safety and security of the drinking water supply by meeting or exceeding the requirements of all relevant legislation and regulations, and the Drinking Water Quality Management Standard.

3. Commitment and Endorsement

This Operational Plan has been endorsed by Utilities Kingston Top Management and the Township of South Frontenac. The Owner and Top Management Endorsement of the Operational Plan for the Sydenham Drinking Water System – W-P-05 has been signed by the Township of South Frontenac's representatives and Utilities Kingston Top Management.

Owner and Top Management Endorsement of Operational Plan for the Sydenham Drinking Water System

The Township of South Frontenac, the Owner, and Utilities Kingston, the Operating Authority, support the implementation, maintenance, and continual improvement of a Quality Management System for the Sydenham Drinking Water System as documented in the Sydenham Drinking Water System Operational Plan.

This endorsement of the Operational Plan by the Owner's representatives and by the Operating Authority's top management acknowledges their commitment to fulfill the responsibilities, duties, and authorities as defined in the Operational Plan, the Drinking Water Quality Management Standard, and the Safe Drinking Water Act.

4. Quality Management System Representatives

A Quality Management System Representative(s) and an alternate are appointed and authorized by Top Management to administer the Drinking Water Quality Management System. The responsibilities of the QMS Representatives are:

- ensuring that processes and procedures for the Drinking Water QMS are established and maintained,
- reporting to Top Management on the performance of the Drinking Water QMS and any need for improvement,
- promoting awareness of the Drinking Water QMS throughout the Operating Authority
- ensuring that current versions of documents required by the Drinking Water QMS are being used at all times,

- at least annually, reviewing the Drinking Water QMS policies to ensure that they remain current and appropriate for the QMS and the subject system, and recommending any required changes to the QMS policies to Top Management for approval,
- ensuring that the Operational Plans and associated procedures are reviewed at least annually to verify that they remain consistent with current legislation, regulations, and operational conditions and processes,
- ensuring that new and revised QMS controlled documents are reviewed by personnel most familiar with the affected processes prior to recommending approval,
- review and recommend approval of revisions to the Operational Plan and associated procedures to the Director of Engineering, Human Resources and Treatment Operations, and the Director, Operations,
- ensuring that annual internal audits are completed as described in this operational plan,
- preparing an annual report which includes all information required for annual Management Reviews of the Drinking Water QMS
- external audit liaison

The Alternate QMS Representative provides assistance to meet these responsibilities and performs all duties of the QMS Representatives should the QMS Representatives be unavailable.

The designated QMS Representative(s) and Alternate QMS Representative have acknowledged their responsibilities, duties, and authorities as described in this Operational Plan by signing the Quality Management System Representative for the Sydenham Drinking Water System Acknowledgement of Responsibilities – W-P-06.

5. Document and Records Control

5.1 Documents

Documents provide the foundation for the development and ongoing maintenance of the quality management system. They include QMS policies, operational plans, procedures, GIS/network drawings, legislation, regulations, standards, and records. Documents other than records must be revised to reflect current legislation, regulations, and operational conditions and processes. Consistent control ensures that documents remain current and accurate, and are available and accessible for use when and where required.

The Document Control Procedure – W-G-01 describes the methods used to control the creation, approval, distribution, and revision of internal and external documents related to the Drinking Water QMS.

5.2 Records

Records are documents which provide proof of activities performed and results achieved. Unlike other documents which must be revised to reflect current conditions, records provide historical evidence and must not be changed. They include log books, laboratory test results, water quality data, system performance data, completed operation and maintenance forms, photographs, audio/video recordings, and “As Built”/record drawings.

The Records Control Procedure – W-G-02 describes the methods used to ensure that records are sufficiently maintained to demonstrate compliance with legislative, regulatory, and Drinking Water Quality Management Standard requirements, Drinking Water QMS requirements and to provide historical information that is accessible for operational and planning purposes.

6. Drinking Water System Description

6.1 General

The Sydenham Drinking Water System, owned by the Township of South Frontenac and operated by Utilities Kingston, provides safe drinking water to the Village of Sydenham. The system is comprised of a Class 2 water treatment plant supplying water to a Class 1 distribution system which includes one elevated storage tank.

6.2 Source Water Overview

The source of water treated by this water treatment facility is Sydenham Lake. The intake is located 128m east of the treatment plant, at approximately 6m of water depth.

The tributary water sources to Sydenham Lake are granite based to the north and limestone based to the south, resulting in a unique raw water chemistry for treatment.

The raw water drawn from this location is slightly elevated in dissolved solids, organic carbon and alkalinity. The water is slightly basic and marginally hard with an average hardness of 134 mg/l as CaCo3. Seasonal changes and wind direction can greatly affect raw water turbidities which can range from 0.3 to 10 NTU.

Seasonal raw water temperature fluctuations are significant. Raw water temperatures at the Sydenham Water Treatment Plant have ranged from as low as 1 degree Celsius in the winter months to as high as 22 degrees Celsius in the summer months.

Chemical, physical and bacteriological raw water quality data indicates a raw water source of good quality.

6.2.1 Events

Seasonal changes in raw water quality during the spring thaw can cause an increase in organic loading within Sydenham Lake. This event typically referred to as the spring runoff, can last a few days or even weeks depending on weather and temperature.

Summer and fall water quality can also fluctuate due to algae growth, wind direction and strength, and recreational traffic resulting in elevated water turbidities. Operators must be prepared to make appropriate process adjustments to treat the elevated turbidities during these events.

Changes in water temperature will also impact treatment process performance (coagulation and disinfection). Optimal treatment requires timely adjustments to treatment chemical dosages in response to temperature fluctuations.

6.2.2 Threats

Sydenham Lake is subject to seasonal recreation traffic and indirect discharges from agricultural runoff which are potential sources of contamination. While the risk of source water contamination is ever present the immediate risk of contamination of the drinking water system as a result is considered to be minimal due to the following factors:

- Ongoing monitoring of raw water quality
- Continuously monitored water treatment processes

The potential for toxin producing cyanobacteria algae blooms is present in lakes with high phosphorus and nitrogen levels and warming water temperatures that can increase their frequency and size. As a result, a Harmful Algal Bloom monitoring, reporting, and sampling plan has been implemented.

6.2.3 Intake Protection Zones

The Cataraqui Source Protection Plan has identified Intake Protection Zones for the Sydenham Water Treatment Plant. An intake protection zone (IPZ) shows where surface water is coming from to supply a municipal intake at a water treatment plant and how fast it is travelling toward the intake. The size and shape of each zone represents either a set distance around the intake, or the length of time water that could be carrying a contaminant would take to reach the intake over land or water: IPZ 1 is a set area, generally a one-kilometre radius around the intake; IPZ 2 is defined by the movement of water and is sized to encompass a two-hour time of travel for a contaminant to reach the intake; IPZ 3 is an area of special interest. For the Sydenham intake, IPZ 3 is defined based on the lakes and streams that contribute water to the intake. The Intake Protection Zones are shown in Figure 1 – Intake Protection Zones.

6.2.4 Operational Challenges

Raw water drawn from Sydenham Lake is generally low in bacteriological contamination and turbidity. During seasonal turbidity and temperature fluctuations as well as during spring runoff, operational changes are required to maintain optimal coagulant dosages to ensure adequate turbidity removal while also maintaining filter performance and minimizing aluminum residual carryover.

Operational challenges during seasonal events may require deviations from normal operations. With these seasonal events, the operator may be required to increase the frequency and/or duration of filter backwashes to reduce filter clogging.

6.3 Multiple Barrier Approach

A multiple barrier approach to preventing drinking water contamination is employed by Utilities Kingston to ensure that drinking water supplied by the system is both safe and of high quality. Barriers employed within the supply system include source water treatment by chemically assisted filtration, primary disinfection through UV light application and chlorination, secondary disinfection through chlorination, continuous monitoring and automated control of treatment processes and distribution system facilities, and the utilization of system redundancies and standby equipment.

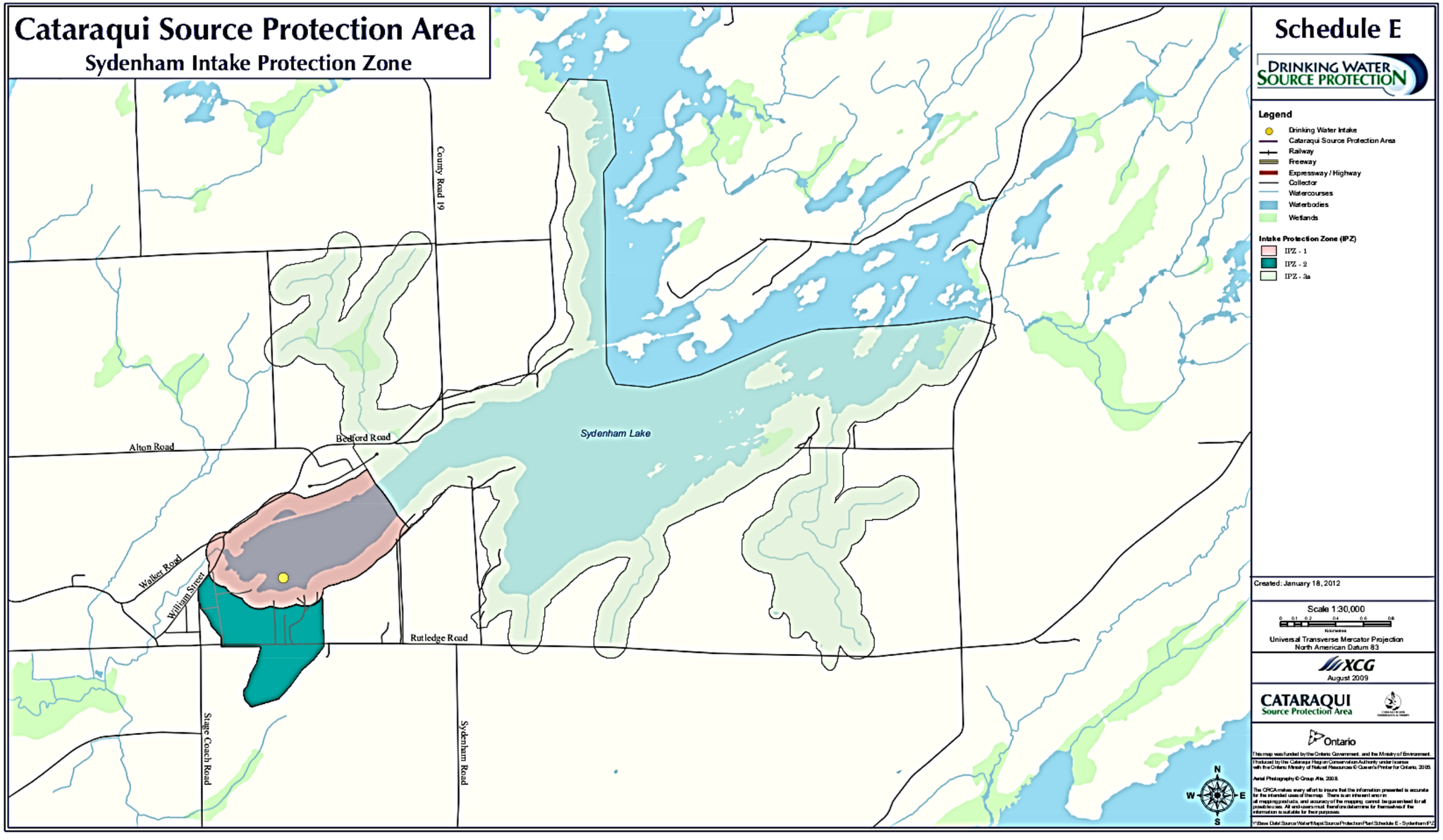
6.4 Critical Upstream and Downstream Processes

Utilities Kingston does not currently rely upon any critical processes upstream or downstream of the Sydenham Drinking Water System to ensure the provision of safe drinking water.

6.5 Connections to Other Drinking Water Systems

The Sydenham Drinking Water System is not connected to any other drinking water system.

6.5.1 Figure 1 – Intake Protection Zones



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6.6 Water Treatment Facility

6.6.1 Sydenham Water Treatment Plant

Drinking water is supplied to the distribution system by the Sydenham Water Treatment Plant which is a Class 2 water treatment facility with a rated capacity of 1,290m3/day. The water treatment plant is located at 4410 Point Road. Figure 2 – Sydenham Water Treatment Plant Process Flow Diagram provides a graphic representation of the water treatment process.

6.6.1.1 Raw Water Source

The source of water treated by this water treatment facility is Sydenham Lake. The intake is located 128m east of the treatment plant, at approximately 6m of water depth. Water flows by gravity from the lake through a 400mm intake pipe to the low lift pumping well.

6.6.1.2 Zebra Mussel Control

Chloraminated (treated) water is conveyed through a 25mm polyethylene tube installed inside the intake pipe and injected through a diffuser at the raw water intake for zebra mussel control.

6.6.1.3 Screening

Two stationary screens located in the low lift pumping well remove objects such as weeds, fish, sticks, and other debris from the water.

6.6.1.4 Low Lift Pumping

Three submersible low lift pumps (two duty pumps and one standby pump) lift water from the low lift pumping well to the process building through the low lift discharge header. The flow rate of raw water pumped through the low lift discharge header is continuously monitored

6.6.1.5 Pre-Chlorination

While not typically practiced, a Sodium Hypochlorite application point in the low lift discharge header allows for pre-filtration disinfection.

6.6.1.6 Coagulation / Flocculation

A liquid coagulant, Polyaluminum Chloride (PACl), is added to the raw water in the low lift discharge header as it enters the process building just prior to passing through the in-line static mixer. PACl promotes flocculation (the clumping together of very fine particles and their subsequent grouping to form larger particles). The formation of these ‘floc’ masses improves the plant’s filtration process. Water flows through the static mixer in a spiral motion ensuring proper mixing of the PACl with the water for effective flocculation.

6.6.1.7 Filtration

Water flows from the static mixer to three pressure filtration tanks containing a ceramic filtration media. The filters remove particulate impurities from the water. Water flows through the filters into two baffled contact tanks.

Filters are backwashed at a minimum of every 48 hours to remove the particulates they have collected. Clean water from the clear well (high lift pump chamber) is pumped backwards through the filters, and the filters are agitated by air scouring the filter media to break up any large particles.

6.6.1.8 GAC Contactors

During periods of high dissolved organic content in the source water, filter effluent water is directed to two pressure filtration tanks containing granular activated carbon (GAC). The GAC contactors assist

in the removal of dissolved organics which react with chlorine to produce chlorination byproducts. The GAC contactors are periodically backwashed to remove the particulates they have collected.

6.6.1.9 Process Waste Management

Effluent water from the backwash process is directed to a backwash storage tank for further settling. The supernatant (the clear water at the top of the tank after settling) is directed back to Sydenham Lake and the settled sludge is mechanically removed and sent for further treatment.

6.6.1.10 Primary Disinfection

Primary disinfection of the filtered water is achieved via UV light and free chlorine residual. 2 UV reactors (duty/standby) each using 12 low pressure high output lamps, provide the UV light disinfection. Free chlorine disinfection follows the UV process with the use of two chemical metering pumps (duty/standby) which provide sodium hypochlorite to an application point downstream of the UV reactors at the entrance to the detention piping. Diversion to waste valves, located upstream of the treated water reservoirs, operate automatically to divert water to the process waste tanks at process start up and whenever residual or log removal targets are not met.

6.6.1.11 Secondary Disinfection

Secondary disinfection is the maintenance of a disinfectant residual throughout the distribution system which is achieved with chloramines. Following the free chlorine disinfection process, ammonium sulphate is added with the use of two chemical metering pumps (duty/standby), at an approximate rate of 4:1 ratio (chlorine/ammonia), to react with the free chlorine residual to form chloramines. The application dosages of sodium hypochlorite and ammonium sulphate is adjusted to produce a sufficient in plant combined chlorine residual to ensure that minimum residuals are maintained in the distribution system.

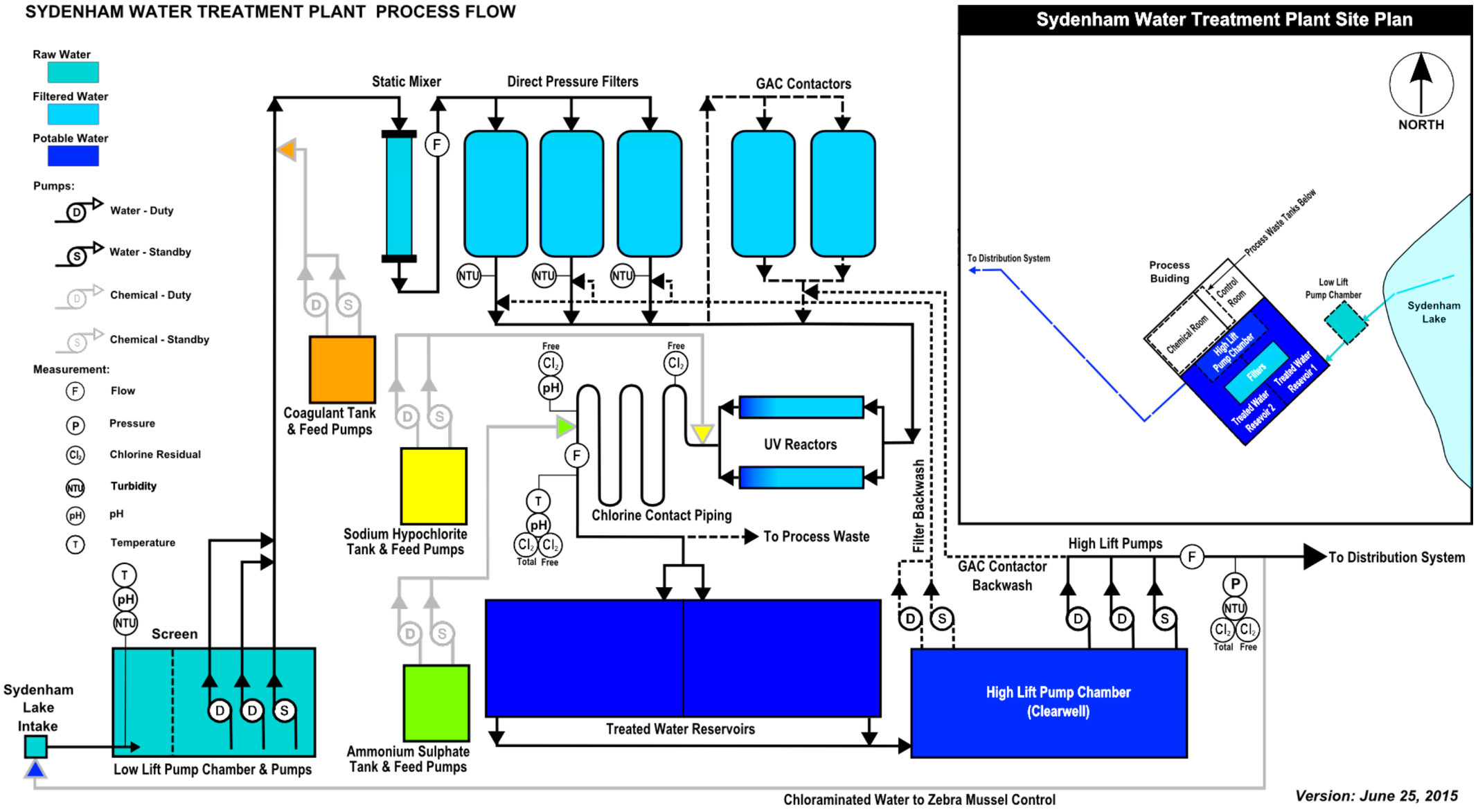
6.6.1.12 High Lift Pumping

Water from the clearwell (high lift pump chamber) is pumped into the distribution system by three high lift pumps (two duty pumps and one standby pump). The flow rate of treated water pumped to the distribution system is continuously monitored.

6.6.1.13 Standby Equipment

A 130 kW standby diesel generator provides electricity to the water plant during power interruptions. The generator and standby equipment is tested regularly to ensure proper operation when required.

Figure 2 – Sydenham Water Treatment Plant Process Flow Diagram



Document:	Document No:
Operational Plan for the Sydenham Drinking Water System	**W-OP-03**

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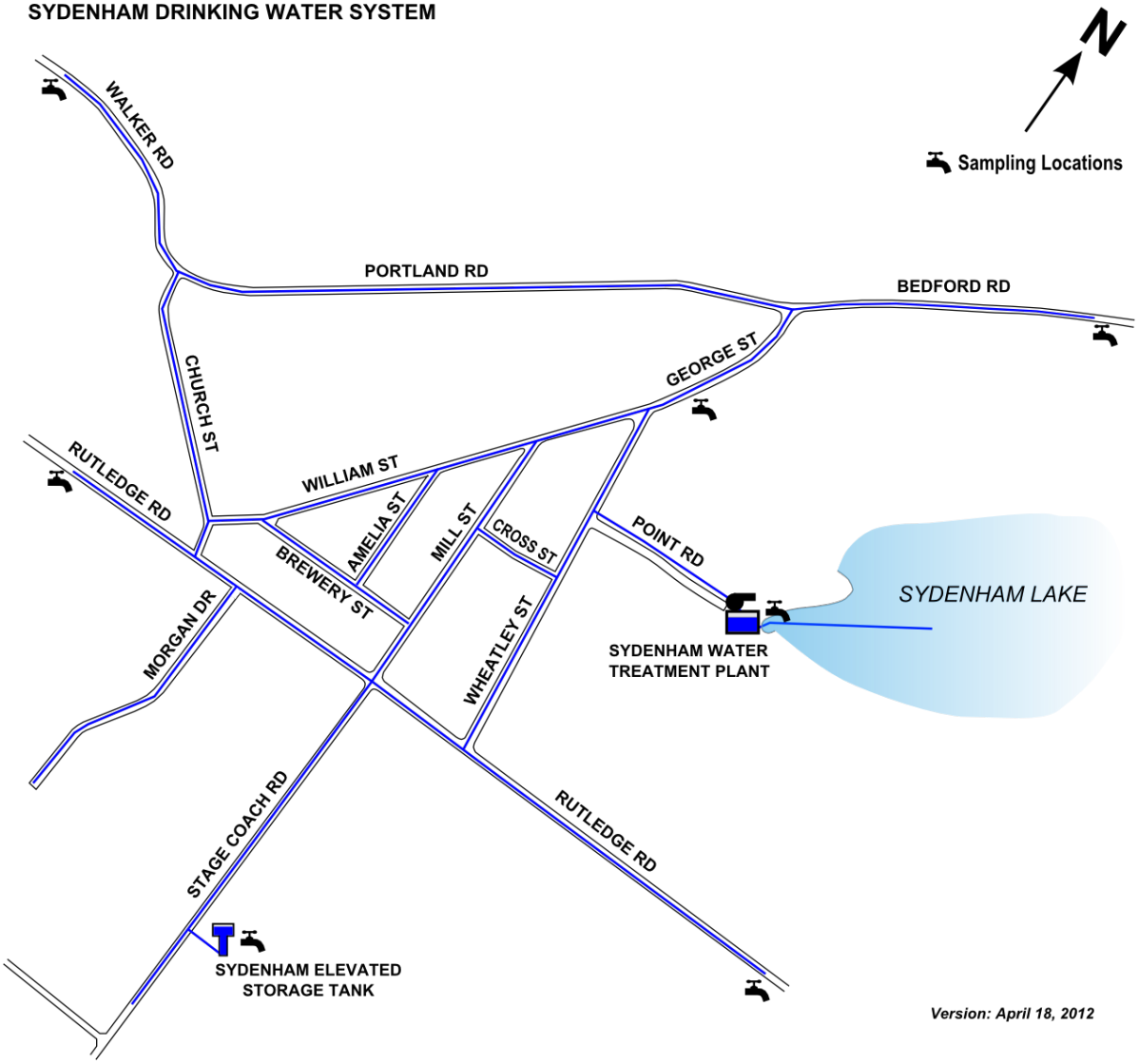
6.7 Distribution System

The Class 1 Sydenham Distribution System is comprised of approximately 6.8 km of polyvinyl chloride (PVC) water mains ranging in size from 150mm to 250mm. The distribution system also includes 1 elevated storage tank, 39 main line valves, and 50 fire hydrants and their associated isolation valves. Once all connections to the distribution system have been completed, the drinking water system will supply water to 285 customer connections.

6.7.1 The Sydenham Elevated Storage Tank

The Sydenham Elevated Storage Tank is located at 4252 Stage Coach Road. The tank has a storage capacity of 1,019m3. The tank provides storage and system pressure stabilization for the distribution system. During normal system operation, the water level in the tank provides the primary control of pump operations at the Sydenham Water Treatment Plant.

Figure 3 – Sydenham Drinking Water System Map



7. Risk Assessment

Utilities Kingston has developed the Risk Assessment Procedure – W-G-03 to ensure that potential hazardous events and the resulting drinking water health hazards are identified and that appropriate monitoring, control, and response measures are developed to mitigate the risks associated with the hazards. This is achieved through a process of identifying potential hazardous events and associated drinking water health hazards. Assessing the risks associated with those hazards by assigning values for probability, consequence and detectability. Identifying and assessing existing control and response measures, identifying Critical Control Points, establishing Critical Control Limits, and ensuring that monitoring and response processes and procedures are in place to respond to deviations from those limits. Potential risks and hazardous events identified for deliberation by the MECP must also be considered while completing a risk assessment. The results of the risk assessments are documented in the following section.

8. Risk Assessment Outcomes

The identification of hazardous events associated drinking water health hazards, and the assessment of the associated risks for the Sydenham Drinking Water System is completed on a three year cycle. The risk assessment team included experienced drinking water operators and supervisory personnel.

The risk assessment findings for the identified events are documented in W-L-11s Sydenham Risk Assessment Outcomes. Events/hazards are listed by event classification in descending order of controlled risk. The controlled risk value represents the relative risk of each event/hazard, considering the control measures in place and the response measures available, when compared to the range of values for all events/hazards assessed for the system.

Each event/hazard combination has been classified in the following categories:

- Event Classification – Events have been classified as either controlled or uncontrolled based on the availability of primary control measures to prevent or reduce the probability of the hazardous event. Each event is further classified as high, moderate, or low risk according to the risk value found during the assessment, the assigned consequence value, and the controlled risk value.
- Controlled Risk Classification – The controlled risk for each event/hazard has been classified as high, moderate, or low based on the risk level after considering the available control and response measures and the potential consequence of the event.
- Control Point Classification – Control Points and Critical Control Points (CCP) are identified based on whether the process step is required by the Procedure for the Disinfection of Drinking Water in Ontario (Minimum CCP), is essential for the delivery of safe drinking water, primary control of the event can be applied, and the results of that control are measurable.

8.1 Critical Control Limit Monitoring and Response

As a result of the risk assessment results, the following Critical Control Limits have been identified and associated response procedures developed for the Sydenham Drinking Water System with the assistance of qualified Utilities Kingston Drinking Water Operators. Each section identifies the Critical Control Limit and describes how the measured parameters are monitored and the considerations and rationale used to determine the limit. The Critical Control Limit Response Procedures referenced describe the response and reporting requirements for measured parameter.

8.1.1 Coagulation Critical Control Limit

Raw water coagulation ensures proper suspended solids removal through floc formation and agglomeration. Correct floc formation is important for adequate filtration of raw water that has the potential for microbiological contamination. Duty and standby chemical metering pumps equipped with

an automatic switchover system and flow sensing switches are used to deliver coagulant to the application point at the Sydenham Water Treatment Plant.

The Procedure for Disinfection of Drinking Water in Ontario requires that a chemical coagulant be used at all times when a treatment plant that uses conventional or direct filtration is in operation. The dosing of coagulant is directly monitored by confirmation of equipment functionality through the SCADA system, which generates an alarm should a coagulant pump fail. The Critical Control Limit for Coagulation is the generation of a coagulant pump failure alarm. Prompt investigation of this alarm condition is required to ensure the continued dosing of coagulant. The Sydenham Drinking Water System Coagulation Critical Control Limit Response Procedure – W-CC-07 describes the response to a coagulant pump failure alarm.

The effectiveness of coagulant dosing is monitored through the continuous measurement of filter effluent turbidities. Filter effluent turbidities are monitored on a continuous basis to ensure filter effluent quality meets the regulatory requirements for drinking water. Filter effluent turbidity alarms may indicate a problem associated with the coagulation process. The investigation of coagulant dosages and coagulation equipment operation is included as part of the Sydenham Drinking Water System Filter Effluent Turbidity Critical Control Limit Response Procedure W-CC-08.

8.1.2 Filter Effluent Turbidity Critical Control Limit

Filtration processes provide for the removal of suspended solids and floc particles that are created through coagulant addition. The Sydenham Water Treatment Plant uses three pressure filtration tanks containing a ceramic filtration media to remove suspended solids from the water prior to the primary disinfection process. Filtration performance is monitored continuously through filter effluent turbidimeters installed on each filter effluent line. Trending through SCADA systems allows for operator interpretation and alarm response capability.

Regulatory limits on filter effluent turbidities have two specific values of concern. Schedule 16 of Ontario Regulation 170/03 specifies that filter effluent turbidity exceeding 1.0 NTU for longer than 15 consecutive minutes is an adverse condition and must be reported as such. The Procedure for the Disinfection of Water in Ontario specifies that the filtration process must meet the performance criterion for filtered water turbidity of less than or equal to 0.3 NTU in 95% of the measurements each month in order to claim the facility specific log removal credits used in disinfection CT calculations.

The alarm set point of 0.3 NTU allows for operator response to elevated turbidity levels well before reaching the regulatory limit of 1.0 NTU and ensures only limited periods of turbidity levels above 0.3 NTU to meet the performance criterion for filtered water turbidity of less than or equal to 0.3 NTU in 95% of the measurements each month.

Operators at the King Street and Point Pleasant Water Treatment Plants, in the City of Kingston, have the ability to remotely initiate a filter backwash through the SCADA system. Continuous operator coverage at the King Street Water Treatment Plant and the availability of standby operators ensures a very timely response to an alarm and initiation of the corrective action process.

With consideration of these factors, a critical control limit of 0.3 NTU for no longer than 30 minutes, can be established. This limit allows for short term filter effluent turbidity spikes above 0.3 NTU, due to operational conditions, which do not pose a threat and enables the identification of more persistent or severe operational conditions which could adversely affect drinking water quality.

The Sydenham Drinking Water System Filter Effluent Critical Control Limit Response Procedure – W-CC-08 describes the response to a filter effluent turbidity alarm and possible exceedance of the critical control limit.

8.1.3 Primary Disinfection Critical Control Limits

The use of ultraviolet light exposure and chlorination for primary disinfection ensures adequate inactivation of pathogens potentially present in the source water that have not been removed by filtration. As a direct filtration plant, the Sydenham Water Treatment Plant is credited with 2 log removal for Giardia and Cryptosporidium, and with 1 log removal for viruses. Removal rates required for surface water plants are 2 log for Cryptosporidium, 3 log for Giardia, and 4 log for viruses. This leaves requirements for disinfection at 1 log removal for Giardia and 3 log removal for viruses.

8.1.3.1 Ultraviolet Light Disinfection

The disinfection through ultraviolet light is accomplished by exposing filtered water flowing through either of two installed UV reactors with a minimum 40 mJ/cm2 dose of UV light at a filtered water ultraviolet light transmittance (UVT) of at least 75%. The UV reactors have been validated to inactivate protozoa and bacteria (fulfilling the remaining requirement for 1 log removal of Giardia) at the dosage noted above. Therefore, only the regulated requirement for chemical disinfection for viruses remains.

The UV dose is monitored continuously. At less than a 40 mJ/cm^2 dose the process is automatically shut down and an alarm is generated. Filtered water grab samples are routinely collected to ensure a UVT of at least 75%.

8.1.3.2 Chemical Disinfection

The remaining 3 log inactivation of viruses is accomplished through the application of chlorine using sodium hypochlorite delivery pumps.

The following parameters together are used in determining the achieved disinfectant CT and are trended on SCADA programs and compared to the required CT to give a log removal achieved value.

- Temperature of the water prior to contact tank entry is monitored continuously with a temperature sensor. Temperature is a parameter that changes based on seasonal variations and cannot be controlled through operational process.
- pH is monitored continuously prior to contact tank entry locations with a pH probe. pH is a parameter that changes with variations in water quality on a seasonal basis.
- Flow Rate is monitored continuously. The rate of flow varies continually based on distribution system demand.
- Detention Time within the chlorine contact piping is calculated continuously through SCADA based on the flow rate.
- Free Chlorine Residual is monitored continuously using Cl_2 analyzers. Free residual varies slightly as dosages and chlorine demand of the water changes.

Achieved CT must be at least 100% of the required CT, which varies with water quality, to ensure that the required 3 log inactivation of viruses is achieved.

Achieved CT must be at least 100% of the required CT, which varies with water quality.

- pH
- Detention Time
- High Lift Flow
- Free Cl_2 Residual

→ CT ≥ 100% or 3 log virus inactivation

All of these parameters vary on an instantaneous basis. If one or any combination of these parameters indicates that the resulting achieved CT value may reach less than 100% of the required CT, proper corrective actions must be implemented. Alarm set points for the monitored parameters are set at levels which indicate conditions, outside of normal operational variance, with the potential to negatively affect the disinfection process and allow sufficient time for operators to adjust controllable variables or restart disrupted processes to ensure that drinking water quality is not adversely affected.

Operators at the King Street and Point Pleasant Water Treatment Plants have the ability to remotely adjust system processes through the SCADA system. Continuous operator coverage at the King Street Water Treatment Plant and the availability of standby operators ensures a very timely response to an alarm and initiation of the corrective action process.

8.1.3.3 Critical Control Limits

The critical control limits must be established at a levels which allow sufficient time for operators to identify and respond to events or conditions which are having an unfavorable effect on the disinfection processes to ensure effective disinfection is maintained and adverse water quality is avoided. With consideration of these factors, the following critical control limits for primary disinfection have been established.

- No less than 150% of the required CT (manual calculation)
- UV lamp fail alarm
- No less than 75% filtered water UVT

The Sydenham Drinking Water System Primary Disinfection Critical Control Limit Response Procedure – W-CC-09 describes the response to measured parameter alarms and possible exceedance of the critical control limit.

8.1.3.4 Secondary Disinfection Critical Control Limit

Secondary disinfection ensures an adequate disinfectant residual within all areas of the distribution system. Chloramination is the method employed in the Sydenham Drinking Water System for the maintenance of secondary disinfection residuals. Following the free chlorine primary disinfection step, ammonium sulphate is added at an approximate 4:1 ratio (free chlorine to ammonia), to react with the free chlorine residual to form chloramines for secondary disinfection. Chlorine and ammonium sulphate dosage rates and the resulting Cl_2 residuals at the Sydenham Water Treatment Plant are monitored and adjusted to ensure that adequate combined Cl_2 residuals are maintained at the furthest points from the water treatment plant discharge. The ongoing effectiveness of chlorine and ammonium sulphate dosage rates is monitored through the collection and testing of distribution system samples described by the Sampling, Testing, and Monitoring Procedure – W-G-09.

Secondary disinfection is monitored continuously through Cl_2 residual analyzers installed at the Sydenham Elevated Storage Tank and confirmed through distribution system grab samples collected on a regular basis. SCADA programs allow for the measurement, control, trending, and alarming of distribution system Cl_2 residual values.

Alarm set points for Cl_2 residuals at the water treatment plant and elevated storage tank are set at levels which indicate conditions, outside of normal operational variance, with the potential to negatively affect secondary disinfection effectiveness and allow sufficient time for operators to carry out flushing, adjust chlorine and ammonium sulphate dosages, or restart disrupted processes to ensure that drinking water safety is not adversely affected.

Operators at the King Street and Point Pleasant Water Treatment Plants have the ability to remotely monitor and/or adjust system processes through SCADA. Continuous operator coverage at the King Street Water Treatment Plant and the availability of standby operators ensures a very timely response to an alarm and initiation of the corrective action process.

With consideration of these factors, the critical control limit for distribution system combined Cl_2 residual can be established at no less than 1.00mg/L. This level allows sufficient time for operators to undertake corrective action to ensure that adverse water quality is avoided.

The Sydenham Drinking Water System Secondary Disinfection Critical Control Limit Response Procedure – W-CC-10 describes the response to measured parameter alarms and possible exceedance of the critical control limit.

9. Organizational Structure, Roles, Responsibilities, and Authorities

9.1 Organizational Structure and Roles

The City of Kingston is the sole shareholder of the Ontario Business Corporation 1425445 Ontario Limited, operating as Utilities Kingston. Utilities Kingston currently provides five different utility services to its customers; water, wastewater, electric, natural gas, and a fibre optic network.

W-L-13s – Sydenham Organizational Structure, Roles, Responsibilities, Authorities, and Competencies provides a summary view of Utilities Kingston's organizational structure. Roles which are displayed in the chart within a blue coloured cell have duties and authorities which impact the safe and reliable supply of drinking water to the customer. The responsibilities, duties and authorities of these roles are described in detail.

Roles and groups which are displayed in the chart within an uncoloured cell do not have duties and authorities which directly impact the safe and reliable supply of drinking water although they may provide services which support the activities of those accountable for the safe and reliable supply of drinking water to the customer.

9.2 Responsibilities

There are four overarching responsibilities under this Operational Plan for which persons having duties and authorities impacting the safe and reliable supply of drinking water to the customer must be held accountable. Those responsibilities are:

- The provision of a safe and secure supply of drinking water
- The identification, obtainment and provision of sufficient resources to ensure the continued safe and secure supply of drinking water
- Ensuring regulatory compliance with regard to drinking water system operations

- Supporting the development, implementation, and continual improvement of a Quality Management System for the drinking water system

9.3 Duties and Authorities

W-L-13s – Sydenham Organizational Structure, Roles, Responsibilities, Authorities, and Competencies This section describes the duties and authorities of those persons or groups accountable for the safe and reliable supply of drinking water to the customer.

10. Competencies

This section describes the competencies, certification, and training requirements for personnel performing duties directly affecting drinking water quality by monitoring, maintaining, and adjusting drinking water system processes, directing changes and adjustments to drinking water system processes, or having duties related to the design, construction, and inspection of drinking water system infrastructure. W-L-13s – Sydenham Organizational Structure, Roles, Responsibilities, Authorities, and Competencies identifies the current required competencies, certification, and training for Utilities Kingston personnel charged with these duties as well as some specific desired competencies.

The required drinking water certifications for the Director(s), and Manager(s), are not identified by the table; desired certifications are identified. Utilities Kingston does ensure that sufficient certifications are held and maintained by management personnel to ensure effective oversight of drinking water system operation that meets regulatory requirements.

- **Competency level 1** indicates that a basic technical proficiency and/or basic knowledge and understanding of a skill or subject area are required. Level 1 competency can be obtained through a combination of education, theoretical and practical instruction, and participation in specialty courses and workshops.
- **Competency level 2** indicates that a good technical proficiency and working knowledge and understanding of a skill or subject area are required. Level 2 competency can be obtained through a combination of education, theoretical and practical instruction, participation in specialty workshops and courses, and work experience.
- **Competency level 3** indicates that an advanced technical proficiency and theoretical and working knowledge and understanding of a particular skill or subject area are required. Level 3 competencies can be achieved through various combinations of education in engineering, science, or other related fields, directly related training, extensive work experience, and regular participation at specialty workshops and courses.

10.1 Meeting and Maintaining Competencies

The Operator Training Procedure – W-G-04 describes how Drinking Water Operators are provided with sufficient training to comply with legislated requirements and to meet and maintain the competency and certification requirements identified in this Operational Plan.

Utilities Kingston encourages Operators to attain competencies and certifications above the minimum requirements. Operators that have met the required competencies and certifications are given the opportunity to receive Competency Enhancement Training as described in the Operator Training Program. These training opportunities are provided to allow Operators to acquire enhanced knowledge and skills and to assist in meeting the education requirements for upgrading Drinking Water Operator Certificates beyond the required levels identified.

Proof of training records are maintained in the personnel files maintained by Human Resources and information regarding training for all operators is tracked electronically in the City Of Kingston's Human Resources Management System (People Soft HRMS). Training information tracked by this system

includes course/training descriptions, training providers, training scheduled and completed, total hours of training completed, and total hours of Director approved training completed.

11. Personnel Coverage

11.1 General

The Personnel Coverage Procedure – W-G-05 describes how Utilities Kingston ensures that sufficient personnel are available to provide a safe and reliable supply of drinking water to the customer. The procedure deals primarily with the processes and protocols used to ensure that sufficient qualified and competent Water Treatment and Water Distribution System Operators are available and that Overall Responsible Operators and Operators in Charge are designated.

Utilities Kingston employs certified operators to operate and maintain the Sydenham Drinking Water System. All personnel employed within Utilities Kingston Water Operations, in a role identified in the Competencies Table, must meet the minimum competency and certification requirements described in the table.

The Director of Engineering, Human Resources and Treatment Operations, Director, Operations, Manager of Water and Wastewater Treatment Operations, Manager of Water and Wastewater Underground Infrastructure, Water and Wastewater Treatment Supervisors and the Water and Wastewater Underground Infrastructure Supervisor form the management team responsible for coordinating and directing the activities of workers employed within the Water and Wastewater Operations Group under the terms and conditions of a collective agreement between Utilities Kingston and the International Brotherhood of Electrical Workers.

11.2 Treatment Group

Operators within the Treatment Group are certified as Water Treatment Operators.

The operation of the Sydenham Water Treatment Plant is continuously monitored through a Supervisory Control and Data Acquisition (SCADA) system. The SCADA system allows for remote monitoring and operation of the treatment and pumping processes from the King Street or Point Pleasant Water Treatment Plants located in the City of Kingston. A shift Operator is on duty at all times at the King Street Water Treatment Plant. Local process control is available through the SCADA panel at the Sydenham Water Treatment Plant. Treatment Operators and Journeypersons perform regular rounds and routine maintenance at the plant.

Alarm conditions are forwarded to operators via cell phones. Under normal operating conditions, this system allows operators to perform duties away from the treatment plant.

Operator coverage for weekday off hours, weekends, and holidays is ensured through the use of 24 hour Operator coverage at the King Street Water Treatment Plant and standby and call out rotation schedules.

The Underground Infrastructure Group provides assistance in instances where specific knowledge, skills, or equipment is an asset.

11.3 Underground Infrastructure Group

Operators within the Underground Infrastructure Group are certified as both Water Distribution and Wastewater Collection Operators. Assistance is available from the Treatment Group in those instances where specific knowledge, skills, or equipment is an asset.

The Underground Infrastructure Group’s base of operations is at the Utilities Kingston Service Centre located at 91 Lappan’s Lane in the City of Kingston. Regular working hours are from 7:30am to 4:00pm, Monday through Friday. Operator coverage for weekday off hours, weekends, and holidays is ensured through the use of standby and call out rotation schedules.

12. QMS Communications

The QMS Communications Procedure – W-G-06 describes how relevant aspects of the Drinking Water QMS are communicated to and between Utilities Kingston Top Management, System Owners, Utilities Kingston personnel, the public, and providers of essential supplies and services.

Utilities Kingston Top Management communicates with the Owner with regard to drinking water system issues and the Drinking Water QMS through reports to the Chief Administrative Officer and Council.

13. Essential Supplies and Services

Documentation of applicable licensing, certification and accreditation ensures quality in the supplies and services employed by Utilities Kingston in the maintenance of infrastructure, and in the processes required to provide drinking water to our customers. Specifically, Utilities Kingston requires suppliers of treatment chemicals and other materials coming into contact with drinking water to provide current documentation that those products have undergone testing and have met the AWWA and ANSI standards (NSF/60, NSF/61), and CALA accreditation for those providing laboratory testing services. In addition to this, Utilities Kingston may also require other licensing, accreditation, certification and verification documentation as noted in its policies and procedures.

The Essential Supplies and Services List – W-L-06 identifies those supplies and services considered essential to the continued supply of safe drinking water to the customer and the primary and alternate suppliers.

14. Review and Provision of Infrastructure

Regular evaluation and review of the condition and capacity of drinking water systems and their components is required to ensure the continued provision of safe drinking water to the customer.

At least annually and as described by the Sydenham Drinking Water System Review and Provision of Infrastructure Procedure – W-G-07S, an evaluation of drinking water system infrastructure condition and capacity through the review of available information including relevant outcomes of the risk assessment is completed to identify any needed rehabilitation, renewal and improvement of existing infrastructure and provision of new infrastructure, prioritize those identified needs, and make recommendations to the system Owner based on the prioritized needs.

Recommendations made to the Owner must include the need for any:

- New infrastructure required due to regulatory, growth, or maintenance requirements
- Improvements to existing infrastructure required due to regulatory, growth, or maintenance requirements
- Rehabilitation and renewal of existing infrastructure based on condition assessments and maintenance requirements

15. Infrastructure Maintenance, Rehabilitation, and Renewal

The ongoing maintenance, rehabilitation, and renewal of drinking water systems and their components is required to ensure the continued provision of safe drinking water to the customer.

Maintenance activities may be either preventative in nature, planned maintenance, or reactive, unplanned maintenance. Planned maintenance includes activities such flushing, valve inspection and maintenance, scheduled calibration of measurement and recording equipment, and routine inspection of equipment condition and operation during rounds at facilities. Unplanned maintenance includes activities such as broken water main and service leak repair, response to various equipment failures, and investigating customer complaints.

Maintenance activities, whether planned or unplanned, are recorded in facility and system log books, work orders, service orders, and other applicable reports and forms. At least annually, and as described by the Infrastructure Maintenance Rehabilitation Renewal Procedure – W-G-08, these records including facility condition assessments, and the long term capital plan are reviewed to identify trends that could indicate the need for infrastructure rehabilitation or renewal.

16. Sampling, Testing, and Monitoring

Measuring and recording the various parameters used in process control and in the application of treatment chemicals and the sampling and testing of drinking water from various system locations is essential to the provision of quality drinking water to the customers of Utilities Kingston. This is a standalone system and no relevant sampling upstream of the system's raw water intake is undertaken.

The sampling, testing, and monitoring completed for the Sydenham Drinking Water System meets regulatory requirements.

The Sampling, Testing, and Monitoring Procedure – W-G-09 describes the sampling, testing and monitoring activities undertaken by Utilities Kingston to ensure optimal drinking water treatment process control and the safety of the drinking water provided to our customers.

17. Measurement and Recording Equipment Calibration & Maintenance

Accuracy in measuring and recording the various parameters used in process control and in the application of treatment chemicals is essential to the provision of quality drinking water to the customers of Utilities Kingston. The Measurement and Recording Equipment Calibration and Maintenance Procedure – W-G-10 describes when and how the calibration of equipment used to make and record measurements critical to the operation of the drinking water system is completed and documented to ensure process efficiency and accuracy, and to meet and maintain regulatory requirements and internal water goals.

18. Emergency Management

The term ‘Emergency’ is typically used to describe a situation which requires immediate action to protect and preserve the health, safety and welfare of persons and limit or prevent damage and destruction of property, infrastructure and the environment. Drinking water emergencies are those situations that may result in the loss of the ability to maintain a supply of safe drinking water to the users of the drinking water system. A potential major drinking water emergency has the potential to adversely affect the supply of safe drinking water to a significant portion of the system or to critical facilities such as hospitals, nursing homes and medical clinics. A major drinking water emergency is adversely affecting or will adversely affect the supply of safe drinking water to a significant portion of the system or to critical facilities.

The Emergency Response and Recovery Procedure – W-E-01 describes the general response and recovery processes to be followed when dealing with a drinking water emergency and evaluating the effectiveness of completed response and recovery operations. The procedure also identifies the requirements for and the processes used to identify potential future drinking water emergencies, develop contingencies to respond to potential emergencies, and evaluate the effectiveness of those contingencies.

The Township of South Frontenac’s Emergency Response Plan identifies the members of the Community Control Group and outlines each member’s responsibilities. Specific to drinking water, the Public Works Manager and the Medical Officer of Health are responsible for ensuring the safety of drinking water. During a declared emergency, Utilities Kingston will keep the Community Control Group

apprised of the operational condition of the Sydenham Drinking Water System and the safety and security of the drinking water supplied by the system.

19. Internal Audits

Internal audits are conducted to evaluate conformity of the Quality Management System with the requirements of the Drinking Water Quality Management Standard. Internal audits must be completed at least once a calendar year. The Internal Audit Procedure – W-G-11 describes how internal audits are completed for each of the drinking water systems operated by Utilities Kingston.

20. Management Review

At least once a calendar year a management review committee is required to review the performance of the Drinking Water QMS and identify any deficiencies which require corrective action. The review is intended to ensure the continuing suitability, adequacy and effectiveness of the Drinking Water QMS. The Management Review Procedure – W-G-12 describes how the review is to be completed and the results communicated. Best management practices published by the Ministry of Conservation and Parks will also be reviewed and considered during the Management Review.

21. Continual Improvement of the Quality Management System

Utilities Kingston will strive to continually improve the Quality Management System through the use of preventative actions to eliminate the cause of potential non-conformities and through corrective actions undertaken to address non-conformances identified through internal audits, and management reviews, and by implementing improvements identified and suggested by staff and management including best management practices.

Document: Operational Plan for the Sydenham Drinking Water System	Document No: W-OP-03

Appendix A – Schedule "C" Subject System Description Form

Print Form

Schedule "C"

Subject System Description Form
Municipal Residential Drinking Water System

Owner of Municipal Residential Drinking Water System:[1] Township of South Frontenac

Name of Municipal Residential Drinking Water System:[2] Sydenham Drinking Water System

Subject Systems

Name of Operational Subsystems[3] (if Applicable)	Name of Operating Authority[5]	DWS Number(s)[6]
☒ Check here if the Municipal Residential Drinking Water System is operated by one operating authority. Enter the name of the operating authority in adjacent column[4] Operational Subsystem 1:	1425445 Ontario Limited	260069290
Operational Subsystem 2:		
Operational Subsystem 3:		
Operational Subsystem 4:		

Add attachments if there are additional 'Operational Subsystems'

Contact Information[7]

Name	Title	Phone Number	e-mail address
Jim Miller	Director, Water and Wastewater Treatment Operations	613-546-1181 X 2475	jmiller@utilitieskingston.com
Julie Runions	Manager, Water and Wastewater Treatment Operations	613-546-1182 X2172	jrunions@utilitieskingston.com

Township of South Frontenac

Staff Report

To:	Council
Prepared by:	Corporate Services Department
Date of Meeting:	December 19, 2023
Subject:	**2024 Budget**

Summary

This report summarizes the 2024 Budget and requests adoption.

Recommendation

THAT *Council approve and adopt the combined 2024 Capital and Operating budgets requiring $22,474,275 to be raised by taxation, as attached.*

Background

The 2024 Budget was presented and discussed at the December 12th Council meeting. A few items were requested for follow-up and clarifications from staff which are summarized below.

2024 Budget

The impact of the presented budget aligns with Council's direction and amounts to a 2.74% or $47.04 impact on the average phased-in residential property of $278,126.

The final budget represents $44,553,398 in reserve transfers, operating and capital expenditures and results in a total amount to be raised from taxation of $22,474,274.

Attached as Appendix 1 is the final 2024 Budget updated from the December 12th meeting which also includes the capital budget and reserve schedule. The budget changed from what was previously circulated as there was an amendment to remove a levy of $6,173 for the inspection and maintenance costs that were being considered through Quinte Conservation Authority for 14 Island Lake Dam.

Follow up data Requests from Budget Day

With the use of Reserves to match the needs of the capital and operational budgets, Council requested a comparison of the reserves for the past few years. A historical comparison is shown in Attachment 2.

Council also asked what the implication in the tax rate would be if we were not able to access these reserves which have built up over time. The 2024 tax rate will be 2.77% utilizing reserves but would require a 61.22% increase without reserves.

Council also asked for a comparison of the Tax Rate changes over the past 5 years in comparison to the Consumer Price Index. The results are shown below:

South Frontenac Tax Rate Increments Compared to CPI

	Tax Rate Changes	Consumer Price Index (As of OCT Prev to Budget)
2019 over 2020	2.00%	3.70%
2021 over 2020	1.50%	1.20%
2022 over 2021	2.00%	4.70%
2023 over 2022	2.62%	6.90%
2024 over 2023	2.74%	3.10%
Average	**2.17%**	**3.92%**

Financial Implications

The combined 2024 Capital and Operating budgets requires $22,474,274 to be raised by taxation. A separate by-law will be brought forward at a future meeting to authorize tax rates based on the approved budget.

Relationship to Strategic Plans

☐ Not applicable to this report.

☒ This initiative is supported by the following priorities of the 2019-2022 Strategic Plan.

- Priority: 3. Ensure the organizational capacity to deliver cost-effective services in a changing world.

Attachments

1. 2024 Final Budget
2. Reserves Historical Comparison

Approvals

Submitted By:

Shelley Stedall, Dipl. B.Admin. AMCT
Director of Corporate Services & Treasurer

Approved By:

Louise Fragnito, CPA, CGA
Chief Administrative Officer

TOWNSHIP OF SOUTH FRONTENAC

2024 Final Budget

High Level Summary of Changes

Below is a high level summary of key changes from last year's budget excluding transfers to Reserves, transfers to Capital and inter-departmental transfers.

The listing below incorporates all items directed by Council, originally requested by staff and recommended by committees.

Notable Variances in presented budget		
Costs Savings		
Hartington Parking Lot - Reduced Monitoring	-8,000	
One Time Software Costs	-11,500	
Hardware Replacements	-22,055	***-41,555***
Reduced Revenues		
OCIF	159,062	***159,062***
Increased Revenues		
OMPF	-7,500	
AMP Revenues	-15,500	
Bank Interest and Investment Interest	-290,000	
Swim/Daycamp Fees *	-94,300	
Planning Fees	-153,000	***-560,300***
Increased Costs		
Capital Taxation Requisition	96,750	
Current Year Asset Investment Reserve Impact (1% of current year levy)	222,579	
Conservation Authorities	50,605	
Insurance (4% overall)	13,598	
Pavement Marking	110,000	
Mowing Local Roads	30,000	
Recycling Collection	28,552	
Computer Maintenance Contracts	22,353	
Staff Complement Annual Adjustments	338,642	***913,079***

Organizational Development Plan		
Assessment Growth = .99% or $219,472		
Public Services Reorganization Annualization	35,404	
Development Services Reorganization Annualization	96,077	
Human Resources Advisor (May - Dec) Remove P/T HR Asst	57,599	
Public Services LEO Facilities (May - Dec)	51,111	***240,191***

Enhanced Services included in Budget		
McMullen Beach - Swim/Daycamps - Net Fees and Student Costs *	0	
Summer Students (Swim/Daycamp) *	95,500	
By-law Enforcement Contract	7,100	
Parks - Tree Planting to replace dead Ash trees	20,000	***122,600***

Enhanced Services / Positions not in Budget		
LEO - Public Services (May - Dec)	51,111	
Fire Prevention Officer - Contract extension July - Dec.	51,020	
Arborist for Tree Removal	40,000	
Tub Grinder Contract	34,000	
Frontenac Arch Biosphere Request	17,000	
Previously Capital Transfer to Reserve - will now be allocated to identified projects		
Sidewalks	50,000	
Guiderails	50,000	
Streetlights	30,000	
	323,131	

Total Increase to be raised by Taxation		***833,077***

Assessment Growth	**0.99%**	***219,472***

Enhanced Services included in Budget - Self Funded or Funded from Reserves		
Building Inspector - Annualization	61,447	
Utilities Kingston Fees	35,131	
Compensation Review	35,000	***131,578***

Reduced Revenues included in Budget - Self Funded		
Sewage Permits No Longer Inspecting other Municipalities	135,000	***135,000***

TOWNSHIP OF SOUTH FRONTENAC

2024 Final Budget

High Level Summary of Changes

Council Direction - No specific target - but focus on priorities. Staff kept in mind the historical target of 2% along with known inflationary costs in the current economy.
The proposed budget meets an overall 2.74% increase in the average taxpayer impact.
This represents an overall $864,707 overall Township levy increase.
Several expenses in comparing 2023 budget to forecasted 2024 expenses go beyond a 2% increase requiring changes to existing activities to meet this target.
The capital budget, which was presented on November 21, 2023, includes total projected costs of $17,766,740 including a transfer to reserve for Road 38. The listing of projects including proposed funding is attached to this budget document.

TOWNSHIP OF SOUTH FRONTENAC
2024 Final Budget

	Summary of Revenue and Expense	Actuals			2023-2024 Budget	
		2023 Budget	27-Nov-23	2024 Budget	Variance	
		$	$	$	$	%
1.	**REVENUE**					
2.	Property Taxation- Supplementary & PIL	249,500	145,181	249,500	0	0.00%
3.	User Charges	1,252,744	988,849	1,541,807	289,063	23.07%
4.	Licenses, Permits and Rents	1,702,635	1,330,532	1,560,838	-141,797	-8.33%
5.	Government Grants	3,185,516	2,802,164	3,315,611	130,095	4.08%
6.	Grants from Other Municipalities	495,252	0	495,000	-252	-0.05%
7.	Investment Income	359,000	928,665	649,000	290,000	80.78%
8.	Penalties and interest on taxes	370,000	336,280	370,000	0	0.00%
9.	Donations	0	38,851	6,725	6,725	
10.	Other	82,000	166,907	63,000	-19,000	-23.17%
11.	Transfers From Reserves/Reserve Funds	8,069,584	0	13,827,642	5,558,058	68.88%
12.	**TOTAL Revenue**	15,766,231	6,737,429	22,079,123	6,312,892	40.04%
13.	**OPERATING EXPENSE**					
14.	*General Government*	6,404,592	5,334,078	10,334,761	3,930,168	61.36%
15.	*Protection to Persons and Property*					
16.	Fire	3,003,241	3,045,735	2,884,333	-118,908	-3.96%
17.	Police	2,865,302	2,652,577	2,873,290	7,988	0.28%
18.	Conservation Authorities	271,271	296,557	521,876	250,605	92.38%
19.	Protective Inspections and Control	133,173	124,327	148,753	15,579	11.70%
20.	Emergency Measures	2,750	47	3,500	750	27.27%
21.	Building Department	1,431,660	969,394	1,343,983	-87,677	-6.12%
22.	*Transportation Services*					
23.	Roadway Maintenance	14,746,726	10,444,491	16,184,205	1,437,479	9.75%
24.	Winter Control	2,369,180	1,885,528	2,361,009	-8,171	-0.34%
25.	*Environmental Services*					
26.	Water System	411,312	249,009	731,930	320,618	77.95%
27.	Solid Waste Management	3,140,655	2,344,257	3,110,649	-30,007	-0.96%
28.	*Parks, Recreation and Cemeteries*	1,659,707	2,482,002	3,032,146	1,372,439	82.69%
29.	*Planning and Development*	967,858	748,614	1,022,964	55,106	5.69%
30.	**TOTAL Expense**	37,407,428	30,576,616	44,553,398	7,145,970	19.10%
31.	**TO BE RAISED BY TAXATION**	**21,641,197**	**-**	**22,474,274**	833,077	3.85%

IMPACT ON TAXPAYER:
BASED ON AVERAGE PHASE-IN ASSESSMENT THE TOWNSHIP'S SHARE OF
THE TAX BILL ON A 278,126 PROPERTY WILL INCREASE 2.74% WHICH EQUALS $47.04

TOWNSHIP OF SOUTH FRONTENAC
2024 Final Budget

General Government Detail

		Actuals		2023-2024 Budget	
	2023 Budget	27-Nov-23	2024 Budget	Variance	
	$	$	$	$	%
1.	**GENERAL MUNICIPAL ACTIVITY**				
2.	**Revenue**				
3.	Taxation - Supplementary & PIL	249,500	145,181	249,500	0	0.00%
4.	Government Grants	1,602,000	1,602,000	1,609,500	7,500	0.47%
5.	Investment Income	345,000	911,161	635,000	290,000	84.06%
6.	Penalties and interest on taxes	370,000	336,280	370,000	0	0.00%
7.	Other	0	70,906	0	0	0.00%
8.	Transfer from Reserves	0	0	0	0	0.00%
9.	**Total Revenue**	2,566,500	3,065,529	2,864,000	297,500	11.59%
10.	**Expense**					
11.	Operations	0	0	0	0	0.00%
12.	Transfer to Reserves	3,045,336	3,037,621	3,267,854	222,518	7.31%
13.	**Total Expense**	3,045,336	3,037,621	3,267,854	222,518	7.31%
14.	**TOTAL GENERAL MUNCIPAL ACTIVITY**	**478,836**	**-27,907**	**403,854**	**-74,982**	**-15.66%**
15.	**COUNCIL**					
16.	**Revenue**					
17.	Grants from Other Municipalities	0	0	0	0	0.00%
18.	Transfer from Reserves	100,000	0	100,000	0	0.00%
19.	**Total Revenue**	100,000	0	100,000	0	0.00%
20.	**Expense**					
21.	Remuneration	185,763	162,941	197,398	11,635	6.26%
22.	Benefits	6,423	6,313	7,685	1,262	19.65%
23.	Memberships, Training and Travel	26,000	19,403	25,900	-100	-0.38%
24.	Communications	15,900	13,081	18,900	3,000	18.87%
25.	Council Operations	130,555	20,372	134,693	4,138	3.17%
26.	Grants * (see details bottom of next page)	229,109	200,948	229,109	0	0.00%
27.	Transfer to Capital	0	320	0	0	0.00%
28.	Transfer to Reserves	10,000	10,000	10,000	0	0.00%
29.	**Total Expense**	603,750	433,379	623,685	19,935	3.30%
30.	**TOTAL COUNCIL**	**503,750**	**433,379**	**523,685**	**19,935**	**3.96%**
31.	**ELECTIONS**					
32	**Revenue**					
33.	User Charges	0	-400	0	0	0.00%
34.	Transfer from Reserves	0	0	0	0	0.00%
35.	**Total Revenue**	0	-400	0	0	100.00%
36.	**Expense**					
37.	Remuneration	0	0	0	0	0.00%
38.	Benefits	0	0	0	0	0.00%
39.	Memberships, Training and Travel	0	0	0	0	0.00%
40.	Communications	0	0	0	0	0.00%
41.	Elections Operations	0	0	0	0	0.00%
42.	Transfer to Reserves	25,000	25,000	25,000	0	0.00%
43.	**Total Expense**	25,000	25,000	25,000	0	0.00%
44.	**TOTAL ELECTIONS**	**25,000**	**25,400**	**25,000**	**0**	**0.00%**

TOWNSHIP OF SOUTH FRONTENAC
2024 Final Budget

General Government Detail

		2023 Budget	Actuals 27-Nov-23	2024 Budget	2023-2024 Budget Variance $	Variance %
		$	$	$	$	%
45.	**CORPORATE SERVICES**					
46.	**Revenue**					
47.	User Charges	40,100	19,794	40,500	400	1.00%
48.	Licenses, Permits and Rents	1,800	1,364	1,800	0	0.00%
49.	Government Grants	0	0	80,000	80,000	100.00%
50.	Other	3,000	8,906	3,000	0	0.00%
51.	Transfer from Reserves	145,000	0	504,230	359,230	247.74%
52.	**Total Revenue**	189,900	30,063	629,530	439,630	231.51%
53.	**Expense**					
54.	Remuneration	1,144,507	1,008,540	1,218,804	74,297	6.49%
55.	Benefits	387,040	322,930	432,609	45,569	11.77%
56.	Inter Departmental Transfer	0	0	0	0	0.00%
57.	Memberships, Training and Travel	59,804	18,836	78,177	18,373	30.72%
58.	Communications	54,678	50,759	56,178	1,500	2.74%
59.	Professional and Consulting Fees	44,267	8,328	82,000	37,733	85.24%
60.	Administrative Operations	225,652	239,155	204,057	-21,595	-9.57%
61.	Transfer to Capital	145,000	458	538,190	393,190	271.17%
62.	**Total Expense**	2,060,948	1,649,006	2,610,015	549,067	26.64%
63.	**TOTAL CORPORATE SERVICES**	**1,871,048**	**1,618,943**	**1,980,485**	**109,437**	**5.85%**
64.	**ADMINISTRATIVE FACILITIES**					
65.	**Revenue**					
66.	Facilities Revenue	223,135	166,402	224,375	1,240	0.56%
67.	Government Grants	0	0	0	0	0.00%
68.	Donations	0	0	0	0	0.00%
69.	Transfer from Reserves	360,000	0	3,500,000	3,140,000	872.22%
70.	**Total Revenue**	583,135	166,402	3,724,375	3,141,240	538.68%
71.	**Expense**					
72.	Remuneration	0	7,088	0	0	0.00%
73.	Inter Departmental Transfer	1,291	2,971	1,291	0	0.00%
74.	Professional and Consulting Fees	5,610	4,366	6,920	1,310	23.35%
75.	Facilities Operating Costs	198,027	123,625	182,422	-15,605	-7.88%
76.	Transfer to Capital	360,000	46,021	3,500,000	3,140,000	872.22%
77.	Transfer to Reserves	104,631	5,000	117,574	12,943	12.37%
78.	**Total Expense**	669,558	189,072	3,808,207	3,138,649	468.76%
79.	**TOTAL ADMINISTRATIVE FACILITIES**	**86,423**	**22,669**	**83,832**	**-2,592**	**-3.00%**
80.	**Total General Government**	**2,965,057**	**2,072,484**	**3,016,856**	**51,798**	**1.75%**

Explanation of Significant Variances

Line 4	OMPF confirmed Funding
Line 5	Investment Bank Interest
Line 12	In year Asset Investment Reserve (AIR) contribution
Line 54/55	Human Resource Advisor/ Annualization of Deputy Clerk
Line 59	Compensation Review
Line 76	Admnistration Offices Construction

* **Council - Grants to Organizations/Individuals (line 26)**

Private Lanes	100,000	Bradshaw School Visits	2,000
South Frontenac Community Services (SFCS)	20,200	Inverary Youth	1,650
Community Grants	35,000	High School - Graduation	500
Seniors & Law Enforcement Together (SALT)	7,500	Trails - Work in kind - CRCA	5,219
Lake Study Grants	30,000	Heritage Committee Grant	15,000
Non-Township Facilities (Verona Mini-Park/ Lion's Hall)	7,040	Miscellaneous	5,000
		Total	**229,109**

TOWNSHIP OF SOUTH FRONTENAC
2024 Final Budget

Protection to Persons and Property Detail

		Actuals		2023-2024 Budget	
	2023 Budget	27-Nov-23	2024 Budget	Variance	
	$	$	$	$	%
1. **FIRE**					
2. **Revenue**					
3. User Charges	56,000	19,999	55,750	-250	-0.45%
4. Grants from Other Municipalities	0	0	0	0	0.00%
5. Other	0	28,943	0	0	0.00%
6. Transfer from Reserves	950,500	0	865,021	-85,479	-8.99%
7. **Total Revenue**	1,006,500	48,942	920,771	-85,729	-8.52%
8. **Expense**					
9. Remuneration	749,790	576,377	811,005	61,215	8.16%
10. Benefits	143,306	130,078	173,720	30,414	21.22%
11. Memberships, Training and Travel	30,750	14,698	30,750	0	0.00%
12. Communications & Public Education	70,174	56,693	69,900	-274	-0.39%
13. Professional and Consulting Fees	6,250	3,196	6,250	0	0.00%
14. Fire Operations	336,329	367,710	347,458	11,129	3.31%
15. Transfer to Capital	1,005,500	1,246,553	784,000	-221,500	-22.03%
16. Transfer to Reserves	452,182	466,684	452,182	0	0.00%
17. **Total Expense**	2,794,281	2,861,989	2,675,265	-119,016	-4.26%
18. **TOTAL FIRE**	**1,787,781**	**2,813,047**	**1,754,494**	**-33,287**	**-1.86%**
19. **FIRE FACILITIES**					
20. **Expense**					
21. Facilities Operating Costs	198,280	173,286	198,608	328	0.17%
22. **Total Expense**	198,280	173,286	198,608	328	0.17%
23. **TOTAL FIRE FACILITIES**	**198,280**	**173,286**	**198,608**	**328**	**0.17%**
24. **911 SERVICE**					
25. **Expense**					
26. 911 Operations	10,680	10,460	10,460	-220	-2.06%
27. **Total Expense**	10,680	10,460	10,460	-220	-2.06%
28. **TOTAL 911 SERVICE**	**10,680**	**10,460**	**10,460**	**-220**	**-2.06%**
29. **TOTAL FIRE**	**1,996,741**	**2,996,793**	**1,963,562**	**-33,179**	**-1.66%**

Explanation of Significant Variances

Line 9/12	VFF Wage Adjustment/ FPO 6 Months
Line 14	Insurance, Vehicle Maintenace

TOWNSHIP OF SOUTH FRONTENAC
2024 Final Budget

Protection to Persons and Property Detail

		Actuals			2023-2024 Budget	
		2023 Budget	27-Nov-23	2024 Budget	Variance	
		$	$	$	$	%
1.	**POLICE**					
2.	**Revenue**					
3.	User Charges	8,000	15,469	8,000	0	0.00%
4.	Government Grants	9,300	0	9,300	0	0.00%
5.	Transfer from Reserves	0	0	0	0	0.00%
6.	**Total Revenue**	17,300	15,469	17,300	0	0.00%
7.	**Expense**					
8.	Remuneration	1,350	1,250	1,350	0	0.00%
9.	Memberships, Training and Travel	900	811	1,200	300	33.33%
10.	Communications	1,214	1,044	1,214	0	0.00%
11.	Police Operations	2,852,998	2,647,403	2,860,686	7,688	0.27%
12.	**Total Expense**	2,856,462	2,650,508	2,864,450	7,988	0.28%
13.	**TOTAL POLICE**	**2,839,162**	**2,635,040**	**2,847,150**	**7,988**	**0.28%**
14.	**RIDE PROGRAM**					
15.	**Revenue**					
16.	Government Grants	8,840	0	8,840	0	0.00%
17.	**Total Revenue**	8,840	0	8,840	0	0.00%
18.	**Expense**					
19.	Ride Operations	8,840	2,068	8,840	0	0.00%
20.	**Total Expense**	8,840	2,068	8,840	0	0.00%
21.	**TOTAL RIDE PROGRAM**	**0**	**2,068**	**0**	**0**	**100.00%**
22.	**Total Police**	**2,839,162**	**2,637,108**	**2,847,150**	**7,988**	**0.28%**
23.	**CONSERVATION AUTHORITIES**					
24.	**Revenues**					
25.	Transfer from Reserves	0	0	200,000	0	100.00%
26.	**Total Revenue**	0	0	200,000	0	100.00%
27.	**Expense**					
28.	Remuneration	2,000	1,900	2,000	0	0.00%
27.	Conservation Authority Transfers	269,271	294,657	319,876	50,605	18.79%
27.	Transfer to Capital	0	0	200,000	0	100.00%
27.	**Total Expense**	271,271	296,557	521,876	50,605	18.65%
28.	**TOTAL CONSERVATION AUTHORITIES**	**271,271**	**296,557**	**321,876**	**50,605**	**18.65%**

Explanation of Significant Variances

Line 26	Conservation Authorities increases	
	Cataraqui Region Conservation Authority	$8,985 or 5.61 increase
	Quinte Conservation	$47,009 or 49% increase.
	Rideau Valley Conservation Authority	$784 or 2.93% increase

TOWNSHIP OF SOUTH FRONTENAC
2024 Final Budget

Protection to Persons and Property Detail

		Actuals		2023-2024 Budget	
	2023 Budget	27-Nov-23	2024 Budget	Variance	
	$	$	$	$	%
1.	**PROTECTIVE INSPECTIONS AND CONTROL**				
2.	**Revenue**				
3.	User Charges	10,500	29,700	24,000	13,500	128.57%
4.	Licenses, Permits and Rents	47,000	37,710	42,000	-5,000	-10.64%
5.	Government Grants	9,000	7,880	9,000	0	0.00%
6.	Other	0	0	0	0	0.00%
7.	**Total Revenue**	66,500	75,290	75,000	8,500	12.78%
8.	**Expense**					
9.	Inter Departmental Transfer	0	0	0	0	0.00%
10.	Memberships, Training and Travel	13,000	10,245	15,500	2,500	19.23%
11.	Communications	2,100	521	2,100	0	0.00%
12.	Professional and Consulting Fees	18,000	41,073	23,000	5,000	27.78%
13.	Protective Operations	100,073	72,488	108,153	8,079	8.07%
14.	Transfer to Reserves	0	0	0	0	0.00%
15.	**Total Expense**	133,173	124,327	148,753	15,579	11.70%
16.	**TOTAL PROTECTIVE INSPECTIONS AND CONTROL**	**66,673**	**49,037**	**73,753**	**7,079**	**10.62%**
17.	**EMERGENCY MANAGEMENT**					
18.	**Revenue**					
19.	Transfer from Reserves	0	0	0	0	0.00%
20.	**Total Revenue**	0	0	0	0	100.00%
21.	**Expense**					
22.	Remuneration	500	0	500	0	0.00%
23.	Memberships, Training and Travel	250	0	1,000	750	300.00%
24.	Communications	1,500	47	1,000	-500	-33.33%
25.	Emg Management Operations	500	0	1,000	500	100.00%
26.	**Total Expense**	2,750	47	3,500	750	27.27%
27.	**TOTAL EMERGENCY MANAGEMENT**	**2,750**	**47**	**3,500**	**750**	**27.27%**

Explanation of Significant Variances	
Line 3	Administrative Monetary Penalties (AMP's)
Line 12	By-law Legal
Line 13	By-law Enforcement Contract

TOWNSHIP OF SOUTH FRONTENAC
2024 Final Budget

Protection to Persons and Property Detail

		Actuals		2023-2024 Budget	
	2023 Budget	27-Nov-23	2024 Budget	Variance	
	$	$	$	$	%
1.	**BUILDING**				
2.	**Revenue**				
3.	User Charges	19,500	7,801	19,500	0	0.00%
4.	Licenses, Permits and Rents	1,315,600	1,052,209	1,181,183	-134,417	-10.22%
5.	Government Grants	0	0	0	0	0.00%
6.	Other	0	13,200	0	0	0.00%
7.	Transfer from Reserves	45,000	0	90,600	45,600	101.33%
	Total Revenue	1,380,100	1,073,209	1,291,283	-88,817	-6.44%
8.	**Expense**					
9.	Remuneration	739,343	601,103	788,377	49,034	6.63%
10.	Benefits	277,557	209,640	273,614	-3,944	-1.42%
11.	Inter Departmental Transfer	0	0	0	0	0.00%
12.	Memberships, Training and Travel	31,300	27,294	31,300	0	0.00%
13.	Communications	6,639	4,637	6,639	0	0.00%
14.	Professional and Consulting Fees	10,000	3,618	10,000	0	0.00%
15.	Building Operations	97,377	78,509	91,354	-6,023	-6.19%
16.	Transfer to Capital	45,000	0	50,000	5,000	11.11%
17.	Transfer to Reserves	172,884	40,000	40,000	-132,884	-76.86%
18.	**Total Expense**	1,380,100	964,801	1,291,283	-88,817	-6.44%
19.	**TOTAL BUILDING**	**0**	**-108,408**	**0**	**0**	**-69.37%**
20.	**CIVIC NUMBERS**					
21.	**Revenue**					
22.	User Charges	10,000	5,150	10,000	0	0.00%
23.	**Total Revenue**	10,000	5,150	10,000	0	0.00%
24.	**Expense**					
25.	Remuneration	0	2,401	0	0	0.00%
26.	Benefits	0	0	0	0	0.00%
27.	Civic Numbers Operations	51,560	2,192	52,700	1,140	2.21%
28.	**Total Expense**	51,560	4,593	52,700	1,140	2.21%
29.	**TOTAL CIVIC NUMBERS**	**41,560**	**-557**	**42,700**	**1,140**	**2.74%**
30.	**TOTAL BUILDING**	**41,560**	**-108,965**	**42,700**	**1,140**	**2.74%**
31.	**Total Protection to Persons and Property Detail**	**5,218,157**	**5,870,577**	**5,252,540**	**34,383**	**0.66%**

Explanation of Significant Variances

Line 4	Part 8 - NF/CF/FI - Contract ended 2023
Line 9/10	New Building Inspector Annualization

TOWNSHIP OF SOUTH FRONTENAC
2024 Final Budget

Transportation Services Detail

		Actuals			2023-2024 Budget	
		2023 Budget	27-Nov-23	2024 Budget	Variance	
		$	$	$	$	%
1.	**ROADS**					
2.	**Revenue**					
3.	User Charges	8,500	7,600	8,500	0	0.00%
4.	Licenses, Permits and Rents	99,500	60,348	99,500	0	0.00%
5.	Government Grants	1,060,414	883,678	901,352	-159,062	-15.00%
6.	Grants from Other Municipalities	495,252	0	495,000	-252	-0.05%
7.	Other	76,500	44,953	60,000	-16,500	-21.57%
8.	Transfer from Reserve	5,690,684	0	6,702,948	1,012,264	17.79%
	Total Revenue	7,430,850	996,579	8,267,300	836,450	11.26%
9.	**Expense**					
10.	Remuneration	1,634,293	1,601,700	1,724,297	90,004	5.51%
11.	Benefits	606,923	803,994	637,485	30,562	5.04%
12.	Inter Departmental Transfer	-779,726	-641,637	-799,178	-19,453	2.49%
13.	Memberships, Training and Travel	43,070	45,131	39,464	-3,606	-8.37%
14.	Communications	55,657	33,023	58,502	2,845	5.11%
15.	Professional and Consulting Fees	33,070	15,700	38,542	5,472	16.55%
16.	Roads Operations * (see details below)	3,011,589	2,626,321	3,252,925	241,336	8.01%
17.	Transfer to Capital	9,541,850	5,276,754	10,628,050	1,086,200	11.38%
18.	Transfer to Reserves	600,000	683,509	604,118	4,118	0.69%
19.	**Total Expense**	14,746,726	10,444,493	16,184,205	1,437,479	9.75%
20.	**TOTAL ROADS**	**7,315,876**	**9,447,915**	**7,916,905**	**601,029**	**8.22%**
21.	**WINTER CONTROL**					
22.	**Expense**					
23.	Remuneration	516,309	288,215	567,561	51,252	9.93%
24.	Benefits	184,381	0	199,706	15,325	8.31%
25.	Inter Departmental Transfer	662,958	594,804	622,009	-40,949	-6.18%
26.	Winter Control Operations	1,005,532	1,002,509	971,733	-33,799	-3.36%
27.	Transfer to Capital	0	0	0	0	0.00%
28.	**Total Expense**	2,369,180	1,885,528	2,361,009	-8,171	-0.34%
29.	**TOTAL WINTER CONTROL**	**2,369,180**	**1,885,528**	**2,361,009**	**-8,171**	**-0.34%**
30.	**Total Transportation Services**	**9,685,056**	**11,333,443**	**10,277,914**	**592,858**	**6.12%**

		YTD Actual		2023-2024 Budget	
31.	***Roads Operations Breakdown (line 16)**	2023 Budget	27-Nov-23	2024 Budget	Variance	
		$	$	$	$	%
32.	Maintenance - Structures	19,518	14,915	20,018	501	2.57%
33.	Roadside Maintenance	416,993	292,081	497,356	80,363	19.27%
34.	Hardtop Maintenance	459,873	418,321	471,855	11,982	2.61%
35.	Loose Top Maintenance	326,442	322,118	334,071	7,629	2.34%
36.	Safety Devices	338,165	389,508	478,419	140,254	41.48%
37.	Street Lights	43,985	37,066	47,500	3,515	7.99%
38.	Overhead	1,406,614	1,152,311	1,403,705	-2,909	-0.21%
39.	**TOTAL ROADS MAINTENANCE**	**3,011,589**	**2,626,321**	**3,252,925**	**241,335**	**8.01%**

Explanation of Significant Variances

Line 5	OCIF Funding Confirmed and is was reduced by 15% - $159,062
Line 8	CCBF (former Gas Tax) not yet confirmed
Line 10/11	PS Operations Additional PT and annualization of positions
Line 29	5 year average + 2%

TOWNSHIP OF SOUTH FRONTENAC
2024 Final Budget

Environmental Services Detail

		Actuals			2023-2024 Budget	
		2023 Budget	27-Nov-23	2024 Budget	Variance	
		$	$	$	$	%
1.	**WATER SYSTEM**					
2.	**Revenue**					
3.	User Charges	408,912	287,778	417,030	8,118	1.99%
4.	Licenses, Permits and Rents	2,400	2,200	2,400	0	0.00%
5.	Government Grants	0	11,385	201,657	201,657	100.00%
6.	Other	0	0	0	0	0.00%
7.	Transfer from Reserves	0	0	110,843	110,843	100.00%
8.	**Total Revenue**	411,312	301,363	731,930	320,618	77.95%
9.	**Expense**					
10.	Remuneration	0	0	0	0	0.00%
11.	Inter Departmental Transfer	704	0	704	0	0.00%
12.	Communications	5,450	2,949	5,600	150	2.75%
13.	Professional and Consulting Fees	158,569	174,051	193,700	35,131	22.15%
14.	Water System Operations	91,454	74,553	92,845	1,391	1.52%
15.	Transfer to Reserves	155,135	0	126,582	-28,553	-18.41%
16.	Transfer to Capital	0	-2,543	312,500	312,500	
17.	**Total Expense**	411,312	249,009	731,930	8,118	1.97%
18.	**TOTAL WATER SYSTEM**	**0**	**-52,354**	**0**	**0**	**0.00%**
19.	**SOLID WASTE AND FACILITIES MANAGEMENT**					
20.	**Revenue**					
21.	User Charges	401,382	284,490	420,377	18,995	4.73%
22.	Government Grants	487,962	246,991	487,962	0	0.00%
23.	Other	0	0	0	0	0.00%
24.	Transfer from Reserves	115,000	0	0	-115,000	-100.00%
25.	**Total Revenue**	1,004,344	531,481	908,339	-96,005	-9.56%
26.	**Expense**					
27.	Remuneration	375,660	378,335	396,163	20,503	5.46%
28.	Benefits	127,740	65,343	127,506	-234	-0.18%
29.	Inter Departmental Transfer	132,606	131,692	132,606	0	0.00%
30.	Memberships, Training and Travel	3,178	1,526	3,925	747	23.51%
31.	Communications	15,832	9,687	13,056	-2,776	-17.53%
32.	Professional and Consulting Fees	91,100	61,770	96,000	4,900	5.38%
33.	Solid Waste Management Operations	2,239,540	1,810,107	2,301,393	61,853	2.76%
34.	Transfer to Capital	115,000	-219,794	0	-115,000	-100.00%
35.	Transfer to Reserves	40,000	105,591	40,000	0	0.00%
36.	**Total Expense**	3,140,655	2,344,257	3,110,649	-30,007	-0.96%
37.	**TOTAL SOLID WASTE MANAGEMENT**	**2,136,312**	**1,812,777**	**2,202,310**	**65,998**	**3.09%**
38.	**Total Environmental Services**	**2,136,312**	**1,760,423**	**2,202,310**	**65,998**	**3.09%**

Explanation of Significant Variances	
Line 5	Green Funding (ICIP) for SCADA
Line 13	Utilities Kingston Fees
Line 21	Tipping Fees/ Bagtag Revenue
Line 33	Garbage/Recycling contracts

TOWNSHIP OF SOUTH FRONTENAC
2024 Final Budget

Parks, Recreation and Cemeteries Detail

		Actuals			2023-2024 Budget	
		2023 Budget	27-Nov-23	2024 Budget	Variance	
		$	$	$	$	%
1.	**PARKS AND RECREATION PROGRAMS**					
2.	**Revenue**					
3.	User Charges	71,650	143,546	165,950	94,300	131.61%
4.	Government Grants	8,000	8,000	8,000	0	0.00%
5.	Donations	0	28,851	6,725	6,725	100.00%
6.	Other	2,500	0	0	-2,500	-100.00%
7.	Transfers From Reserves/Reserve Funds	70,000	0	30,000	-40,000	-57.14%
8.	**Total Revenue**	152,150	180,397	210,675	58,525	38.47%
9.	**Expense**					
10.	Remuneration	247,492	231,268	413,160	165,668	66.94%
11.	Benefits	50,855	76,100	83,718	32,862	64.62%
12.	Inter Departmental Transfer	2,582	131	2,582	0	0.00%
13.	Memberships, Training and Travel	17,050	7,955	17,850	800	4.69%
14.	Communications	27,600	27,602	29,785	2,185	7.92%
15.	Professional and Consulting Fees	200	234	300	100	0.00%
16.	Parks and Recreation Programs - Operations	157,926	184,939	180,661	22,735	14.40%
17.	Grants	0	0	0	0	0.00%
18.	Transfer to Capital	70,000	43,656	30,000	-40,000	-57.14%
19.	Transfer to Reserves	0	7,715	0	0	0.00%
20.	**Total Expense**	573,705	579,601	758,055	184,350	32.13%
21.	**TOTAL PARKS AND RECREATION PROGRAMS**	**421,555**	**399,204**	**547,380**	**125,825**	**29.85%**
22.	**PARKS AND RECREATION FACILITIES**					
23.	**BUILDINGS**					
24.	**Revenue**					
25.	User Charges	1,000	0	1,000	0	0.00%
26.	Licenses, Permits and Rents	13,200	10,015	9,310	-3,890	-29.47%
27.	Government Grants	0	42,231	0	0	0.00%
28.	Grants from Other Municipalities	0	0	0	0	0.00%
29.	Donations/Contributions	0	0	0	0	100.00%
30.	Transfer from Reserves	215,000	0	455,000	240,000	111.63%
31.	**Total Revenue**	229,200	52,246	465,310	236,110	103.01%
32.	**Expense**					
33.	Remuneration	0	48,270	0	0	0.00%
34.	Benefits	0	0	0	0	0.00%
35.	Inter Departmental Transfer	9,504	15,582	9,504	0	0.00%
36.	Communications	835	685	900	65	7.78%
37.	Professional and Consulting Fees	5,090	3,054	8,365	3,275	64.34%
38.	Building Operations	196,693	156,121	234,161	37,468	19.05%
39.	Transfer to Capital	98,000	144,771	464,000	366,000	373.47%
40.	**Total Expense**	310,123	368,482	716,931	406,808	131.18%
41.	**TOTAL BUILDINGS**	**80,923**	**316,236**	**251,621**	**170,698**	**210.94%**

TOWNSHIP OF SOUTH FRONTENAC
2024 Final Budget

Parks, Recreation and Cemeteries Detail

		Actuals			2023-2024 Budget	
		2023 Budget	27-Nov-23	2024 Budget	Variance	
		$	$	$	$	%
42.	**PARKS**					
43.	**Revenue**					
44.	User Charges	2,000	2,946	3,000	1,000	50.00%
45.	Licenses, Permits and Rents	0	284	270	270	100.00%
46.	Government Grants	0	0	0	0	0.00%
47.	Donations/Contributions	0	10,000	0	0	0.00%
48.	Other	0	0	0	0	0.00%
49.	Transfer from Reserves	148,500	0	1,124,000	975,500	656.90%
50.	**Total Revenue**	150,500	13,231	1,127,270	976,770	649.02%
51.	**Expense**					
52.	Remuneration	11,000	50,856	843	-10,157	-92.33%
53.	Benefits	0	308	323	323	100.00%
54.	Inter Departmental Transfer	29,883	43,335	29,883	0	0.00%
55.	Professional and Consulting Fees	4,285	1,637	5,500	1,215	28.35%
56.	Parks Operations	149,896	126,165	193,016	43,120	28.77%
57.	Transfer to Capital	368,500	1,088,448	1,115,000	746,500	202.58%
58.	**Total Expense**	563,564	1,310,749	1,344,566	781,002	138.58%
59.	**TOTAL PARKS**	**413,064**	**1,297,519**	**217,296**	**-195,768**	**-47.39%**
60.	**ARENA**					
61.	**Revenue**					
62.	User Charges	0	0	0	0	0.00%
63.	Transfer from Reserves	0	0	0	0	100.00%
64.	**Total Revenue**	0	0	0	0	100.00%
65.	**Expense**					
66.	Remuneration	0	200	250	250	100.00%
67.	Transfer to Others	141,381	141,381	140,985	-396	-0.28%
68.	Transfer to Reserves	0	0	0	0	0.00%
69.	**Total Expense**	141,381	141,581	141,235	-146	-0.10%
70.	**TOTAL ARENA**	**141,381**	**141,581**	**141,235**	**-146**	**-0.10%**
71.	**TOTAL PARKS AND RECREATION FACILITIES**	**635,368**	**1,755,336**	**610,152**	**-25,216**	**-3.97%**
72.	**TOTAL PARKS AND RECREATION**	**1,056,923**	**2,154,540**	**1,157,531**	**100,608**	**9.52%**
73.	**CEMETERIES**					
74.	**Revenue**					
75.	User Charges	40,200	18,308	40,200	0	0.00%
76.	Investment Income	14,000	17,503	14,000	0	0.00%
77.	Donations	0	0	0	0	100.00%
78.	Transfer From Reserves	0	0	0	0	100.00%
79.	**Total Revenue**	54,200	35,811	54,200	0	0.00%
80.	**Expense**					
81.	Cemetery Operations	70,934	81,589	71,360	426	0.60%
82.	Transfer to Capital	0	0	0	0	100.00%
83.	Transfer to Reserves	0	0	0	0	100.00%
84.	**Total Expense**	70,934	81,589	71,360	426	0.60%
85.	**TOTAL CEMETERIES**	**16,734**	**45,778**	**17,160**	**426**	**2.54%**
86	**Total Parks, Recreation and Cemeteries**	**1,073,657**	**2,200,318**	**1,174,691**	**101,034**	**9.41%**

Explanation of Significant Variances

Line 3	Swim/ Daycamp Program Fees
Line 10/11	Recreation Program Staffing/ LEO Facilities
Line 16	Swim /Day Camp and Events
Line 38	Recreation Facilities Maintenance and Insurance
Line 56	Parks Maintnance/ Tree Planting in Parks

TOWNSHIP OF SOUTH FRONTENAC
2024 Final Budget

Development Services

		Actuals		2023-2024 Budget	
		2023 Budget	27-Nov-23	2024 Budget	Variance
		$	$	$	$	%
1.	**Development Services**					
2.	**Revenue**					
3.	User Charges	175,000	146,669	328,000	153,000	87.43%
4.	Government Grants	0	0	0	0	0.00%
5.	Grants from Other Municipalities	0	0	0	0	0.00%
6.	Transfer from Reserves	229,900	0	145,000	-84,900	-36.93%
7.	**Total Revenue**	404,900	146,669	473,000	68,100	16.82%
8.	**Expense**					
9.	Remuneration	448,925	376,967	530,011	81,086	18.06%
10.	Benefits	151,753	123,478	177,292	25,539	16.83%
11.	Inter Departmental Transfer	0	0	0	0	0.00%
12.	Memberships, Training and Travel	30,000	13,555	49,400	19,400	64.67%
13.	Communications	7,445	8,116	8,315	870	11.68%
14.	Professional and Consulting Fees	37,200	4,624	37,200	0	0.00%
15.	Operations	62,634	50,358	75,746	13,111	20.93%
16.	Transfer to Capital	229,900	171,515	145,000	-84,900	-36.93%
17.	Transfer to Reserves	0	0	0	0	0.00%
18.	**Total Expense**	967,858	748,614	1,022,964	55,106	5.69%
19.	**TOTAL Planning and Development**	**562,958**	**601,945**	**549,964**	**-12,994**	**-2.31%**

Explanation of Significant Variances	
Line 3	Revised Planning Fees - 2023
Line 9-10	Annualized cost for Development Services Positions
Line 12	Committee of Adjustment Mileage
Line 15	Computer Replacements

Township of South Frontenac
2024 Capital Budget with Financing

Detailed Sheet page #	Project #	Project *	2024 Budget	Development Charges	Community Building Fund (formerly Federal Gas Tax)	Parkland	Working Funds	Asset Invesment Reserve	Infrastructure	Facilities	Fire Equipment	Public Services Equipment	Building Equipment	Building	Landfill Closure	Climate Change Reserve	Sydenham Water Reserve	OPP Reserve	Wages-Fire Department (Stabilization)	Taxation	Other	Notes
1		**CORPORATE SERVICES**																				
2	22-02	Gateway Signage (2022-2025 Project)	53,333				53,333															
3	23-12	Wayfinding Sign Fabrication and Installation (2022-2025 Project)	266,667				186,667														80,000	Red Grant Program - 186k *3 + 80k * 3 grant =
4	24-01	Website Redesign	33,190				33,190															
5	24-03	Cloud Server	85,000				85,000															
6	24-04	Records Management	100,000				100,000															
7	24-05	14 Island Lake Dam Refurbishment	200,000				200,000															
		subtotal	***738,190***	***0***	***0***	***0***	***658,190***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***80,000***	***0***
8		**FIRE**																				
9	24-11	Hoses and Appliances	18,000								18,000											
10	24-12	Electric Portable Fans	30,000								30,000											
11	24-13	Vehicle Replacement - Deputy Fire Chief	75,000								75,000											
12	24-14	Pumper Replacement	550,000								550,000											
13	24-15	Gas Detectors & Docking Stations	40,000								40,000											
14	24-16	Mobile Gear Racks - Station 5 & 7	18,000								18,000											
15	24-17	Specialized Equipment for Squads	20,000								20,000											
16	24-18	Radio Communications Study	10,000																	10,000		
		subtotal	***761,000***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***751,000***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***10,000***	***0***	***761,000***
		PUBLIC SERVICES																				
17		**FLEET**																				
18	24-21	Tandem Plow Truck	430,000									430,000										
19	24-22	Tandem Roller-Pro Truck	625,000									625,000										
20	24-23	Two (2) 1-Ton Trucks with plow and sander attachments	230,000									230,000										
21	24-24	1-Ton Truck with Dump Box and power lift	120,000									120,000										
22	24-25	Front Broom Attachment	40,000																	40,000		
23	24-26	AVL - Light Duty Installs	20,000																	20,000		
		subtotal	***1,465,000***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***1,405,000***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***60,000***	***0***	***1,465,000***
24		**ROADS INFRASTRUCTURE**																				
25	21-R09	Arterial Reserve (Road 38 - Reserve Transfer)	2,450,000																	2,450,000		
26	24-31	Perth Road Reconstruction (at Loughborough Lake)	520,000		495,000			25,000														County FGT
27	24-32	Microsurfacing - Bellrock Road	495,000					495,000														
28	24-33	Orser Road	157,500	157,500																		
29	24-34	Spooner Road	64,100	64,100																		
30	24-35	Bedford Road	1,432,000	500,000					530,648												401,352	OCIF
31	24-36	Ormsbee Road	819,100		819,100																	
32	24-37	Greenfield Road	215,900		215,900																	
33	24-38	Kerr Road	161,500	161,500																		
34	24-39	Tom Watson Road	124,400	124,400																		
35	24-43	Devil Lake Road	346,600	346,600																		
36	24-40	Surface Treatment (LCB) Preservation	900,000					400,000													500,000	OCIF
38	22-17	12th Con Bridge (B32) Repair	38,500					38,500														
39	24-44	Sydenham Lake Bridge and Dam	534,000					179,500	354,500													
40	24-45	Bracken Culvert (Yarker Road)	527,200	527,200																		
41	24-46	Long Swamp Bridge Study	35,000					35,000														
42	23-49	Transportation Master Plan	75,000	75,000																		
43	24-41	Pre-Engineering Roads 2025	75,000					75,000														
44	24-47	Road 38 Detailed Design	100,000	100,000																		
45	23-51	Pleasant Valley Municipal Drain	18,750																	18,750		
		subtotal	***9,089,550***	***2,056,300***	***1,530,000***	***0***	***0***	***1,248,000***	***885,148***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***2,468,750***	***901,352***	***9,089,550***
46		**SYDENHAM WATER**																				
47	22-53	SCADA Software Upgrade	275,000														73,343				201,658	ICIP Grant Funding
48	24-61	Sydenham Drinking Water System Upgrades	37,500														37,500					
		subtotal	***312,500***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***110,843***	***0***	***0***	***0***	***201,658***	***312,500***
49		**FACILITIES**																				
50	24-02	Town Hall Expansion	3,500,000				485,000	2,765,000		250,000												
51	24-51	Storrington Centre Roof and Parking Lot Upgrades	435,000							435,000												
52	24-52	Bedford Garage Equipment Upgrades	48,500							48,500												
53	24-54	Keeley Patrol Yard Waste Oil Disposal	25,000							25,000												
54	24-55	Sydenham Point Accessible Washroom Upgrades	30,000							30,000												
55	24-56	Centennial Park New Accessible Washrooms Design and Build	30,000	30,000																		
56	24-57	Centennial Park Renovations to existing Canteen/Washrooms	150,000							150,000												
57	24-58	Harris Park Hall Flooring Replacement	29,000							29,000												
58	24-59	Glendower Hall Interior Design Plans	20,000	20,000																		
59	24-82	Station 5 Exterior Upgrades	15,000							15,000												
60	24-83	Station 4 Flooring	8,000							8,000												
		subtotal	***4,290,500***	***50,000***	***0***	***0***	***485,000***	***2,765,000***	***0***	***990,500***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***4,290,500***
61		**RECREATION**																				
62	24-60	Sydenham Point Field Score clock Power	10,000			10000																
63	24-66	Centennial Park Walkway Connections	240,000	240,000																		
64	24-80	Centennial Park Courts and Electrical Improvements	49,000			49,000																
65	24-67	McMullen Park - Parking Lot paving & storage bunker	46,000			46000																
66	24-75	McMullen Park Beach and Washroom Building Upgrades	16,000			16,000																
67	24-68	Keeley/Bowes Diamond Upgrades	208,000	208,000																		
68	24-69	Glendower Court Basketball nets	11,000			11000																
69	24-70	Bellrock & Petworth Parkette Conceptual Design	15,000			15,000																

Township of South Frontenac
2024 Capital Budget with Financing

Detailed Sheet page #	Project #	Project *	2024 Budget	Development Charges	Community Building Fund (formerly Federal Gas Tax)	Parkland	Working Funds	Asset Invesment Reserve	Infrastructure	Facilities	Fire Equipment	Public Services Equipment	Building Equipment	Building	Landfill Closure	Climate Change Reserve	Sydenham Water Reserve	OPP Reserve	Wages-Fire Department (Stabilization)	Taxation	Other	Notes
70	24-71	Petworth Mill wall cap and repairs	200,000			200,000																
71	24-72	Shipyards Boat Ramp Rehabilitation	110,000			110,000																
72	24-74	New Picnic Tables	10,000			10,000																
		subtotal	***915,000***	***448,000***	***0***	***467,000***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***915,000***
73		**DEVELOPMENT SERVICES**																				
74	24-76	Economic Development Strategy	50,000				50,000															
75	24-77	Replacement Building Vehicle	50,000										50,000									
76	24-78	Development Charge Study and Population Study	95,000	95,000																		
		subtotal	***195,000***	***95,000***	***0***	***0***	***50,000***	***0***	***0***	***0***	***0***	***0***	***50,000***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***195,000***
		Total	**17,766,740**	**2,649,300**	**1,530,000**	**467,000**	**1,193,190**	**4,013,000**	**885,148**	**990,500**	**751,000**	**1,405,000**	**50,000**	**-**	**-**	**-**	**110,843**	**-**	**-**	**2,538,750**	**1,183,010**	***17,766,740***

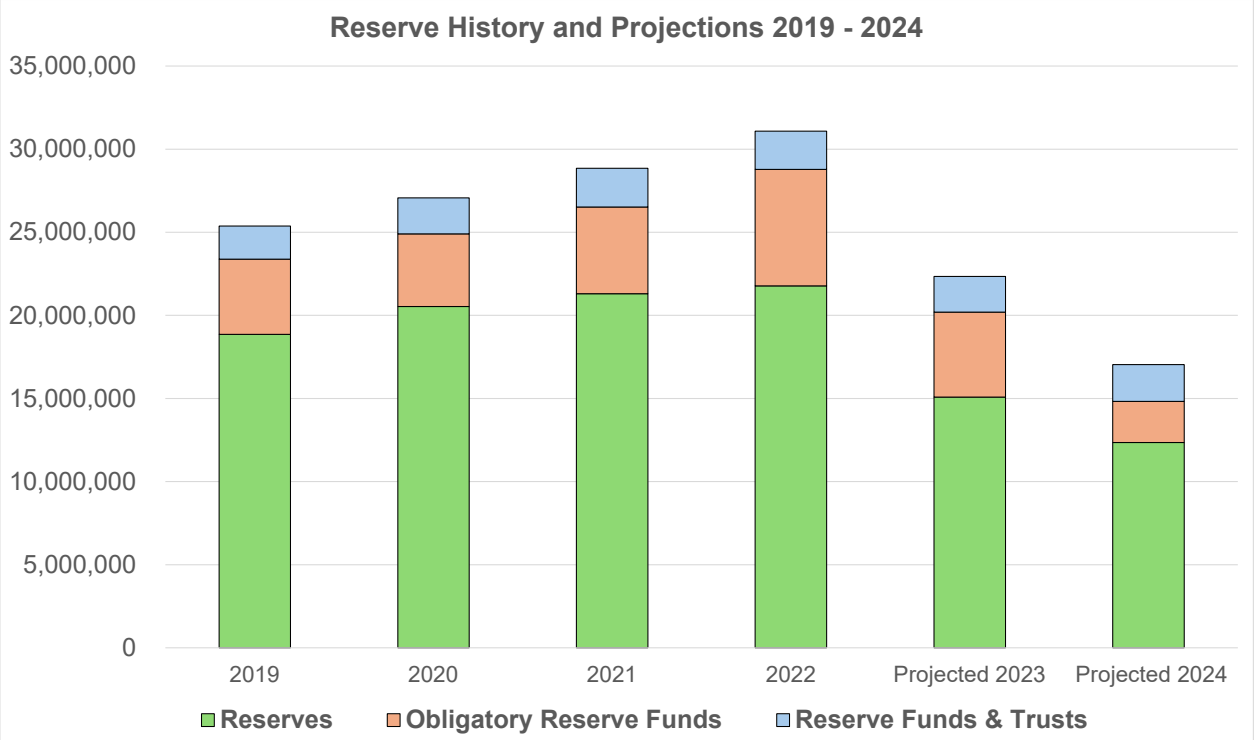
RESERVES & RESERVE FUNDS FORECAST - 2024 Final Budget

	PROJECTED BALANCE	*2024 Budgeted Expenditures*		*Contribution to Reserve in 2024 Budget*		*PROJECTED BALANCE*
	END OF YEAR -2023	*CAPITAL FUND*	*REVENUE FUND*	*TAXATION BDGTD*	*OTHER REVENUES*	*END OF YEAR -2024*
RESERVES & RESERVE FUNDS FORECAST - 2024 Budget Final						
Fiscal						
Working Funds	2,590,558	1,193,190	146,040	473,320		1,724,648
COVID/ Safe Restart	209,515					209,515
Council - Accessibiilty	10,000			10,000		20,000
Equipment and Infrastructure						
General						
Asset Investment Reserve	1,789,772	4,013,000		2,329,595		106,367
Infrastructure	613,023	885,148		275,000		2,875
Climate Change	0					
Vertical						0
Facilities/Property	888,121	990,500		195,000		92,621
Recreation	12,813					12,813
Rolling						0
Capital - Building Department	26,741	50,000		40,000		16,741
Capital - Fire Department	547,546	751,000		452,182		248,728
Capital - Roads Department	857,633	1,405,000		604,118		56,751
Capital - Solid Waste Dept	51,000					51,000
Linear						0
Cemetery Lot Addition	43,538					43,538
Roads - Const/Imp	1,920,000			2,450,000		4,370,000
Stabilization						
Wages-Fire Department	212,641		91,021			121,620
Building Department	1,824,955		40,000			1,784,955
Part 8 Septic	0					0
Policing Costs	740,880			112,574		853,454
Winter Control - Roads Dept.	819,847					819,847
Recycling	273,641					273,641
Planning	66,784					66,784
Revenue-Severance Appl.	20,000					20,000
Water Reserve Fund	1,562,158	110,843				1,451,315
Sub-total	*15,086,165*	*9,398,681*	*277,061*	*6,941,789*	*0*	*12,352,212*
OBLIGATORY RESERVE FUNDS						
5% Parkland	284,218	467,000			350,000	167,218
Development Charges	2,790,741	2,649,300			1,342,110	1,483,551
Environmental Enhancement	150,919					150,919
Community Building Fund (formerly Federal Gas Tax)	1,017,645	1,530,000			1,112,072	599,717
Subdivider Contributions	37,171					37,171
Ontario Community Infrastruct	796,527	1,697,879			901,352	0
Cannabis Legalization Fund-C	42,740					42,740
Sub-total	*5,119,960*	*6,344,179*	*0*	*0*	*3,705,534*	*2,481,315*
RESERVE FUNDS & TRUSTS						
Election	55,429			25,000		80,429
Highway #38 Reconstruction	927,391					927,391
Landfill Closure	379,797			40,000		419,797
Trusts	0					0
Fire Donations	22,029					22,029
Portland Historical	28,001					28,001
Grant Memorial	27,526					27,526
OHRP	4,175					4,175
Cemetery - PC	565,671					565,671
Cemetery M. Burns Trust	25,000					25,000
Cemetery - Monument PC	77,758					77,758
Cemetery - Monument PC Inc	31,542					31,542
Sub-total	*2,144,319*	*0*	*0*	*65,000*	*0*	*2,209,319*
TOTAL	**22,350,444**	**15,742,860**	**277,061**	**7,006,789**	**3,705,534**	**17,042,846**

RESERVES & RESERVE FUNDS FORECAST - 2024 Budget

	BALANCE 2019 YE Balance (F/S)	BALANCE 2020 YE Balance (F/S)	BALANCE 2021 YE Balance (F/S)	BALANCE 2022 YE Balance (F/S)	PROJECTED BALANCE END OF YEAR - 2023 (Budget + Actuals)	PROJECTED BALANCE END OF YEAR -2024 (Budget)
Fiscal						
Working Funds*	6,432,386	5,871,207	3,002,212	5,071,366	2,590,558	1,724,648
COVID/ Safe Restart	0	0	351,592	219,515	209,515	209,515
Council - Accessibiilty					10,000	20,000
Equipment and Infrastructure						
General						
Asset Investment Reserve	3,643,788	4,476,658	5,186,132	3,213,153	1,789,772	106,367
Infrastructure	2,488,608	2,279,021	2,396,403	2,051,620	613,023	2,875
Vertical						0
Facilities/Property	1,177,570	1,246,512	1,357,302	1,413,753	888,121	92,621
Recreation	12,813	12,813	12,813	12,813	12,813	12,813
Rolling						0
Capital - Building Department	79,125	7,603	1,741	41,741	26,741	16,741
Capital - Fire Department	900,778	825,451	1,202,874	875,285	547,546	248,728
Capital - Roads Department	871,810	1,179,742	1,702,765	1,765,662	857,633	56,751
Capital - Solid Waste Dept	51,000	51,000	51,000	51,000	51,000	51,000
Linear						0
Cemetery Lot Addition	43,538	43,538	43,538	43,538	43,538	43,538
Roads - Const/Imp	0	700,000	1,100,000	1,650,000	1,920,000	4,370,000
Stabilization						
Wages-Fire Department	133,693	269,797	311,188	344,477	212,641	121,620
Building Department**	906,863	895,589	1,142,269	1,747,071	1,824,955	1,784,955
Policing Costs	728,249	683,249	648,249	648,249	740,880	853,454
Winter Control - Roads Dept.	0	390,021	1,130,688	819,847	819,847	819,847
Recycling	273,641	273,641	273,641	273,641	273,641	273,641
Planning	66,784	66,784	66,784	66,784	66,784	66,784
Revenue-Severance Appl.	20,000	20,000	20,000	20,000	20,000	20,000
Water Reserve Fund	1,026,014	1,243,116	1,301,496	1,442,731	1,562,158	1,451,315
Sub-total	*18,856,660*	*20,535,740*	*21,302,687*	*21,772,245*	*15,081,165*	*12,347,212*
OBLIGATORY RESERVE FUNDS						
5% Parkland	248,262	199,777	247,820	170,112	284,218	167,218
Development Charges	2,701,141	2,789,371	2,907,788	3,180,461	2,790,741	1,483,551
Environmental Enhancement	144,168	147,169	150,919	150,919	150,919	150,919
Community Building Fund (formerly Federal Gas Tax)	1,359,796	1,157,995	1,828,086	2,630,894	1,017,645	599,717
Subdivider Contributions	37,171	37,171	37,171	37,171	37,171	37,171
Ontario Community Infrastructure (OCIF)	0	0	0	796,527	796,527	0
Cannabis Legalization Fund-OCLIF	37,109	37,533	42,740	42,740	42,740	42,740
Sub-total	*4,527,647*	*4,369,016*	*5,214,523*	*7,008,823*	*5,119,960*	*2,481,315*
RESERVE FUNDS & TRUSTS						
Election	31,739	57,389	82,841	30,429	55,429	80,429
Highway #38 Reconstruction	839,249	892,623	927,391	927,391	927,391	927,391
Landfill Closure	426,307	500,956	564,797	562,267	379,797	419,797
Trusts					0	0
Fire Donations	18,252	19,013	21,386	22,029	22,029	22,029
Portland Historical	14,970	19,877	27,547	28,001	28,001	28,001
Grant Memorial	26,406	26,736	26,940	27,526	27,526	27,526
OHRP	4,175	4,175	4,175	4,175	4,175	4,175
Cemetery - PC	512,901	525,151	549,705	565,671	565,671	565,671
Cemetery M. Burns Trust	25,000	25,000	25,000	25,000	25,000	25,000
Cemetery - Monument PC	68,108	70,558	73,058	77,758	77,758	77,758
Cemetery - Monument PC Inc	25,878	27,754	29,237	31,542	31,542	31,542
Sub-total	*1,992,985*	*2,169,232*	*2,332,077*	*2,301,789*	*2,144,319*	*2,209,319*
TOTAL	**25,377,292**	**27,073,988**	**28,849,287**	**31,082,857**	**22,350,444**	**17,042,846**

* Includes Climate Change
** Includes Part 8 Septic



2024 Tax Impact if not funded from Reserves		Tax Rate Increase
Net Levy to be funded Taxation	22,474,275	2.74%
Total Funding from Reserves for Operations & Capital (Excludes OCIF & CCBF)	12,792,042	
Total Required to be Raised if no Reserves	35,266,317	61.22%

Township of South Frontenac
Staff Report

To:	Council
Prepared by:	Corporate Services Department
Date of Meeting:	December 19, 2023
Subject:	**Asset Retirement Obligations (ARO) Report**

Summary

This report provides a summary of recent changes to reporting standards issued by the Public Sector Accounting Board (PSAB) requiring municipalities to identify, measure and report certain costs associated with asset retirement.

Recommendation

That Council approves the Asset Retirement Obligation Policy presented with this report that establishes guidelines to ensure compliance with the new standard PSAB PS 3280.

Background

The Public Sector Accounting Board, an independent body created to develop accounting standards for municipalities, has further strengthened municipal asset management practices with the development of a new standard. This new standard, PS 3280 Asset Retirement Obligations, requires municipalities across Canada to recognize costs associated with the retirement of assets for the fiscal year end December 31, 2023.

An asset retirement obligation is “a legal obligation associated with the retirement of a tangible capital asset” and arises when there is a legal obligation to retire an asset from service. Asset retirement is defined as removing a capital asset from service and includes sale transactions, asset abandonment, and asset disposal. These costs may include, but are not limited to decommissioning, dismantling, and remediation of tangible capital assets and meeting any legislative mandates around environmental cleanup and/or restoring assets to their original condition.

Discussion/Analysis

Municipalities need to approve an Asset Retirement Obligations Policy and incorporate the associated financial obligations into their financial statements beginning in the 2023 fiscal year. The asset retirement obligations should be capitalized and amortized, allocating the

future costs of retirement in a rational and systematic manner over the remaining life of the asset.

The recognition of the liability for future costs associated with the retirement of certain assets will ensure that funds will be available for the full cost of the asset disposal at the end of its useful life.

While this standard is new, the practice is not entirely new as municipalities do currently recognize the environmental obligations associated with liabilities for contaminated sites and solid waste facilities. The intent of this new standard is to expand the requirements to other existing assets which have costs associated with their disposal because of a legal obligation.

Some examples of when a legal obligation may exist include:

- Assets that require compliance with standards and regulations that, if sold, disposed of, or no longer in use, would require remediation, such as asbestos in buildings and in-ground piping, fuel storage tank removal, wells, firewater holding tanks, and septic beds;
- Leases that require removal of leasehold improvements or other remediation at the end of the lease, such as the reforestation of land subject to a timber lease;
- Land covenants that require removal at the end of their useful life; and
- Assets that need to be returned to their natural state at the end of their useful life, such as mining activities and landfills.

It is important that asset retirement obligations are reported correctly in the financial statements otherwise municipalities will risk having an adverse or qualified opinion on their financial statements.

Process to Implement:

The Treasurer or designate will work with all Department Heads to review assets to identify assets with retirement obligations. These assets will be reviewed with ARO Policy requirements to determine whether a financial liability, in accordance with PS 3280 exists. If there is a financial liability staff will work to estimate the liability value and record the necessary entries into the accounting records. In addition, the Treasurer or designate will ensure that the asset retirement obligations are recorded into the asset management software for tracking purposes. The value of the retirement obligation will be reviewed on a yearly basis.

External Agencies Impacting Financial Statements

The South Frontenac financial statements include consolidations from The Frontenac Arena. The new standard will also apply to that entity. Staff and the Township's auditors will be required to ensure that these entities have appropriately captured their asset retirement obligations and a proportionate share will be consolidated into the South Frontenac Financial Statements.

Financial Implications

A future report will be prepared for Council to outline the assets which have retirement obligations and the estimated costs of the retirement costs.

It is not anticipated that there will be a significant impact on the Township's financial position as a result of recognizing asset retirement obligations.

Relationship to Strategic Plans

☒ Not applicable to this report.

☒ This initiative is supported by the following priorities of the 2019-2022 Strategic Plan.

- Priority: Choose an item.

Climate Considerations

☒ Not applicable to this report.

Notice/Consultation

- Auditors – KPMG LLP
- Other Municipalities in the County of Frontenac

Attachments

1. Draft Asset Retirement Obligations Policy

Approvals

Submitted By: Jesse Collins, Acting Deputy Treasurer

Approved By: Shelley Stedall

Shelley, Stedall
Director of Corporate Services & Treasurer

Approved By:

Louise Fragnito, COA, CGA
Chief Administrative Officer

	Township Of South Frontenac	
SOUTH FRONTENAC	Section: Finance & Treasury	Policy Number: CS-2023-01
	Sub-section: Asset Management	Effective Date: January 1, 2023
	Subject: Asset Retirement Obligations Policy	Revision Date:
		Prepared by: Jesse Collins, Acting Deputy Treasurer & Approved by Shelley Stedall, Director of Corporate Services & Treasurer

Corporation of the Municipality of South Frontenac
Municipal Asset Retirement Obligations Policy

Contents

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Appendix A 6

Introduction

1.1 Recent changes to reporting standards by the Public Sector Accounting Board (PSAB) requires municipalities to identify, measure, and report certain costs associated with asset retirement.

Municipalities must prepare an Asset Retirement Obligation Policy that establishes guidelines to ensure compliance with the new standard PSAB 3280 – Asset Retirement Obligations.

2. Policy Statement

2.1 A policy governing the recording of qualifying Asset Retirement Obligations (AROs) under Public Sector Accounting Board (PSAB) Section 3280.

3. Purpose

3.1 To document processes by which asset retirement obligations will be recognized, measured, updated, and integrated into existing processes, and related roles and responsibilities.

4. Scope

4.1 This Policy applies to all departments, boards, and agencies included in the financial reporting of The Corporation of the Township of South Frontenac (South Frontenac), that possess assets with asset retirement obligations including:

a) Assets with legal title held by South Frontenac;
b) Assets controlled by South Frontenac;
c) Assets reported in any entities that are consolidated with South Frontenac for financial statement purposes; and
d) Assets that have not been capitalized or recorded as tangible capital assets for financial statement purposes.

The entity that is currently consolidated with South Frontenac currently includes:

a) Frontenac Community Arena.

4.2 Scope of applicability is detailed in a decision tree which is attached to this Policy as Appendix A.

5. Legislative Authority

5.1 *Municipal Act, 2001, S.O. 2001, c. 25 (Municipal Act)*

6. Definitions

6.1 **Accretion expense** is the increase in the carrying amount of the liability for asset retirement obligations due to the passage of time.

Asset retirement activities include all activities related to an asset retirement obligation. These may include, but are not limited to:

a) decommissioning or dismantling a tangible capital asset that was acquired, constructed or developed;
b) remediation of contamination of a tangible capital asset created by its normal use;
c) post-retirement activities such as monitoring; and
d) constructing other tangible capital assets to perform post-retirement activities.

Asset retirement cost is the estimated amount required to retire a tangible capital asset.

Asset retirement obligation is a legal obligation associated with the retirement of a tangible capital asset.

Productive use means the tangible capital asset is held for use in the production or supply of goods and services, for rental to others, for administrative purposes, or for the development, construction, maintenance, or repair of other tangible capital assets.

Promissory estoppel is defined in *Black's Law Dictionary* as "the principle that a promise made without consideration may nonetheless be enforced to prevent injustice if the promisor should have reasonably expected the promisee to rely on the promise and the promisee did actually rely on the promise to his or her detriment."

Retirement of a tangible capital asset is the permanent removal of a tangible capital asset from service. This term encompasses sale, abandonment, or disposal in some other manner but not its temporary idling.

7. Administration and Accountability

7.1 Departments Heads are required to:

a) Communicate to the Treasurer any retirement obligations, and any changes in asset condition or retirement timelines;
b) Assist in the preparation of cost estimates for retirement obligations and are responsible for providing cost-effective projections of asset retirement obligations, by consulting with engineers, technicians, and others familiar with the assets and conditional assessments, collecting the relevant information required to minimize service cost, and providing the information to the Treasurer for processing; and
c) Inform the Treasurer of any legal or contractual obligations at the inception of any such obligation.

7.2 The Treasurer is responsible for the development of and adherence to policies for the accounting and reporting of asset retirement obligations in accordance with Public Sector Accounting Board PS 3280. This includes responsibility for:

a) Monitoring the application of this Policy;
b) Preparation and managing written processes within the accounting systems;
c) Investigating issues and working with asset stewards to resolve issues;
d) Ensuring asset management software reflects accurate asset retirement obligation costs; and
e) Reporting asset retirement obligations in the financial statements of South Frontenac and other statutory financial documents.

Reporting Requirements

8.1 The Treasurer shall, for each fiscal year, prepare annual financial statements for South Frontenac in accordance with Generally Accepted Accounting Principles (GAAP) for municipalities as recommended, from time to time, by the Public Sector Accounting Board of the Chartered Professional Accountants of Canada. This includes the reporting of ARO in the annual financial statements in accordance with PSAB PS 3280.

8. Guiding Principles

9.1 Existing provincial and federal laws and regulations require municipalities to take specific actions to retire certain tangible capital assets at the end of their useful lives. This includes activities such as the removal of asbestos and the retirement of landfills. Other obligations to retire tangible capital assets may arise from contracts, court judgments, or lease arrangements.

9.2 The legal obligations, including obligations created by promises made without formal consideration, associated with the retirement of tangible capital assets controlled by South Frontenac, will be recognized as a liability in the financial books of South Frontenac, in accordance with PSAB PS 3280 effective January 1, 2023.

9.3 Asset retirement obligations result from the acquisition, construction, development, or normal use of an asset. These obligations are predictable, likely to occur, and unavoidable. Asset retirement obligations are separate and distinct from contaminated site liabilities. The liability for contaminated sites normally results from unexpected contamination exceeding the environmental standards. Asset retirement obligations are not necessarily associated with contamination.

10. Recognition

10.1 A liability should be recognized when, as at the financial reporting date:

a) there is a legal obligation to incur retirement costs in relation to a tangible capital asset;
b) the past transaction or event giving rise to the liability has occurred;
c) it is expected that future economic benefits will be given up; and
d) a reasonable estimate of the amount can be made.

Liabilities for an asset retirement obligation cannot be recognized unless all of the criteria above are satisfied.

10.2 The estimate of the liability would be based on requirements in existing agreements, contracts, legislation, or legally enforceable obligations, and technology expected to be used in asset retirement activities.

10.3 The estimate of liabilities should include costs directly attributable to asset retirement activities. Costs would include post-retirement operation, maintenance, and monitoring which are an integral part of the retirement of the tangible capital asset.

10.4 Directly attributable costs would include, but are not limited to, payroll and benefits, equipment and facilities, materials, legal and other professional fees, and overhead costs directly attributable to the asset retirement activity.

10.5 Upon initial recognition of a liability for an asset retirement obligation, South Frontenac will recognize an asset retirement cost by increasing the carrying amount of the related tangible capital asset (or a component thereof) by the same amount as the liability. Where the obligation relates to an asset that is no longer in

service, and not providing economic benefit, or to an item not recorded by South Frontenac as an asset, the obligation is expensed upon recognition.

10.6 The capitalization thresholds applicable to the different asset categories will also be applied to the asset retirement obligations to be recognized within each of those asset categories.

11. Subsequent Measurement

11.1 The asset retirement costs will be capitalized and amortized allocating the future costs of the retirement in a rational and systematic allocation (straight-line method) over the useful life of the tangible capital asset or a component of the asset.

11.2 On an annual basis, the existing asset retirement obligations will be assessed for any changes in expected cost, term to retirement, or any other changes that may impact the estimated obligation. In addition, any new obligations identified will also be assessed.

12. Presentation and Disclosure

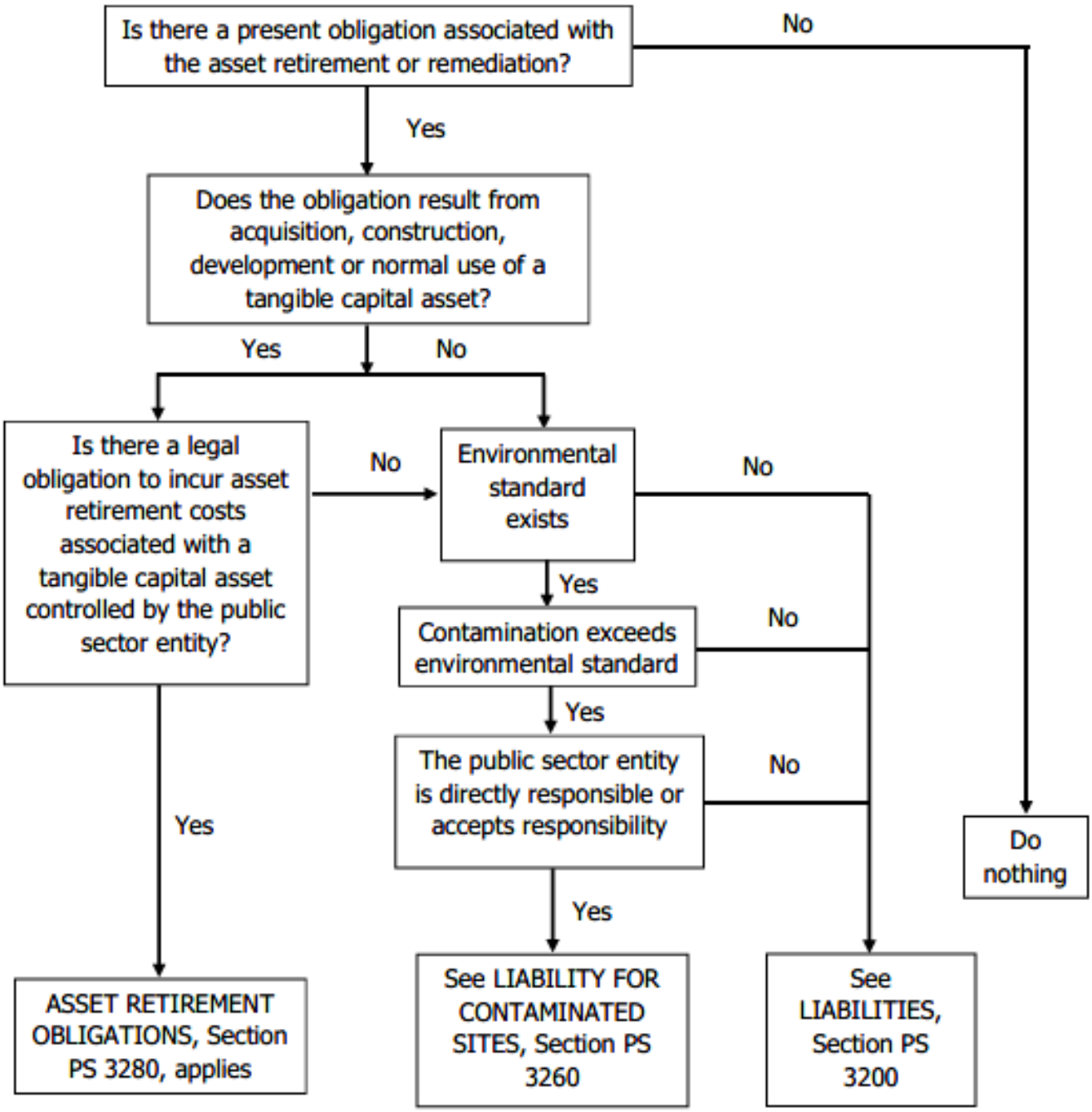
12.1 The liability for asset retirement obligations will be disclosed.

13. Policy Review

13.1 This policy will be reviewed every five years, or upon the direction of South Frontenac Council, or if staff identify an issue requiring a revision to occur.

Appendix A

Decision Tree – Scope of applicability



Township of South Frontenac

Staff Report

To:	Council
Prepared by:	Corporate Services Department
Date of Meeting:	December 19, 2023
Subject:	**Cloud Server Migration RFP**

Summary

This report provides information on the results of the procurement process for the Migration to a Cloud- Hosted Server Request for Proposal (RFP) and request support in the award of the contract.

Recommendation

That Council support awarding the Migration to a Cloud- Hosted Server contract in the amount of $85,104.74 including non-rebatable HST to IC 360 Solutions Inc.,

Background

The Township of South Frontenac currently has on-premise servers, which holds the data and software the Township needs in order to operate its business. Historically and in the future, the staff that use these systems have had to transition to remote locations. With the pending administration building renovations, not only staff but the server will need to be relocated. Staff are recommending that the data and software be moved to a Cloud hosted environment. This transformative project is also driven by the need to achieve greater flexibility, scalability, and cost-efficiency in managing the organization's IT resources while ensuring long-term reliability and security. In addition to infrastructure migration, the project includes modernizing SQL and Active Directory with Azure-based technologies.

Articles that help explain why this decision has been made are here:

https://ibistechnology.com/why-you-should-move-from-on-premise-to-cloud-computing/

https://www.bdo.ca/insights/erp-in-the-cloud-dispelling-common-myths-to-help-you-make-the-move

The issued RFP and project were developed with the Township's IT contracted staff at the County of Frontenac. The project includes moving all data and software from the current server to a hosted cloud as well as moving the Township's on-premise telephone system through standard phone lines to a Cloud-based Voice over Internet Protocol (VOIP) system.

Discussion/Analysis

On November 21, 2023, an RFP was issued to solicit from qualified Bidders to modernize the entirety of the current on-premises Information Technology infrastructure to a cloud hosted solution(s). The RFP closed on December 7, 2023.

Five submissions were received and evaluated by the Director of Corporate Services & Treasurer and the County of Frontenac Information Technology team. The results were as follows:

Name	Score	Price (incl. non-rebatable HST)
IC 360 Solutions Inc	96	85,104.74
ITI Canada Inc	88.25	98,422.08
Cloud4C Services	73.5	120,277.47
MTX Technologies Inc.	73.25	104,519.05
Levio Consiels Inc.	61	110,740.00

IC 360 provided the strongest proposal and demonstrated their previous experience with transitioning clients of the Township's size and complexity for the server move as well as the telephone service transition. The County IT staff have worked with IC 360 Solutions in the past and found them knowledgeable and completing projects within set deadlines and set budgets.

Interviews were completed with IC 360 Solutions, ITI Canada and MTX Technologies. Following this, references were contracted with IC 360 solutions to aid the evaluation team in making the recommendation.

Financial Implications

The 2024 budget includes $85,000 for this project, which brings in IC 360 solutions quote slightly higher by $104.74. The pricing includes licencing fees which may be lower once the system is implemented.

The change in telephone systems from the current hardline system to VOIP will result in a net zero increased in cost, as the new licencing for TEAMS voice is transitioned and the Bell costs are reduced as lines are cancelled.

Relationship to Strategic Plans

☐ Not applicable to this report.

☒ This initiative is supported by the following priorities of the 2019-2022 Strategic Plan.

- Priority: 3. Ensure the organizational capacity to deliver cost-effective services in a changing world.

Climate Considerations

☐ Not applicable.

Consultations

County of Frontenac IT Team

Approvals

Prepared By:

Shelley Stedall
Director of Corporate Services & Treasurer

Approved By:

Louise Fragnito, CPA, CGA
Chief Administrative Officer

Township of South Frontenac

Staff Report

To:	Council
Prepared by:	Office of the Chief Administrative Officer
Date of Meeting:	December 19, 2023
Subject:	**2024 Summer Student Compensation Change**

Summary

This report outlines the rationale for an increase to the Summer Student Compensation for 2024.

Recommendation

That Council provide approval for the Summer Student Wage Grid for 2024 itemized under Table 1 of the Staff Report.

Background

Each year, South Frontenac hires a dedicated group of summer students to assist with various projects, community recreational programs, and parks and roads maintenance. They play a crucial role in supporting our operations and contributing to the well-being of our community. While engaged in meaningful work with the Township, students develop new skills and gain experiences that are transferrable to their educational and career pursuits.

Historically, the Township has utilized the hourly minimum wage as a benchmark for Step 1 of the four-step student wage grid. On October 1, 2023, minimum wage was increased to $16.55 from $15.50 per hour. This represents a six percent (6%) increase.

Discussion/Analysis

Maintaining a competitive wage for our summer students will help us attract motivated and skilled students who are essential to the success of our summer programs and initiatives. This will also assist us in retaining experienced students who have made positive contributions in previous years, which in turn provides continuity and efficiency in our operations.

Offering a competitive hourly wage for all summer student positions helps to attract high-quality candidates which supports the Township in providing quality services to the community.

The current Summer Student Wage Grid is structured to ensure an appropriate compression ratio between the student positions, reflecting the knowledge, skill, effort and working conditions associated with them. A six percent (6%) increase would be required for each of the four steps in the wage grid to maintain the established compression ratio, as noted below:

Table 1

Pay Code	2023 Rate	Proposed 2024 Rate
ST-01	15.61	16.55
ST-02	17.50	18.55
ST-03	18.25	19.35
ST-04	19.50	20.67

The proposed rates still maintains a solid compression ratio between the student rates and the bargaining unit rates. The Level I hourly rate for 2024 bargaining unit positions is $24.14.

Financial Implications

This year, we will require 18,520 hours of student labour. Based on this identified student staffing need for 2024, the total gross wages would be $341,341.20 compared to $272,116.00 in 2023. This represents an increase of $69,225.00. The increase is also comprised of additional Day Camp staff needed to resume day camp programming at McMullen Point. The overall increase will be partially offset by an adjustment to the user fees for these programs.

Relationship to Strategic Plan

☐ Not applicable to this report.

☒ This initiative is supported by the following priorities of the 2019-2022 Strategic Plan:

3. Ensure the organizational capacity to deliver cost-effective services in a changing world.

Approvals

Prepared by:

Jan Minaker, Manager of Human Resources

Approved by:

Louise Fragnito, CPA, CGA
Chief Administrative Officer

Township of South Frontenac
Staff Report

To:	Council
Prepared by:	Public Services Department
Date of Meeting:	December 19, 2023
Subject:	**Request for Speed Limit Reduction – Storrington Public School**

Summary

The purpose of this report is to provide background on a request for a speed limit reduction on Battersea Road that was recently received from the Storrington Public School.

Recommendation

Open.

Background

On October 4th, 2022, the Public Services Department presented a report to Council providing an outline of speed limit changes on Battersea Road that were directly associated with the new Station 8 Firehall project at 4490 Battersea Road. At that time, the recommendation was put forward for a new 60km/hr speed zone extending 650m from Millburn Road heading northerly on Battersea Road. This speed limit change took several factors into consideration including the sharp curve, Sand Hill Cemetery, operations of Tackaberry's Gilburt Quarry and the new Station 8 Firehall site.

On October 11th, 2022, Council passed Bylaw # 2022-96 supporting a speed limit reduction from 80km/hr to 60km/hr for the area. The new sign materials were ordered and the speed limit area was later signed in the spring of 2023 ahead of the schedule for the new firehall opening.

During the summer of this year, the Department received several calls from residents inquiring about the new speed limit near the school. Staff later reached out directly to the school to enquire about their operations and had an extended conversation with the principal about site operations. The principal at the school, Mr. Ean Pattison, later advised that the speed limits were actively being discussed at the parent teacher committee meetings in September.

On November 16th, Mr. Pattison, on behalf of Storrington Public School submitted a request for a speed limit reduction on Battersea Road. This request was paired with a letter of

support from the Tri-Board Student Transportation Services and a petition with over 130 signatures.

Discussion/Analysis

The Township currently has a speed limit inquiry process posted on the municipal website. Recent discussions at Council on speed limit changes earlier in 2023 had highlighted the need for further discussion on the process along with review triggers. Public Services staff have been doing active research on municipal speed limit policies in Eastern Ontario and that process is not expected to be completed until spring. Research has shown that the majority of municipalities do not have policies relating to speed limit requests. Those municipalities that did have policies appear to be reviewing or updating policies in response to increased demands from the public. Township staff believe it would be beneficial to see the outcomes of some of these studies before advancing any new policy in this area. The City of Kingston and County of Lanark policy updates are among those actively being followed staff at this time.

Currently, Council has several options to consider in response to this request from the Storrington Public School.

> Option 1 – Direct staff to advance technical review on the request from Storrington Public School.
>
> Option 2 – Defer review of the request from the Storrington Public School until speed limit policy updates have been completed by staff and approved by Council.
>
> Option 3 – Deny the request to review posted speed limits.

Financial Implications

Not applicable to this report.

Relationship to Strategic Plans

☒ Not applicable to this report.

☐ This initiative is supported by the following priorities of the 2019-2022 Strategic Plan.

- Priority: Choose an item.
- Action Item (if applicable):

Climate Considerations

☒ Not applicable to this report.

☐ This initiative supports climate change mitigation/adaption efforts in South Frontenac; and/or impacts the Township's resilience to climate change.

Notice/Consultation

- None

Attachments

- Appendix A – Speed Limit Reduction Request E. Pattison
- Appendix B – Letter of Support – Tri-Board Student Transportation Services

Approvals

Submitted By:

W. Troy Dunlop, C.E.T.
Manager of Engineering and
Capital Projects

Reviewed By:

Kyle Bolton, C.E.T.
Director of Public Services

Approved By:

Louise Fragnito, CPA, CGA
Chief Administrative Officer

Troy Dunlop

From: Troy Dunlop
Sent: December 8, 2023 4:24 PM
To: Troy Dunlop
Subject: FW: Speed Limit Reduction Request
Attachments: SignedPetitionRoadSpeedLimitReductionRequest.pdf; Storrington Speed Limit Reducation Letter of Support.pdf; Change-Request-for-Speed-Limits.pdf

---

From: Pattison, Ean, W. <pattisonean@limestone.on.ca>
Sent: Thursday, November 16, 2023 4:43 PM
To: pwsupport <pwsupport@southfrontenac.net>
Subject: Speed Limit Reduction Request

To whom it may concern,
My name is Ean Pattison and I am the principal at Storrington Public School. I am writing to you to ask for your support in our request for a speed limit reduction in front of the school.
We understand that the speed limit, in front of the school, has historically been 80 km/h but we are requesting that the area from the new township firefall to Round Lake Road, be reduced to 60 km/h. We feel that this change is needed to ensure the safety of not only the children who attend Storrington but also their parents and school community members. Prior to the school day and during recess, students are accessing the yard/playground. There have been occasions where a soccer ball or basketball made its way to the road and the initial reaction from students is to run and get it. Although we have provided several reminders to students that it needs to be an adult who retrieves the ball, students sometimes respond impulsively without much thought. A reduction in speed will ensure that drivers are travelling at a speed where they can safely stop to avoid any students.
As a school, we are always looking for ways to invite our Storrington community to join us and participate in school events. To ensure that everyone can attend, it sometimes means that community members must park on Battersea Road. This makes it difficult for vehicles leaving the school parking lot as visibility is reduced. By reducing the speed limit, it will ensure that drivers are able to safely slow down or stop to avoid vehicles that are leaving the parking lot.
As a rural school, almost all students take the bus to and from Storrington. At the end of each day, we have 6 school buses leaving school property which leads to a heavy flow of traffic pulling out onto Battersea Road. Again, the reduction in speed limit would allow drivers traveling on Battersea Road the opportunity to safely avoid any buses pulling out of the school parking lot.
Kindly see the attached letter of support from Jeremy DaCosta, CEO of Tri-Board Student Transportation Services and a signed petition from Storrington community members.

If you have any questions, please don't hesitate to reach out.

Sincerely,

Ean Pattison
Principal
Storrington Public School
Limestone District School Board
4576 Battersea, ON
Kingston, K0H 1X0
T: 613.353.2868
www.limestone.on.ca | @StorrPS_LDSB

SOUTH FRONTENAC

Speed Limit Reduction Request

Requested by: (Please include email and phone number)

Date

11/16/2023

Ean Pattison (pattisonean@limestone.on.ca, 613-329-6

Change Request Form

Description of proposed change (specific section of street or road, between Civic #'s)

Proposed change from the new township firefall to Round Lake Road.

Rationale - Time of Day most impacted by speeding

The time of day most impacted is from 8:50 am to 3:55 pm.

Rationale - What direction? Both, north bound, west bound etc.

Both directions- north and south bound.

What is the existing Speed Limit posted?

The existing speed limit is 80 km/h.

Petition from other concerned citizens? (if so, please attach)

Petition is attached.

Save a copy of your completed form and the required petition and email both to the Public Services Department for review and consideration.

Support For a Speed Limit Reduction in Front of Storrington Public School

We, the undersigned, members of the Storrington Public School community and residents of the Battersea area, request that the speed limit in front of Storrington Public School be reduced from its current of 80 km/h to 60 km/h.

Name- Please Print	Signature- Please sign your name below	Address- Full home address OR city and province OR province and postal code
BLAINE PARES		ON K0H 1H0
PAM MILLS	P. Mills	INVERARY ON. K0H 1X0
KEITHA KIRKHAM		Battersea K0H 1H0
Tracy Ling		1819 Ormsbee Rd. K0H 1H0.
~~Rich~~ Rich Ling		1519 ormsbee Rd. K0H 1H0
Julie Goodman		4607 Lr. Rud - Lake Rd. K0H 1H0
Colleen Dolet	Colleen Dolet	5412 Battersea Rod. K0H 1H0
CHRIS CARSON		3028 WASHBURN
Tim Duncan		3287 Four Seasons Drive K0H 1W0
Trish Tisdale	Trish Tisdale	6189 Battersea ON K0H 1H0
Amanda Grinnell		4819 Battersea ON K0H 1H0
Jorke Moreland	Jorke Moreland	3684 Battersea Road K0K 1X0

Support For a Speed Limit Reduction in Front of Storrington Public School

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Name- Please Print	Signature- Please sign your name below	Address- Full home address OR city and province OR province and postal code
Stacey Hinch		5175 Battersea Rd.
Chelsea McGeachie		2335 Sands Rd Battersea on.
VANESSA IVIMEY		3290 Round Lake Rd. Inverary, ON
Martina McCallum	MARTINA McCallum	3045 Bear Creek Rd.
Tracey Moffat		5396 Ramparts Rd Battersea
[illegible]		3724 Battersea Rd.
Laurie Monds		3617 Factory Rd.
Heather Seamone		96 Hewitt Lane
Sydney [illegible]		4981 Battersea Rd, Battersea, on, K0H 1H0
Jen Brunet		" Same Address
Koben George		5098 Battersea RD, BAttersea on K0H 1H0
Lianne Ramsay		4530 Camden Portland Brady Rd, Harrowsmith, ON
Kaitlyn Cavaquez	KC	4637 Lower Round Lake Rd

should be a school zone

Support For a Speed Limit Reduction in Front of Storrington Public School

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Name- Please Print	Signature- Please sign your name below	Address- Full home address OR city and province OR province and postal code
Riley Drope		4260 Battersea rd
Ryann		5098 Battersea rd
Mike McNamara		1449 Norway RD
Natasha Brabant		4561 milburn rd.
Jake Schaffer		3693 Battersea Rd
Vicky Garran		Peterhead
Michele Watson		3814 Battersea Rd
DAVE DIXON		3800 MORELAND - DIXON RD
Veronica West		3607 Washburn Rd
David Matthews		5174 Battersea Road
Taylor Merrithew		5179 Battersea Rd
Corey Hoffman		3000 Randy Clark rd.
Lisa Swan		3351 Bateau Rd.

Support For a Speed Limit Reduction in Front of Storrington Public School

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Name- Please Print	**Signature-** Please sign your name below	**Address-** Full home address OR city and province OR province and postal code
Georgina Trudeau	G. Trudeau	1732 Sunbury Rd. Inverary, ONT
Megan Hinch	Megan Hinch	4656 Battersea Rd. Battersea, ON
Kara Calder	K. Calder	4658 Lower Round Lake Rd.
Katrina walker	Katrina Walker	2926 sunbury Rd Inverary, ONT
Cheyenne Archibald	C Archibald	5216 Dundon Drive, Seeleys Bay, ON
Dave Tidman		5121 Robert Hogan Lane.
Lyn McCauley		2271 Sunbury Rd.
Deborah Staveck		5091 Battersea Rd Battersea KOH 1HO.
Ryan Arsenault		2535 Hawk Rd.
Cassandra Carlyle	Carlyle	5859 Battersea Rd KOH 1HO
Jamin George		5098 Battersea Rd KOH 1HO
Luc Depfuck.		4315 Battersea Rd.
Chelsea McCallum	C McCallum	153 hemlock hill lane. KOH 1XO

Support For a Speed Limit Reduction in Front of Storrington Public School

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Name- Please Print	Signature- Please sign your name below	Address- Full home address OR city and province OR province and postal code
Susan Woock		4909 Alex McLean Lane, Battersea On.
Shannon Russell		2958 Washburn RD. Inverary ON K0H 1X0
Bev Paige		Washburn RD. Inverary ON K0H 1X0
Tracey Sullivan		3894 Round Lake Rd. Inverary K0H 1X0
Peter Brothers		3653 Round Lake Rd. " "
Jessica Trautmas		5046 Battersea Road
Bryan Maurey		3385 Battersea rd.
Mary Lou Kirkpatrick	MARY L KIRKPATRICK	2075 BATTERSEA Rd
H McLurg-Murphy		695 Leland Rd. RR2 Perth Road
Lorie Hickey	Lorie Hickey	2230 wellington ST K0H-1H0
LIZ Simmons		1911 ORMSBEE ROAD K0H 1H0
TANYA KIRN		1832 Burnt Hills Rd.
Libby McMaster		3145 Battersea Rd

Support For a Speed Limit Reduction in Front of Storrington Public School

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Name- Please Print	**Signature-** Please sign your name below	**Address-** Full home address OR city and province OR province and postal code
Cory Sleeth		5253 Battersea Rd.
Cyndal Vandusen		Battersea.
Chantelle Matias	Chantelle Matias	3685 Battersea Rd
Nick Harvey		ormsbee RD
CHRISTINE HEIJMANS	C Heijmans	370 mountchesney Rd.
Helen Ronan	Helen Ronan	5210 Horan Pt Lane
Jo-Anne Scantlebury		3360 Princess Rd.
Lisa Barbier		2008 Ormsbee Rd.
Amy McCallum		3082 Bear Creek Rd
Bob McCallum		3082 Bear Creek RD.
Brad Brenn		1019 Chancery St
Brenda Butt		4709 Alpine Heights
B Lawton	B Lawton	2224 Wellington street

Support For a Speed Limit Reduction in Front of Storrington Public School

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Name- Please Print	Signature- Please sign your name below	Address- Full home address OR city and province OR province and postal code
RUTH SCHINKEL	Ruth Schinkel	Ontario L0S1R0
Katilyn Kennedy	Katilyn Kennedy	2519 Washburn Rd
Suzanne Vankel	Suzanne Vankel	suzweute@gmail.com
Jenn Donohue	Jenn Donohue	3420 Round Lake Rd ON K0H1X0
ERIC DONOHUE		3420 ROUND LAKE RK K0H 1X0
Lindsay Clark		3698 Round Lake Road, K0H 1X0
Sharon Patterson	Sharon Patterson	4383 Battersea Rd K0H1H0
Laurie Jardine	Laurie Jardine	5445 Battersea Rd K0H 1H0
Carrie Gostlin	Carrie Gostlin	2515 Sands Rd K0H 1H0 Battersea ON
Craig Munro	Craig Munro	3418 Round Lake Rd Inverary, ON
Lindsay Munro	Lindsay Munro	3418 Round Lake Rd Inverary, ON
Heather Nourry	Heather Nourry	4723 Battersea rd Battersea ont
Matt Nourry	Matt Nourry	"

Support For a Speed Limit Reduction in Front of Storrington Public School

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Name- Please Print	Signature- Please sign your name below	Address- Full home address OR city and province OR province and postal code
Tiara Thompson	Tiara Thompson	5351 Rideau rd, Seeley's Bay Ont
Cassandra Mahon Costa		5022 Battersea Rd Battersea, ON.
Emily Watson	Emy Wat	4318 Milburn Rd RR1 Battersea ON
Trevor Cunningham		" " " "
GEO ITALL		4620 milburn Rd Battersea
Meghann Azulay	M. Azulay	2866 Washburn Rd, Inverary ON
Renay Louaides		4097 Cardinal Lane, Inverary On.
Pamela Lovelace		2548 Sands Rd Battersea, ON
Danielle DeSa.	D DeSa	4388 Lower Round lake Rd.
Audrey Conner	D. Conner	4996 Lower Rd Lake Rd
Brooke Mustard	B Mustard	2450 Sands Rd. Battersea, ON
Nicole Vaillancourt		2330 Sands rd. Battersea, Ont
Steph Gratto		7848 Battersea Rd, ON.

Support For a Speed Limit Reduction in Front of Storrington Public School

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Name- Please Print	**Signature-** Please sign your name below	**Address-** Full home address OR city and province OR province and postal code
Julia Markle		4937 Battersea RD. Battersea
Katie Shannon		3866 Arthur Rd, Inverary
Ryan Neil		3061 Sunbury RD Inverary KOH1XO
Katana Shatraw		3061 Sunbury Rd. Inverary KOH1XO
Laura Oomen		2920 Washburn Rd Inverary KOH1XO
Meghan Wilson		2330 sandsRd Battersea KOH1HO
Melina Dixon		4855 Alex Melean Lane Battersea KOH1HO
Janson Smith		
Tyson Thompson		Battersea on
Stephanie Rbzak		3334 Moreland-Dixon Rd Inverary KOH1XO
Gord Norman		5227 Campbells Rd Battersea On.
Michelle Howie		2835 Sunbury Rd KOH1XO
Jeff Winter		4539 wildlife Lane

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Name- Please Print	**Signature-** Please sign your name below	**Address-** Full home address OR city and province OR province and postal code
Michelle Cunningham		4539 Wildlife Lane Battersea K0H1H0
Taylor Featherston		2498 Sands rd.
Amanda Featherston		2498 Sands rd.
Cyndal Vandusen		2484 sands Rd.
Luce Goodberry.		2484 Sands Rd.
LISA Helena		4935 Ramparts Rd.
Katie Spencer		3089 Washburn Rd. Inverary K0H1X0.
Ryan Chirnside		677 Brewer Lake Rd. Inverary K0H1X0
Jan Feld		1014 Beach Lane, Seeleys Bay
JOE FURTADO		4798 JONES LANE BATTERSEA
Megin Chirnside		677 Brewer Lake Road.
Danielle Forsyth		2730 Bear Creek Rd., Inverary, ON, K0H 1X0
Erin monds		3449 Battersea Rd, Inverary ON K0H 1X0

Support For a Speed Limit Reduction in Front of Storrington Public School

We, the undersigned, members of the Storrington Public School community and residents of the Battersea area, request that the speed limit in front of Storrington Public School be reduced from its current of 80 km/h to 60 km/h.

Name- Please Print	**Signature-** Please sign your name below	**Address-** Full home address OR city and province OR province and postal code
Mike Young	Mike Young	2222 Wellington St. Battersea K0H 1H0
Gillianne Mundell	Gillianne Mundell	4141 Hideaway Lane, Battersea K0H-1H0
Tegan Lumbers	Tegan Lumbers	651 Burnt Hills Road Seeleys Bay, ON
Holly Sloan	Holly Sloan	2967 Lake Rd Battersea ONT K0H1H0
Coryn Mercer	Coryn Mercer	3065 Randy Clark Rd. Battersea ON. K0H 1H0
Sarah Carmichael	Sarah Carmichael	4004 Hiawatha Lane Battersea K0H 1H0
TYLER DOYLE		2740 ROUND LAKE RD. BATTERSEA K0H 1H0
Ash Freeland	Ash Freeland	4891 Duff Rd. Inverary On.
Lisa Renaud	Lisa Renaud	256 Main St. Elgin, ON K0G 1E0.
Kristin Sturgis	Kristin Sturgis	2716 Round Lake Rd Battersea, ON K0H 1H0
Lori-Anne Boyle	Lori-Anne Boyle	786 Grouse Cres. Kingston K7P 1A2
Alexis Hollingsworth	Alexis Hollingsworth	2953 Woodburn Rd

Support For a Speed Limit Reduction in Front of Storrington Public School

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Name- Please Print	**Signature-** Please sign your name below	**Address-** Full home address OR city and province OR province and postal code
MARY GEE		4170 HIAWATHA LANE BATTERSEA
Richelle Bowen		569 Brooke Place, Kingston, ON, K7K 0C2
Ean Pattison		16 Owen Ave., Gananoque, Ont.
Cayla Gordon		2430 Rutledge Rd, Sydenham K0H 2T0
Emily Crawford		631 Bourne Pl, Kingston, ON, K7M 6M9
Joelle Roberts		2609 Hwy 2 East, Kingston, Ont K7L 4V1
Amanda Freeland		4091 Duff Rd Inverary ON.

Support For a Speed Limit Reduction in Front of Storrington Public School

We, the undersigned, members of the Storrington Public School community and residents of the Battersea area, request that the speed limit in front of Storrington Public School be reduced from its current of 80 km/h to 60 km/h.

Name- Please Print	Signature- Please sign your name below	Address- Full home address OR city and province OR province and postal code
Jessica Anderson	Jessica Anderson	Inverary, ON, K0H 1X0
Helen Calder	H Calder	Battersea, Ont, K0H 1H0
WENDY CODERRE	Wendy Coderre	4523 Battersea Rd. K0H 1H0
Roberta Smith	Roberta Smith	161 Doris Smith Lane K0H 1H0
Rebekah Moor	R Moor	2018 Wellington St. Battersea, ON

October 23, 2023

Ean Pattison
Storrington Public School
4576 Battersea Road
Battersea, ON K0H 1H0
pattisonean@limestone.on.ca

Dear Mr. Pattison,

Tri-Board Student Transportation Services is accountable for safe, secure, and efficient transportation to our school communities in partnership with our member school boards, including the Limestone District School Board. We work closely with schools and our school bus operators to ensure the safety of students.

Tri-Board and our bus operators contracted to service Storrington PS support the request to reduce the speed limit on Battersea Road in the vicinity of Storrington Public School to improve safety for school buses as they enter/exit school property. I left a voicemail message today with Mr. Troy Dunlop, Manager of Engineering and Capital Projects, at South Frontenac Township confirming Tri-Board's support for a speed reduction in this area.

If you require any further information, please let me know.

Sincerely,

Jeremy DaCosta
Chief Executive Officer
Tri-Board Student Transportation Services
dacostaj@triboard.ca

CC: Craig Young, Superintendent of Corporate & Staff Services

Township of South Frontenac

Staff Report

To:	Council
Prepared by:	Development Services Department
Date of Meeting:	December 19, 2023
Subject:	**Updated Asset Management Plan**

Summary

This report summarizes summarized the 2023 Asset Management Plan that is submitted for Council approval.

Recommendation

THAT Council approve the 2023 Asset Management Plan as attached in the staff report.

Background

In 2017 the Province approved O.Reg 588/17, which requires Ontario municipalities develop Asset Management Plans (AMP). The Regulation indicated that municipalities must:

- Develop a strategic asset management policy by July 01, 2019
- Develop an asset management plan including core infrastructure assets with current levels of service by July 01, 2022
- Develop an asset management plan including all infrastructure assets with current levels of service by July 01, 2024
- Develop an asset management plan with proposed levels of service, and lifecycle management and financial strategy by July 01, 2025

South Frontenac approved the Asset Management Policy in 2019.

The Township of South Frontenac approved an Asset Management Plan (AMP) in 2016, which provided a base inventory and financial direction at that time on the Township core assets.

This December 2023 update specifically provides reporting on the Core Asset groups that include hard surfaced roads, large bridges and culverts, drinking water and stormwater drainage assets. This update improves the inventory, condition ratings and replacement costs which have been updated with 2022 costs.

Each section of the Asset Management Plan (Roads, Bridges, Water and Stormwater) sets out the following information:

- A summary of the asset inventory in the category

- The average age of the assets in the category, determined by assessing the average age of components of the assets
- The replacement cost of the assets in each service area
- The condition rating systems and overall condition of the assets
- Data sources for the AMP records and update
- Technical and community levels of service benchmarking as required to meet the requirements of O Reg 588/17; and
- A description of the lifecycle strategies for each Core Asset group.

As of the end of 2022, the current replacement value of the Township's Core Asset group was approximately $335 million dollars.

Based on a 10-year forecast and looking at assets on a harmonized standard of replacement the current Municipal Tax Levy is sufficient at this time to finance forecasted expenditures in the current year, for tax supported assets. However, it is important to continue to regularly review these figures to ensure that the infrastructure levy is sufficient to support growth and increased costs. Strategies such as preventative maintenance and enhanced rehabilitation work will also be key to sustainability when developing future Capital plans for budgeting.

Figure EX.1 provides an outline of the overall core asset cost distribution and Figure EX.2 provides a summary for the overall condition ratings for the reporting group.

Figure EX.1 – Overall Core Asset Cost Distribution

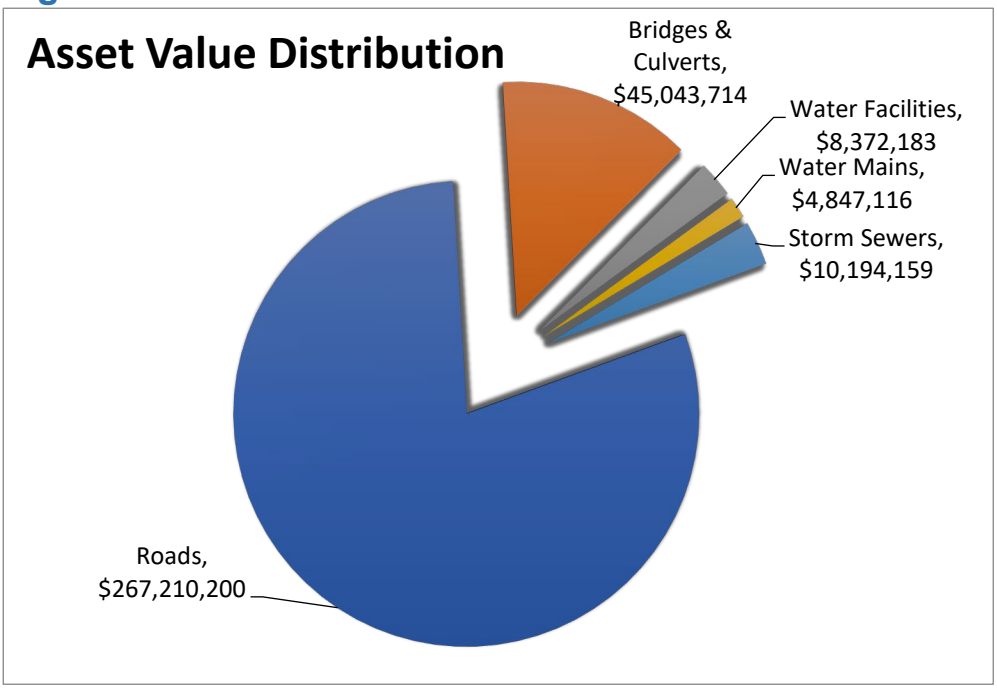
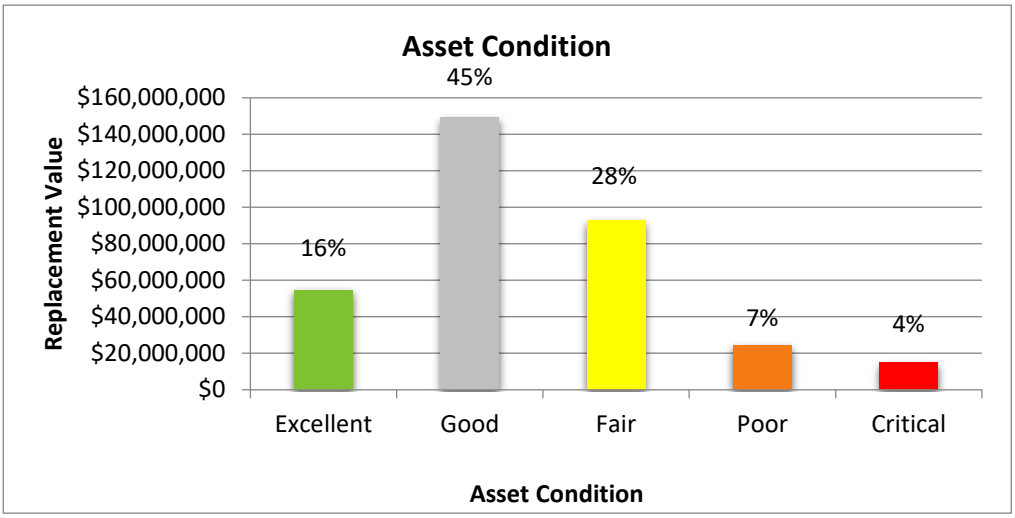


Figure EX.2 – Overall Core Asset Condition



Like most municipalities across Ontario, a portion of the assets are in poor or very poor condition. These assets should be addressed on a priority basis using a risk-based approach which is currently incorporated into the Core Asset Management Plan.

It is important to note that the projected date of renewal of assets is a guideline. With the risk factors and other elements that may occur, the year of renewal may change. The asset management plan is meant to be a tool and is also a living document that will be updated as the asset inventory asset conditions and risk change. With the changing economical environment, it will also be important to update replacement costs based on market values.

This asset management plan, as presented, aligns with the previous asset management plan, the long range financial plan and the five year roads rehabilitation plan.

Financial Implications

The Asset Management Plan does not commit Council to fund any one project, but it is a tool that is used to assess the financial requirements of the municipality relating to its core asset renewals.

Relationship to Strategic Plans

☐ Not applicable to this report.

☒ This initiative is supported by the following priorities of the 2019-2022 Strategic Plan.

- Priority: 3. Ensure the organizational capacity to deliver cost-effective services in a changing world.

Attachments

1. 2023 Asset Management Plan

Approvals

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Township of South Frontenac
Asset Management Plan Update
Core Assets – December 2023

Executive Summary

The Township of South Frontenac is updating its 2016 Asset Management Plan (AMP) to align with the Township's strategic asset management policy and to also comply with the new regulations guiding municipalities under Ontario Regulation 588/17 – Asset Management Planning for Municipal Infrastructure. This December 2023 update specifically provides reporting on the Core Asset groups that include hard surfaced roads, large bridges and culverts, drinking water and stormwater drainage assets.

The core assets may be found in the following sections:

- Section 3.0 – Transportation (Roads and Bridges)
- Section 4.0 - Drinking Water System
- Section 5.0 - Stormwater Management

Each section of the AMP sets out the following information:

- A summary of the asset inventory in the category
- The average age of the assets in the category, determined by assessing the average age of components of the assets
- The replacement cost of the assets in each service area
- The condition rating systems and overall condition of the assets
- Data sources for the AMP records and update
- Technical and community levels of service benchmarking as required to meet the requirements of O Reg 588/17; and
- A description of the lifecycle strategies for each Core Asset group.

As of the end of 2022, the current replacement value of the Township's Core Asset group was approximately $335 million dollars.

Figure EX.1 provides an outline of the overall core asset cost distribution and Figure EX.2 provides a summary for the overall condition ratings for the reporting group.

Figure EX.1 – Overall Core Asset Cost Distribution

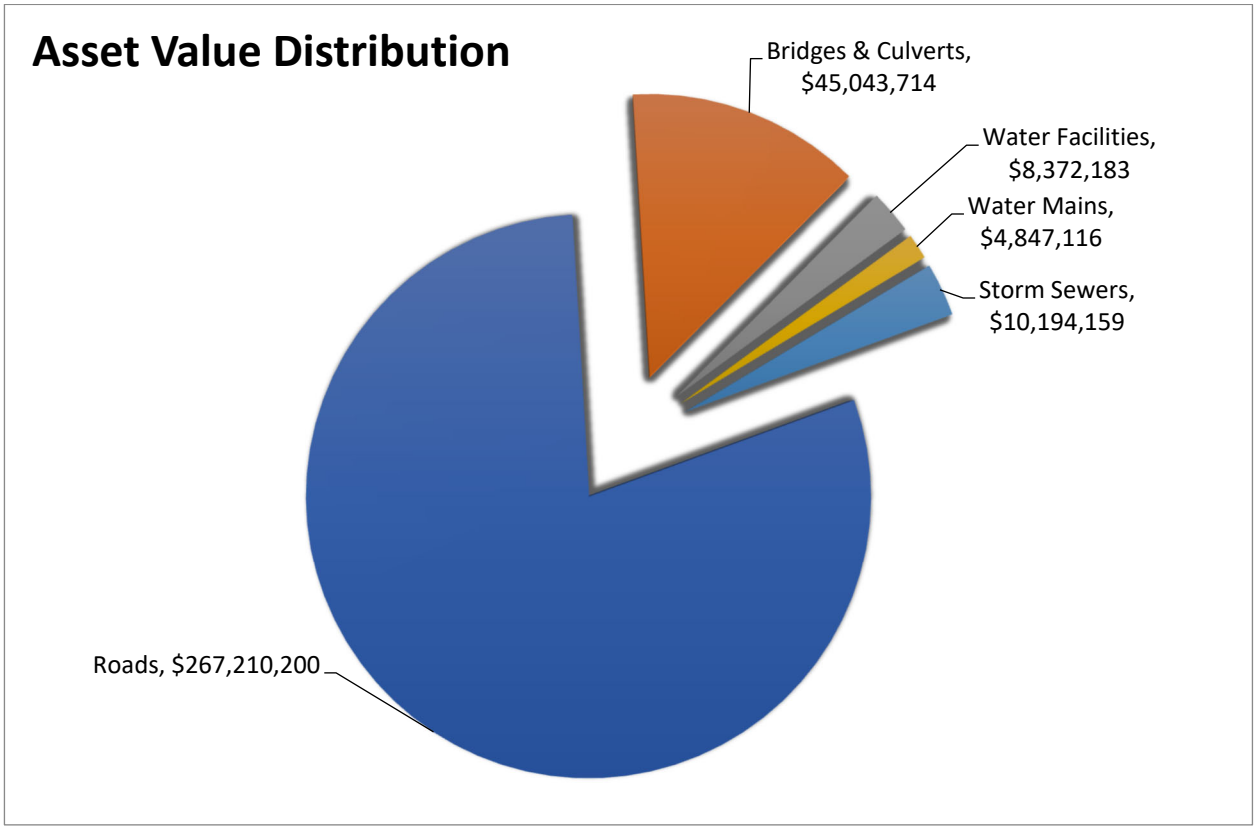
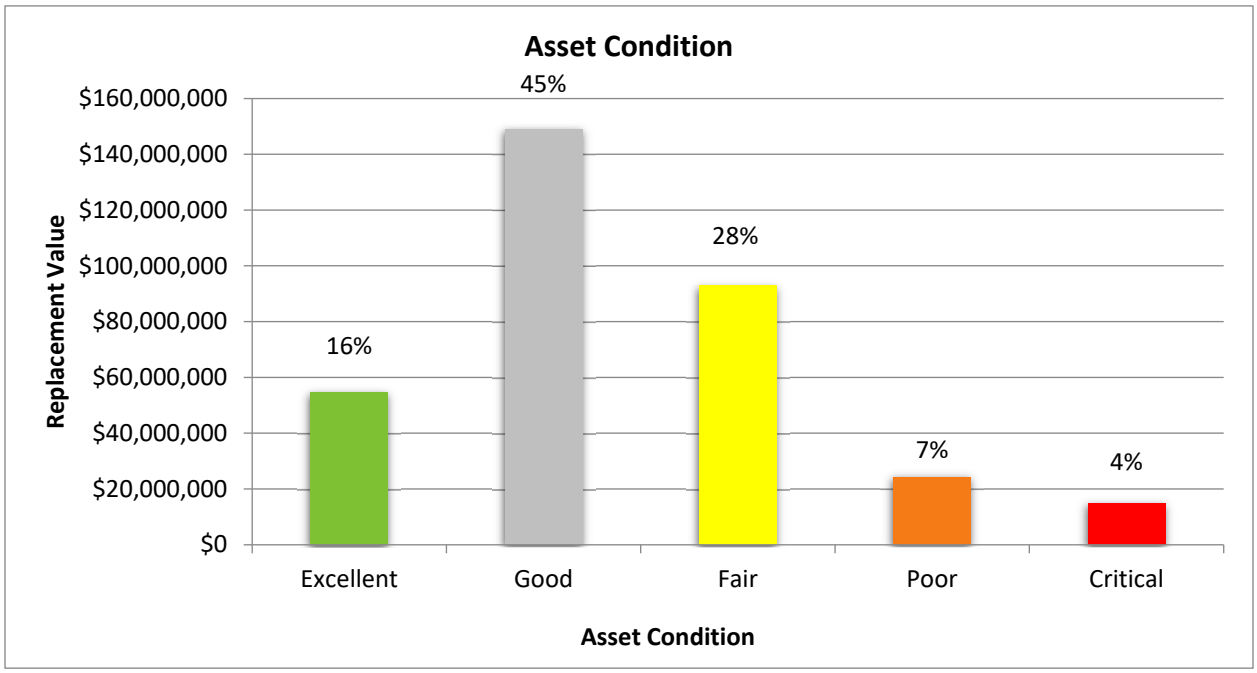


Figure EX.2 – Overall Core Asset Condition

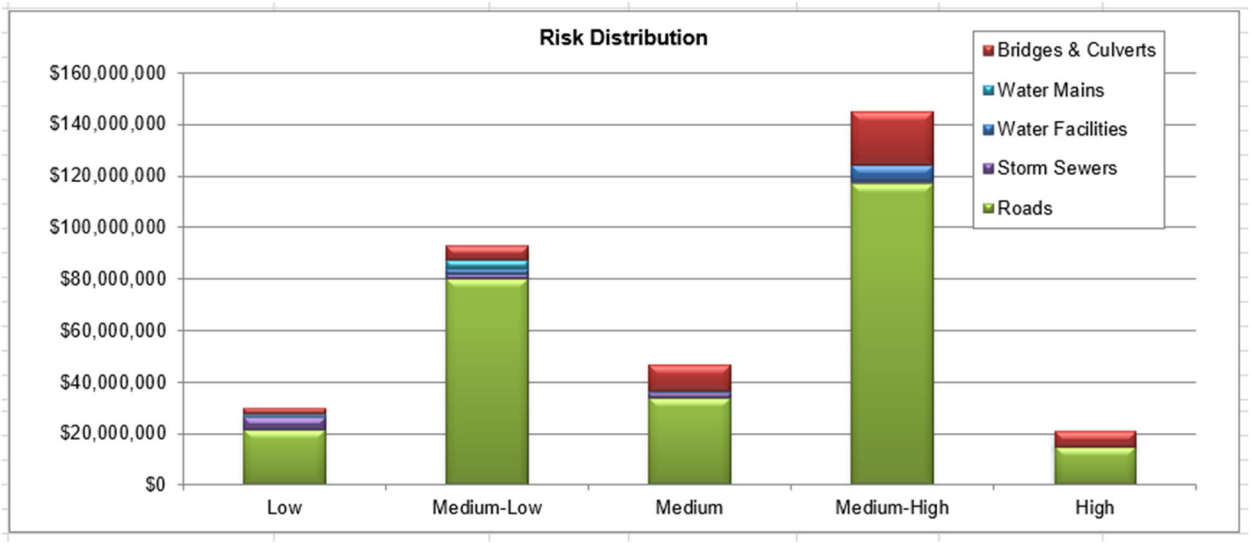


Like most municipalities across Ontario, a portion of the assets are in poor or very poor condition. These assets should be addressed on a priority basis using a risk-based

approach which is currently incorporated into the Core Asset Management Plan. Figure EX.3 below provided a summary of the risk distribution for each of the service areas and includes a summary in the bar graph below.

Figure EX.3 – Overall Core Asset Risk Distribution

			Risk Distribution				
	Replacement Cost	Distribution	Low	Medium-Low	Medium	Medium-High	High
Roads	$267,210,200	80%	$21,315,100	$79,860,350	$33,817,450	$117,278,800	$14,938,500
Bridges & Culverts	$45,043,714	13%	$2,205,000	$5,584,004	$10,371,860	$20,733,650	$6,149,200
Water Facilities	$8,372,183	2%	$0	$2,021,433	$0	$6,350,750	$0
Water Mains	$4,847,116	1%	$1,105,258	$3,389,453	$352,404	$0	$0
Storm Sewers	$10,194,159	3%	$5,090,291	$2,102,327	$2,151,997	$802,693	$46,851
Total	$335,667,371	100%	$29,715,649	$92,957,566	$46,693,711	$145,165,893	$21,134,551
% of Total			8.9%	27.7%	13.9%	43.2%	6.3%



Based on a 10-year forecast and looking at assets on a harmonized standard of replacement the current Municipal Tax Levy is sufficient at this time to finance forecasted expenditures in the current year, for tax supported assets. In the near short term, increases in the infrastructure levy to support growth and increased costs will be required. Strategies such as preventative maintenance and enhanced rehabilitation work will be key to sustainability when developing future Capital plans for budgeting. By taking a longer-term view, over the next 100 years, the Tax Supported Capital Levy needs to be reviewed on a consistent basis to finance Core Asset expenditures.

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1.0 Introduction

On January 1st, 2018, the Province of Ontario passed Ontario Regulation 588/17 – Asset Management Planning for Municipal Infrastructure under the Infrastructure for Jobs and Prosperity Act, 2015. This regulation set out various requirements for municipal asset management planning to help municipalities determine infrastructure needs and to set a framework to guide infrastructure planning and investment decisions.

Under the framework of the regulation each municipality is required to prepare its first strategic asset management policy by July 1, 2019. The policy addresses a framework of twelve separate components found within the regulation and is updated once every five years. On June 18th, 2019, Council met the first milestone of the regulation and adopted its first Strategic Asset Management Policy for the Township of South Frontenac. A copy of the plan is available for viewing on the Township's website.

On July 1st, 2022, O Reg 588/17 lays out the next major milestone in asset management when municipalities will be required to prepare an asset management plan in respect to its core municipal infrastructure assets.

1.1 Purpose of the Plan

The 2023 Asset Management Plan Update – Core Assets (AMP) aligns with the Township's Strategic Asset Management Policy and further serves to meet the requirements of the next phase of Ontario Regulation 588/17. Core assets defined under the regulation for this phase of the AMP update include:

- Water assets that relate to the collection, production, treatment, storage, or distribution of water,
- Wastewater asset that relates to the collection, transmission, treatment, or disposal of wastewater, including any wastewater asset that from time to time manages stormwater,
- Stormwater management asset that relates to the collection, transmission, retention, infiltration, control or disposal of stormwater,
- Road, or
- Bridge or Culvert

1.2 Alignment with Other Township Policies

The 2023 Asset Management Plan Update – Core Assets was reviewed and compiled internally by Township staff. The following documents were included in the review process and incorporated through the development of the current update:

- Township of South Frontenac Official Plan (2003)
- Township of South Frontenac Strategic Plan 2023 - 2026
- Municipal Budgets and other Financial Documents
- Development Charges Bylaw 2019-48 (2019)
- Sydenham Water Financial Plan

- O. Reg. 239/02 – Minimum Maintenance Standards for Municipal Highways

The Township's continued use of asset management software has helped guide the municipality in decision-making processes that are both timely and effective in optimizing the lifecycles of major assets. This software currently manages assets on a like for like basis however and does not currently incorporate major upgrades or growth-related needs. Township staff are continuing to utilize these platforms for managing a growing inventory of new assets as we move into the next phase of the regulation.

1.3 Strategic Plan 2023 – 2026

On December 5th, 2023, Township Council passed their 2023-2026 Strategic Plan. The plan updates the Vision ,Mission and Values for the Corporation and establishes strategic pillars for Sustainable Long-Term Prosperity, Municipal Service Excellence, and People and Partnerships.

The three key pillars set forward the direction for the municipality and key elements that relate directly to the Township's infrastructure assets are captured below:

Pillar 1 - Sustainable Long-Term Prosperity

- **Financial Sustainability** – *Our aim is to continue to maintain a focus on prudent financial management through long-term financial planning. This includes integrating other critical plans such as our Asset Management Plan, Recreation, Parks and Leisure Master Plan, and Transportation Master Plan*.

- **Resilience and Adaptation** – *Our commitment is to foster community resilience to climate change through the safeguarding of our natural assets and mitigating the impacts of climate change*.

Pillar 2 – Municipal Service Excellence

- **Evidence Based** – *Our commitment is to use data-driven insights for informed planning and decision-making. Where available, tools such as performance indicators and analytics will be used within proposals, reports and day-to-day decision making.*

- **Customer Focus** – *Our goal is to enhance customer service and community outreach, making it more accessible through clear communications, self-service, and staff support and resources*.

- **Long-Term Planning** – *The Township is dedicated to developing and implementing long-term financial and master plans to ensure the sustainability of our programs and services.*

- **Operational Efficiency** – *We will optimize processes, service levels, resources, and systems to modernize service delivery, streamline operations, maximize cost-effectiveness, and support and empower management to innovate municipal service delivery*.

Pillar 3 – People and Partnerships

- **Partnership Development** – *Forge collaborative relationships with external organizations, stakeholders, and neighbouring communities to leverage resources, share expertise, and achieve common goals for the betterment of the community.*

1.4 Changes in Growth in Population

Watsons & Associates Economists was retained by the Township of South Frontenac in 2019 to undertake an assessment of the Township's growth potential by settlement area to the year 2046. This study was commissioned as a technical background document to support the Township's Growth Management Study and Official Plan review.

This growth analysis largely focused on the allocation of residential and non-residential development throughout the Township by settlement area and remaining rural area. The following provides a summary of the key findings of this report with respect to forecast population, housing and employment trends for South Frontenac:

Regional and Local Economic Growth Drivers

- Economic growth in South Frontenac is closely tied to the City of Kingston. The proximity of South Frontenac to Kingston's employment market represents a key driver of permanent population growth and distribution of local housing demand;
- The Township is characterized by a blend of expansive rural lands and settlement areas. The existing employment base is concentrated in retail, small to medium-scale industrial and commercial business and home occupations, government and education , accommodation and food services, agriculture and tourism; and
- Quality of life attributes offered in South Frontenac are also expected to drive net migration from a broad range of demographic groups, including first time home buyers, families, empty nesters and seniors.

Employment Growth Forecast

- The Township's employment base is expected to increase by approximately 1,100 jobs between 2016 and 2046, increasing from 3,300 to 4,400. This represents an annual growth rate of 1% over the 30-year forecast period;
- Employment growth in work at home and no fixed place of work categories is forecast to account for the majority of all job growth in South Frontenac;
- Population-related employment (commercial/institutional including work at home and no fixed place of work employment) is anticipated to follow population growth. Alongside commercial employment growth in Inverary, the settlement areas of Hartington and Harrowsmith have potential to facilitate highway commercial employment uses;
- The majority of industrial employment growth is forecasted to occur in primary settlement areas with some opportunity for rural development. The settlement area of Sydenham has potential for light industrial growth on municipal water services; and

- The Inverary employment area also represents a marketable location to facilitate the bulk of industrial employment.

Residential Growth Forecast

- Based on the 2019 study by Watson and Associates, the Township of South Frontenac permanent population base is forecasted to increase over the next 30 years, from approximately 19,100 in 2016 to 23,800 in 2046. This represents an annual growth rate of 0.7%;
- Major changes occurred during the pandemic and there was substantial growth, with the 2021 Stats Canada showing the population growth to 20,188, which was an 8.3% change from the 2016 census. In 2024, the township is once again engaging a third party to update the population projections based on this new information
- Over the 2016 to 2046 forecast period, new housing growth is forecasted to be comprised of 90% low-density (singles and semi-detached), 4% medium-density, (townhouses) and 6% high-density (apartments);
- Compared to historical trends, housing growth is forecast to shift more towards settlement areas between 2016 to 2046. This shift is anticipated to be largely driven by the aging of the population, local desire for more housing options within settlement areas, opportunities in primary settlement areas for communal servicing and continued upward pressure on local housing prices;
- Housing growth in settlement areas is anticipated to be concentrated in the primary areas of Inverary, Sydenham and Verona; and
- Rural areas are forecast to contain 40% of all new permanent unit growth. This rural share of growth increases when also considering dwelling unit conversions from permanent to seasonal occupancy as well as demand for new seasonal dwellings.

2.0 Asset Management Plan, Framework and Methodology

2.1 Infrastructure Assets Included in the Plan

The Asset Management Plan Update for 2023 includes expanded details on the core assets owned by the Township that include roads, bridges, culverts, stormwater management assets, and water assets. Each of these core assets groups are discussed in separate sections of this report update.

2.2 Stakeholders in the Updates of the AM Plan

Key stakeholders of the 2023 Plan update include:

- Residents of the Township of South Frontenac
- Township Council
- Department Heads in Corporate Services (Finance) and Public Services
- Contributing staff from the Corporate Asset Management Team, Public Services Department (Technical Services / Operations), Frontenac County (GIS) and Corporate Services (Finance)

2.3 Framework and Methodology of the AM Plan

The 2023 AM update serves to meet the regulatory requirements of Ontario Regulation 588/17 requirements, the Guide for Municipal Asset Management Plans and the asset management practices endorsed by the Federation of Canadian Municipalities and Asset Management Ontario.

Each section of the AM Plan for Core Assets will provide details on the state of the Local Infrastructure ending December 31, 2022, including details on:

1. Asset Inventory
2. Profile and Age of Assets
3. Asset Conditions and Rating Systems
4. Data Sources
5. Levels of Service
6. Lifecycle Strategies
7. Current and Forecasted Operating and Capital Costs

3.0 Core Assets – Transportation

This section of the AM Plan provides details on the number, age distribution and condition of the Township's core transportation assets including roads, bridges, and culvert structures. These assets in combination carry the greatest replacements costs within the transportation asset pool and carry higher levels of risk within the overall portfolio.

3.1 Asset Inventory

The Township of South Frontenac Transportation Core Asset pool includes approximately 802km of roadways, 24 bridges, and 22 culvert structures (>3m span) serving the residents of South Frontenac. The Township continues to collect and update data on these assets and records all information within the Corporation's asset management software. Field inspections and condition assessments that are performed on these assets continue to improve the both the quality and accuracy of the data compiled on these systems.

The total estimated replacement value for existing core transportation assets (2022) included in this AM plan is estimated at 312.2 million dollars. These values are expressed in 2022 dollars and can be found in Table 3.1 below.

Table 3.1 – Core Transportation Asset Details and Valuation

Subservice	Major Asset Group	Process – Sub Asset Group	Asset Quantity (2022)	Unit	Replacement Value (2022 $M)
Roads	Pavement (HCB)	Arterial (Class 2)	312,630	sqm	36.361
		Collector (Class 3 and 4)	788,985	sqm	78.392
		Local (Class 5 and 6)	111,190	sqm	13.296
	Surface Treatment (LCB	Collector (Class 3 and 4)	2,113,808	sqm	106.428
		Local (Class 5 and 6)	589,707	sqm	32.732
	Structures	Bridges Spanning 3m or > 24 structures	3,041	sqm	33.944
		Culverts** Spanning 3m or >	1,624	sqm	11.099

*HCB and LCB Assets include road base. Gravel roads are excluded.

**Culvert assets do not include drainage structures with spans of less than 3m.

3.2 Profile and Age of Assets

The Township carried out extensive research on the age of its transportation assets as part of the 2016 Asset Management Plan update and that data continues to improve over time with the implementation of the new AM software platforms. The details provided in Figures 3.1 through 3.3 show the representation of these assets across each decade from pre-1950 through to the 2020's.

Figure 3.1.1 – Age Profile – Paved Roadways HCB (Asphalt)

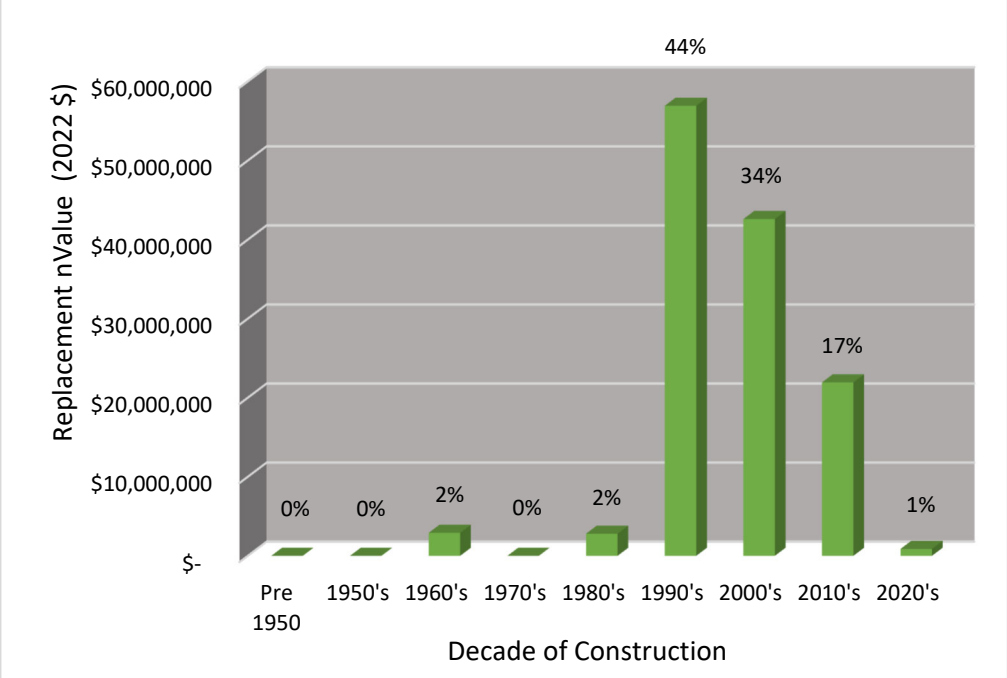


Figure 3.1.2 – Age Profile – Paved Roadways LCB (Surface Treated)

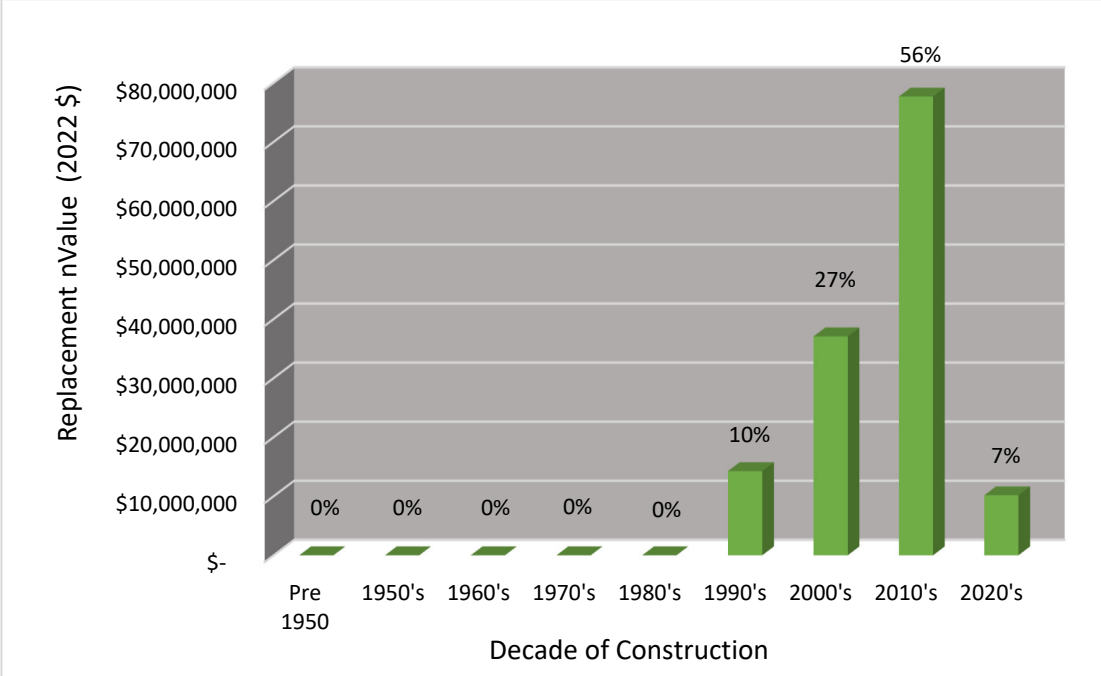


Figure 3.2 – Age Profile – Bridges Span 3m or Greater (OSIM)

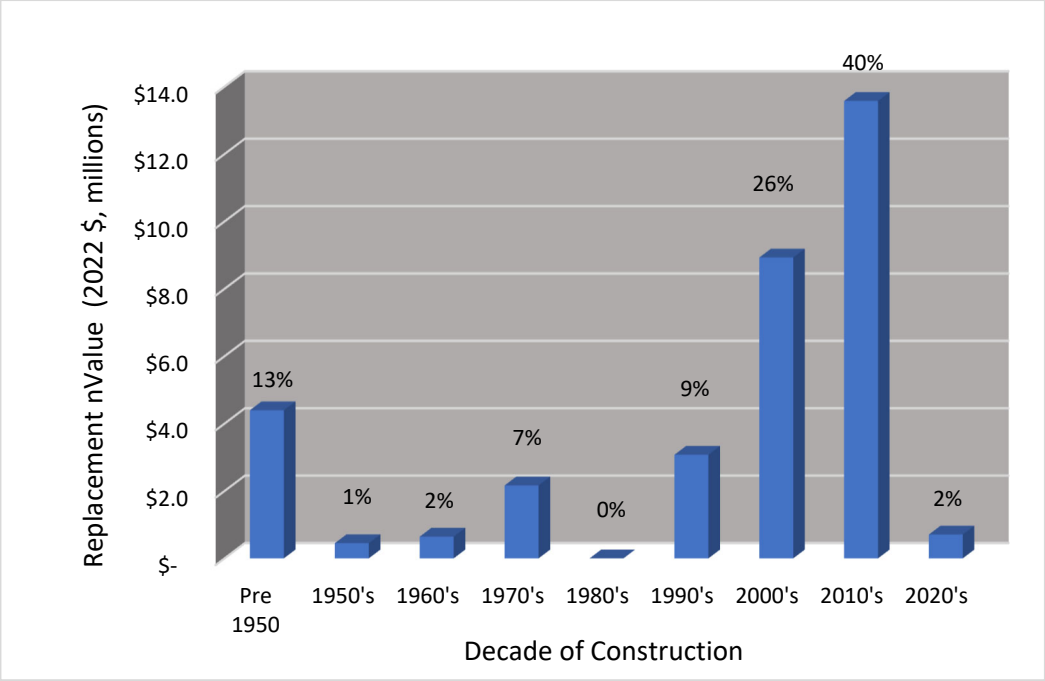
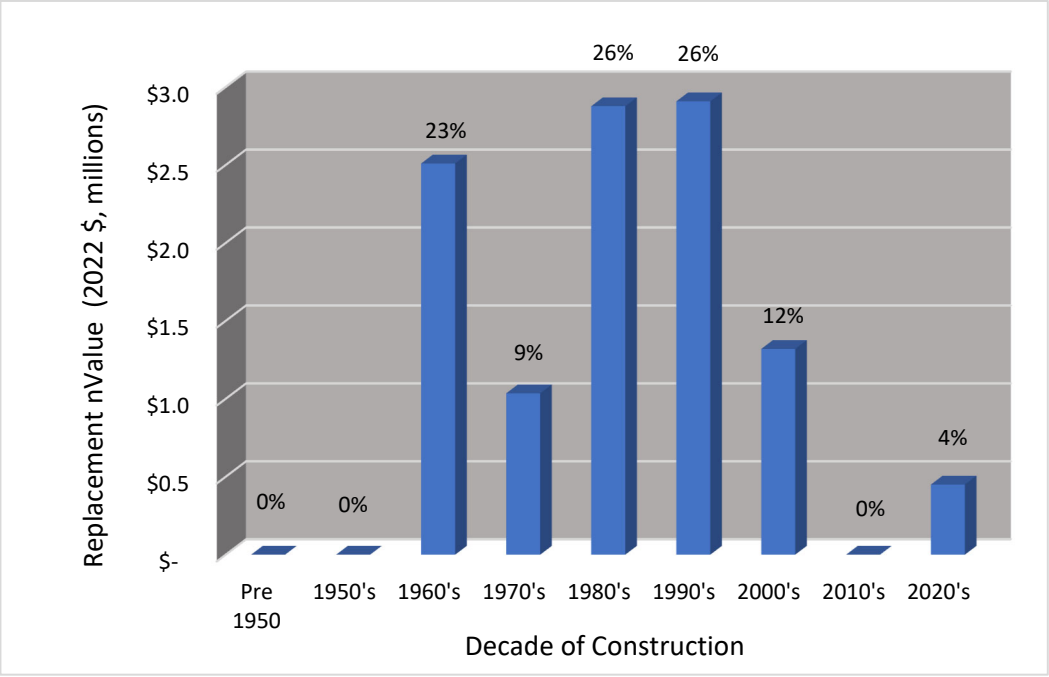


Figure 3.3 – Age Profile – Culverts Span 3m or Greater (OSIM)



The average age for each of the asset profiles is summarized below in Table 3.2. The majority of Low-Class Bituminous roads in the Class 3 and 4 categories are beyond the half point in their overall service life. These results are indicative of the deficits (poor and very poor rated roads) for the LCB class in the 2022 Roads Needs Study.

Table 3.2 – Average Core Transportation Asset Age

Major Asset Group	Sub Asset Group	Average Age (2022)	Estimated Remaining Service Life (2022)
Pavement (HCB)	Arterial (Class 2)	23.7	21.3
	Collector (Class 3 and 4)	17.3	32.7
	Local (Class 5 and 6)	19.1	40.9
Surface Treatment (LCB)	Collector (Class 3 and 4)	14.7	10.3
	Local (Class 5 and 6)	12.5	17.5
Structures	Bridges Spanning 3m or Greater	35.1	39.9
	Culverts Spanning 3m or Greater	35.5	14.5

3.3 Asset Conditions and Ratings Systems

All of the Township's assets are assessed for a condition rating that defines the level of deterioration of an asset throughout its lifecycle. These conditions ratings are initially updated through field measurements and are adjusted annually according to predictive methods that consider the assets age and an accepted deterioration curve. Some assets deteriorate in a linear fashion (equally over time) while others deteriorate at accelerated rates as they get older. The asset condition is based on standard engineering practices for all assets.

In this Asset Management Plan update, the Township has moved to include reporting on a five-point universal rating system when reporting the condition of assets to key stakeholders. Assets are evaluated using various methods and rating scales are established that translate to ratings of: Very Good, Good, Fair, Poor or Very Poor.

Table 3.3 provides a summary on the five-point scale to support further interpretation.

Table 3.3 – Five Point Condition Rating System

Grade	Description	Condition Assessment Definition	Age Based Condition	Probability of Failure
VG	**Very Good**	Well maintained, good condition, new or recently rehabilitated.	Greater than 80% of asset useful life remaining.	Improbable
G	**Good**	Good condition, few elements exhibit existing deficiencies.	60 to 79.9% of asset useful life remaining.	Not Likely
F	**Fair**	Some elements exhibit significant deficiencies. Asset requires attention.	40 to 59.9% of asset useful life remaining.	Possible

P	**Poor**	A large portion of the system exhibits significant deficiencies. Asset mostly below standard and approaching end of service life.	20 to 39.9% of asset useful life remaining.	Likely
VP	**Very Poor**	Widespread signs of deterioration, some assets may be unusable. Service is affected.	Less than 20% of asset useful service life remaining.	Very Probable

Some assessment programs are focused on identifying defects and/or potential unsafe conditions according to specific regulatory requirements. Other more detailed assessment programs focus on the performance of an asset rather than compliance. These more detailed condition assessments are intended to review where an asset is within its predicted service life and how much service life remains. Often these types of assessments use a decay curve with as scale of 100% (best) to 0% (worst). These major condition assessments serve to identify how the assets are performing and provide guidance on the potential for interventions to extend the overall asset life. Additional details on the condition rating review process for roads, bridges and culvert structure can be found in Sections 3.3.1 and 3.3.2.

3.3.1 Road Pavement Condition

The Township of South Frontenac traditionally carried out road condition ratings on its hard surfaced roadways on a four-year cycle for its paved (HCB) and surface treated (LCB) assets. This model became more difficult to maintain over the years due to the significant (and seasonal) resource demands for inspection activities.

In 2021, the Township moved to secure the services of a professional consultant to carry out a network evaluation that looked to establish a Pavement Condition Index (PCI) in accordance with Ministry of Transportation (MTO) standards. This review included assessments of Surface Distresses (DMI) and Ride Condition Ratings (RCR) as part of the MTO approved methodology. Study activities were carried out by a two- person review team using the: Manual for Condition Rating of Surface Treated Pavements (SP-021) and the Manual for Condition Rating of Flexible Pavements (SP-022). Gravel roads were also reviewed and rated as part of this activity however those findings are not a requirement under the current AM reporting for core assets.

Each asphalt and surface treated road segment in the Township's asset management inventory were reviewed and assigned a PCI rating between 100 (best) and 0 (worst) as part of the 2022 Road Needs Study. The Township has since corresponded these ratings to a separate five step reporting scale for standardized reporting formats for stakeholders.

Table 3.4 – Five Point Condition Rating System – PCI

PCI Rating	Description
85 to 100	Very Good
70 to < 85	Good
55 to < 70	Fair
40 to < 55	Poor
0 to < 40	Very Poor

3.3.2 Structure Condition - Bridge and Culverts (> 3m Span)

Bridges and culvert structures that have a span of 3m or greater are inspected by a qualified structural engineer once every 2 years and these structures are evaluated according to the methodology prescribed within the provincial Ontario Structure Inspection Manual (OSIM) dated 2008. The OSIM manual reviews various physical elements of a bridge or culvert structure and an overall Bridge Condition Index is applied. The Bridge Condition Index is calculated as a weighted average of the condition states for each of the elements making up the structure. Since all elements are not of equal importance to the structure, the index is weighted according to the relative value or importance of each element in the total.

BCI = Current Element Value/Total Replacement Value x 100

BCI ratings range from a rating of 100 for new assets to a rating of 0 where all elements would otherwise be in a state of disrepair. The Ontario Ministry of Transportation classifies bridges with a BCI of 70 or above to be in good or very good condition and below 60 to be in poor or very poor condition. The band of 60 to 70 is otherwise reserved as a band for a rating of fair. The Township of South Frontenac has developed a secondary five-point scale to for reporting BCI outcomes in a similar manner previously reported for roads.

Table 3.5 – Five Point Condition Rating System - BCI

BCI Rating	Description
85 to 100	Very Good
70 to < 85	Good
60 to < 70	Fair
40 to < 60	Poor
0 to < 40	Very Poor

3.3.3 Asset Condition Summary - Transportation

The charts provided below illustrate the condition of each of the categories of transportation assets by asset value.

- Hard topped asphalt roadways currently have 64% of the network in a good or very good condition while surface treated roadways sit at 58% for similar categories.
- Bridge assets currently have 57% of the network in a good or very good condition while culverts sit much lower at 37% for similar categories.

Figure 3.4.1 – Condition Ratings – Roads (HCB Asphalt)

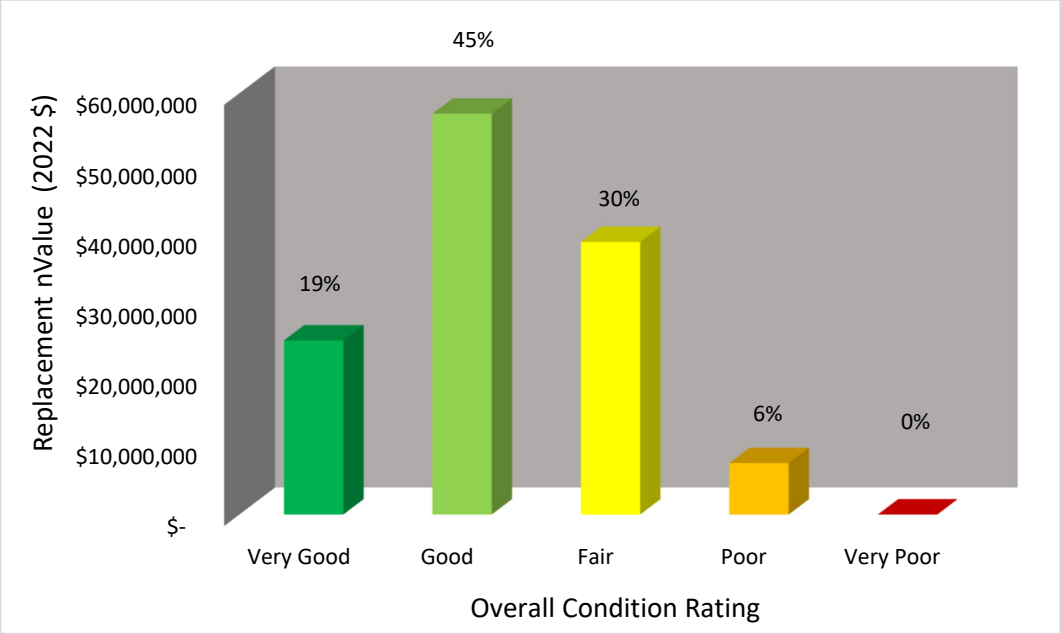


Figure 3.4.2 – Condition Ratings – Roads (LCB Surface Treated)

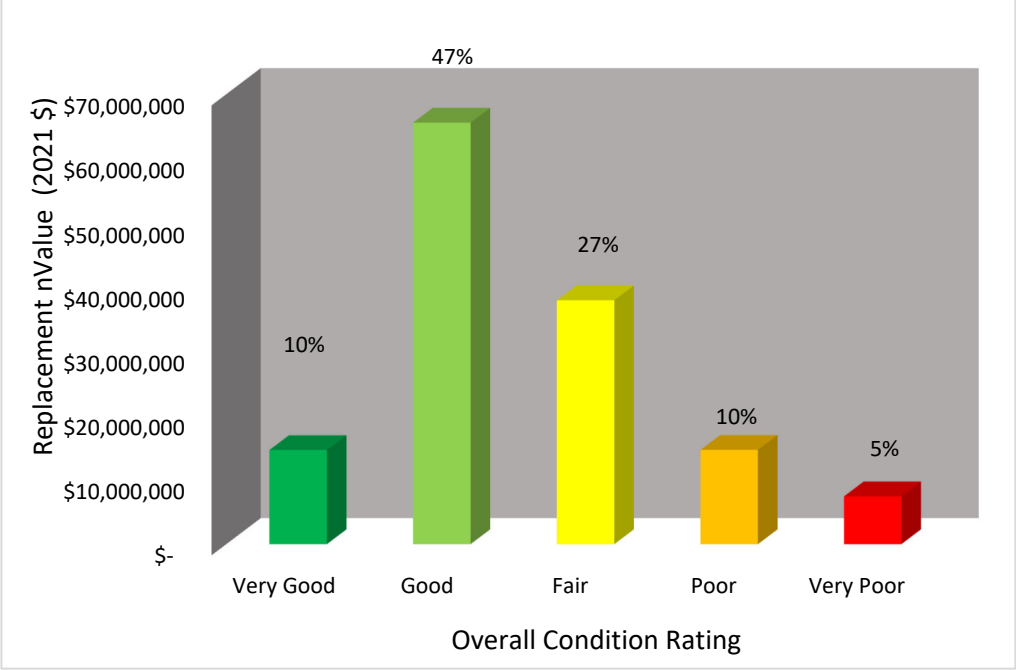


Figure 3.5 – Condition Ratings - Bridges (OSIM)

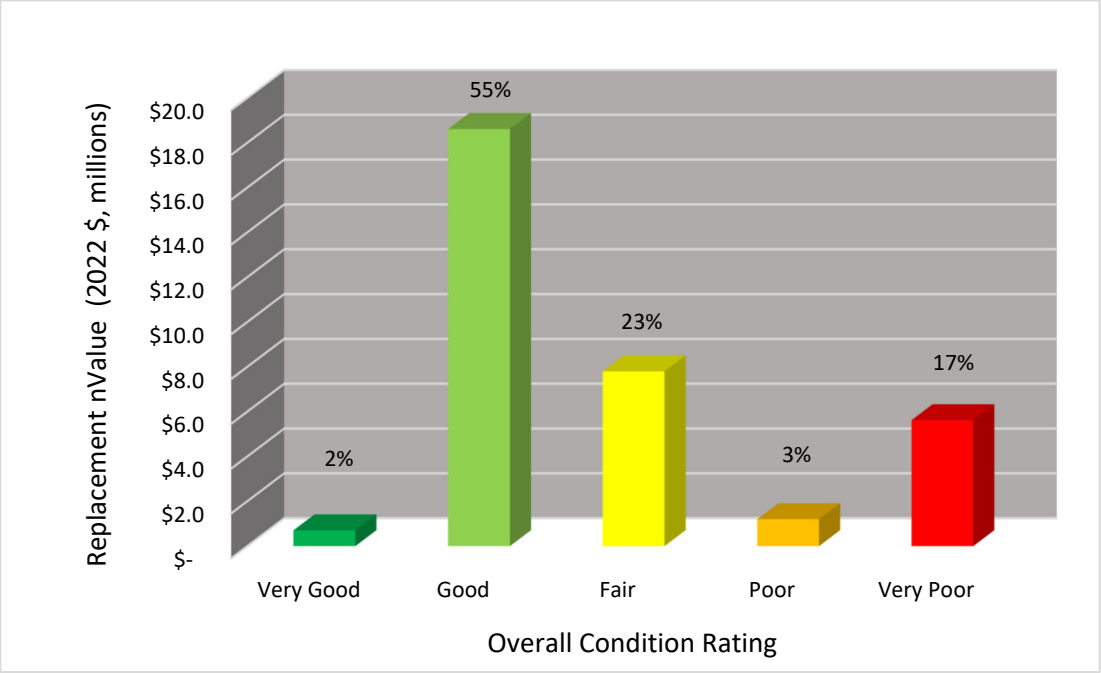


Figure 3.6 – Condition Ratings - Culverts (OSIM)

3.4 Data Sources

The inventories for the core transportation assets were based on information obtained through the Township's GIS records (end of the December 31, 2022) and estimated construction costs were provided by each class. Information compiled by the 2021 Ontario Structure Inspection Manual (OSIM) reports and the 2022 Comprehensive Road Needs Study (RFP# PS-P02-2021) were also utilized. Unassumed assets from active subdivision

developments were not included within these inventories. A summary of the data sources is included in Table 3.6 below:

Table 3.6 – Data Sources for Inventory, Cost and Condition Analysis

Asset	Inventory	Replacement Value	Condition Estimate
Roads	GIS	Unit Construction Costs (per m of road/design standard)	Based on PCI within Comprehensive Road Needs Study (2022) – Golder Associates
Bridges – Span 3m or Greater	GIS / 2021 OSIM Report	Engineering Estimates / Actual Costs	Based on BCI within 2021 OSIM Report – D. M. Wills
Culverts – Span 3m or Greater	GIS / 2021 OSIM Report	Engineering Estimates / Actual Costs	Based on BCI within 2021 OSIM Report – D. M. Wills

3.5 Levels of Service

Levels of Service (LOS) are statements that describe the outputs and objectives that the Township intends to deliver through the services to its businesses, residents and other stakeholders. Developing, monitoring and reporting on LOS are all key components of a performance management program which has the core objective of improved service delivery, accountability and transparency in services.

LOS can be guided by many factors including customer expectations, regulatory requirements, or operational policies and procedures. An effective asset management plan requires a formal framework of performance measures, targets, and timeframes to achieve targets. It is furthermore crucial that the cost to deliver the documented Level of Service is fully understood.

A LOS analysis includes:

- Service identification with the identification of assets involved in providing the services and the stakeholders impacted;
- Determination of community expectations with respect to services;
- Determination of strategic levels of service, based on community expectations (frequently referred to as customer levels of service);
- Determination of technical levels of service for each strategic level of service;
- Use of performance measures to assist in comparing existing service levels to expected levels; and
- An assessment of lifecycle cost implications of moving from existing levels of service to expected (desired) levels of service over a forecast period.

In order to meet the requirements of the regulation, this AM plan update will discuss current LOS under community and technical LOS categories, defined as:

- **Community Levels of Service**: Qualitative descriptions that demonstrate the Township's customer and stakeholders' expectations of transportation services.

- **Technical Levels of Service**: Technical metrics that translate customer expectations into objectives and performance measures.

Ontario Regulation 588/17 currently sets out the core LOS requirements that all municipalities must discuss and report on in Tables 3.7 and 3.8 which follow.

Table 3.7 – O. Reg. 588/17 Prescribed LOS for Roads

Service Attribute	Community LOS (Qualitative)	Technical LOS (Performance Metric)
Scope	Description which may include maps, of the road network in the municipality and its level of connectivity.	Number of lane-kilometers of each of arterial roads, collector roads and local roads as a proportion of square kilometers of land area for the municipality
Quality	Description or images that illustrate the different levels of road class pavement condition.	For paved roads in the municipality, the average pavement condition index value. For unpaved roads in the municipality, the average surface condition (e.g., Very Good, Good, Fair, Poor or Very Poor.)

Table 3.8 – O. Reg. 588/17 Prescribed LOS for Bridges

Service Attribute	Community LOS (Qualitative)	Technical LOS (Performance Metric)
Scope	Description of the traffic that is supported by municipal bridges (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians and cyclists).	Percentage of bridges in the municipality with loading or dimensional restrictions
Quality	Description or images of the condition of bridges and how this would affect use of the bridges. Description or images of the condition of culverts and how this would affect use of the culverts.	For bridges in the municipality, the average bridge condition index value. For structural culverts in the municipality, the average bridge condition index value.

3.5.1 Community Levels of Service

The Township of South Frontenac has a Comprehensive Road Needs Study that was completed by WSP / Golder Associates. This study includes field assessments and ratings of all of the Township's road assets and those ratings are currently available on the Townships website. This study also includes thematic maps of the Township's road assets which show road connectivity throughout the municipality and will also provide an overview

of the corresponding road ratings of Very Good, Good, Fair, Poor and Very Poor. Qualitative descriptions of Community LOS for Pavements and Bridges can be found in Tables 3.9 and 3.10 below:

Table 3.9 – Qualitative Description of Roadways

Service Attribute	Community LOS (Required by O. Reg. 588/17)	Qualitative Description
Scope	Description which may include maps, of the road network in the municipality and its level of connectivity.	The road network for the Township of South Frontenac includes over 1,603 lane kilometers of roadway that are predominantly located in rural residential areas. A single tier network of collector roads and arterial roads formerly managed by the County provide key connectivity to a series of hamlets and villages, the latter of which includes most commercial and industrial services. The Township's major road network provides key service for the movement of commercial traffic, public transportation, emergency services, service vehicles and motor vehicles within the County. The network is also highly integrated into the major networks serving the County of Lanark, County of Lennox and Addington, County of Lanark, Leeds and Grenville and the City of Kingston. A map of the road network can be found in Appendix A1 of this report.
Quality	Description or images that illustrate the different levels of road class pavement condition.	Pictures of the typical road class pavement conditions are included in Appendix A2 of this report.

Table 3.10 – Qualitative Description of Bridges

Service Attribute	Community LOS (Required by O. Reg. 588/17)	Qualitative Description
Scope	Description of the traffic that is supported by municipal bridges (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians and cyclists).	The bridges in South Frontenac are found throughout all rural areas of the Township and provide connectivity for traffic over the many lakes, rivers and streams found in the area. Bridges within the Township serve the movement of commercial and industrial vehicles, public transportation, emergency services, motor vehicles, service vehicles, cyclists and

		pedestrians. The intensity of service does however vary significantly by location.
Quality	Description or images of the condition of bridges and how this would affect use of the bridges. Description or images of the condition of culverts and how this would affect use of the culverts.	Pictures of typical bridges and large culverts (greater than 3m span) within the Township can be found in Appendix A3 of this report. The majority of bridges in the Township are currently in a good to very good condition whereas the majority of culvert structures in the Township are in a fair to good condition.

3.5.2 Technical Levels of Service

Ontario Regulation 588/17 requires the municipality to track two key technical metrics for the road network that include:

- The overall proportion of each road classification area to the overall area of the municipality; and
- The average Pavement Condition Index for each classification of road.

The Township has included the details on Technical LOS for roads in Tables 3.11 and 3.12 below. Additional metrics have also been provided with respect to asphalt pavement (HCB) and surface treated (LCB) roadways to support local AM initiatives.

Table 3.11 – Technical LOS for Road – Lane-km

Road Classification	Lane-km (Hard Surfaced)	Township of South Frontenac Land Area (km2)
Arterial Roads (MMS Class 1 or 2)	76.58	948
Collector Roads (MMS Class 3 or 4)	916.22	
Local Roads (MMS Class 5 or 6)	227.26	

Table 3.12 – Technical LOS - Pavement Condition Index

Road Classification	Definition (Required by O. Reg. 588/17)	Current Qualitative Performance Paved Roads Only (PCI)
Arterial Roads	Arterial roads under the definition of the regulation are roadways that meet the Minimum Maintenance Standards Definitions for Class 1 & 2 roads. Arterial roadways carry high volumes of traffic and provide a high level of connectivity to nearby provincial highways and major regional roads. Examples of arterial roads are Road 38, Perth Road and Sydenham Road.	HCB Asphalt = 70.5
Collector Roads	Collector roads under the definition of the regulation are roadways that meet the MMS Definitions for Class 3 & 4 roads. Collector roadways distribute medium volumes of traffic between arterial roadways and serve a mixture of through traffic and property access. Examples of collector roads are Bradshaw Road, Battersea Road, Bedford Road, Bellrock Road, Buck Bay Road, Burnt Hills Road, Petworth Road, Round Lake Road, Westport Road and Wilton Road.	HCB Asphalt = 75.6 LCB Surface Treated = 70.5
Local Roads	Local roads fall under the MMS Class 5 and 6 roads and mainly provide non-thoroughfare traffic and provide property access. Generally, traffic volumes are low and have limited commercial and industrial traffic. Examples of local roads are Alton Road, Cemetery Road, Deer Creek Drive, Keeley Road, Mount Chesney Road and Quarry Road.	HCB Asphalt = 81.5 LCB Surface Treated = 69.3

*Metrics for asphalt roads (HCB) and surface treated roads (LCB) are not individually required by regulation but have been included by Municipality for AM planning purposes.

Ontario Regulation 588/17 requires the municipality to track three key technical metrics for the bridges that include:

- Percentage of bridges in the municipality with loading or dimensional restrictions
- The average Bridge Condition Index value for the bridges in the network; and
- The average Bridge Condition Index value for the culvert structures in the network

The Township has included the details on Technical LOS for bridges and culverts in Tables 3.13 and 3.14 below.

Table 3.13 – Technical LOS for Bridges – Loading or Dimensional Restrictions

Asset	Percentage (%)	Comments
Bridge (Width or Height)	12.5	3 of 24 total
Bridge Loading	8.3	2 of 24 total

Table 3.14 – Technical LOS – Bridge Condition Index

Asset	Average BCI
Bridges (In Service)	63.5
Culverts (Span 3m or greater)	66.4

Note: BCI's are all weighted average by replacement value.

The Transportation Association of Canada has a progressive target that identifies that the number of bridges in a network in good or very good condition should be at 85%. This is a standard that the Ministry of Transportation has also adopted. On average, new bridges will last approximately 60 to 70 years and will require rehabilitation every 30 to 35 years. This represents an average annual deterioration rate of 3%. Based on a five-year planning cycle it is desirable to only have 15% of the bridges to require rehabilitation at any given time. This threshold indicates that the system is in a steady state.

Using this measure, a bridge with a BCI of over 70 is considered to be in good condition. Locally the Township has 23 bridges in service and one bridge currently closed. Eleven of the Township's in service bridges carry a BCI rating of 70 or higher currently which puts the local network at 47.8%.

3.6 Lifecycle Strategies

The Township's ability to deliver the levels of service outlined in the AMP is impacted by numerous factors including:

a) Current and forecasted growth within the service area;
b) Changes in legislative requirements and the need for equipment to operate in compliance under the Minimum Maintenance Standards for Municipal Highways, Ontario Water Resources Act, Environmental Compliance Approvals and other related approvals;
c) Aging infrastructure and the associated need for increased operations, maintenance and renewals; and

d) Availability of funding resources driven by taxation, development charges and federal/provincial grant programs.

For further details on lifecycle activities on the stormwater network refer to Tables 3.15 and 3.16 below:

Table 3.15 – Maintenance and Monitoring – Roads and Bridges

Asset Type	Operational Activities	
	Current	Additional / Potential
Hard Surface Roads – Paved (HCB)	• Routine MMS Inspections • Crack sealing and mastic repairs • Hot patching and cold patching • Shoulder maintenance	• Use of asphalt binder rejuvinators
Hard Surface – Surface Treated (LCB)	• Routine MMS Inspections • Crack sealing and edge repairs • Hot patching and cold patching	• Use of cold in place sealants / slurry seals
Bridges and Culverts (OSIM)	• Bi-annual OSIM Inspection (Engineering Third Party) • Routine inspection and maintenance as required under Minimum Maintenance Standard Regulation • Clean bridge deck drains and expansion joints (spring) • Wash bridge decks (spring) • Repair wear surface	• Increased frequency of concrete crack repairs • Vegetation removals

Table 3-16 – Rehabilitation and Renewal – Roads and Bridges

Asset Type	Capital Renewal Activities	
	Current	Additional / Potential
Hard Surface Roads – Paved (HCB)	• PCI 70 to 85 – Microsurfacing • PCI 60 to 70 – Mill and Pave or Straight Overlay • PCI 55 to 60 – Cold in Place recycling • PCI <55 – Full Reconstruction	
Hard Surface – Surface Treated (LCB)	• PCI 60 to 80 – Single Surface Treatment - SST • PCI less than 55 – Full Reconstruction of DST	

Bridges and Culverts (OSIM)	• Rehabilitation and Renewals Guided by Ontario Structure Inspection Manuals • Replace wear surfaces • Repair or replace substructure components, superstructure components, expansion joints, barrier systems and related components	• Develop & implement committed annual trenchless lining programs • Develop & implement committed annual structure repair program

3.7 Current and Forecasted Operating and Capital Costs

The estimated costing for lifecycle activities and capital for transportation assets are shown in the table below with an estimated $94.8 million over a period of 10 years.

Table 3.17 – Transportation Lifecycle Costs and Capital Costs

Year	Capital Cost
2023	$8,710,500
2024	$8,627,700
2025	$11,718,860
2026	$8,691,250
2027	$8,103,640
2028	$8,993,500
2029	$9,989,448
2030	$9,734,150
2031	$10,276,250
2032	$9,933,500
TOTAL	$94,778,798

4.0 Core Assets – Drinking Water System

This section of the AM Plan provides details on the number, age distribution and condition of the Township's core drinking water system assets including watermains, hydrants, valves, services, elevated water storage and the water treatment facility.

4.1 Asset Inventory

The Township of South Frontenac currently owns and manages one municipal drinking water system in the Village of Sydenham. Water service assets in the village include a surface water treatment plant, an elevated storage tower, water mains, valves, hydrants, meters and service lines on public rights of way. This system was originally built in 2005 and as such represents one of the newer asset pools within the municipality. The Township continues to collect and update data on these assets and records all information within the Corporation's asset management software. Field inspections and condition assessments that are performed on these assets continue to improve the both the quality and accuracy of the data compiled on these systems.

The total estimated replacement value for existing core drinking water system assets (2022) included in this AM plan is estimated at 13.2 million dollars. These values are expressed in 2022 dollars and can be found in Table 4.1 below.

Table 4.1 – Core Drinking Water Asset Details and Valuation

Subservice	Major Asset Group	Process – Sub Asset Group	Asset Quantity (2022)	Unit	Replacement Value (2022 $M)
Drinking Water System	Supply and Treatment	Raw Water Intake 400mm (193m)	1	ea	0.375
		Treatment Plant	1	ea	4.911
		Plant Upgrades (2010)	1	ea	1.440
	Storage	Elevated Water Tower (1,280 m3)	1	ea	1.646
	Intake & Distribution	Water Mains 250mm	1,321	m	3.162
		Water Mains 200mm	5,491	m	
		Water Mains 150mm	342	m	
		Hydrants	43	ea	0.352
		Valves	83	ea	0.340
		Services	288	ea	0.879
		Meters	229	ea	0.097

4.2 Profile and Age of Assets

The Township carried out extensive research on the age of its drinking water assets as part of the 2016 Asset Management Plan update and that data continues to improve over time with the implementation of the new AM software platforms. The details provided in Figures

4.1 and 4.2 show the representation of the respective age distribution for water distribution and water treatment assets. These graphs show that the majority of the Township's drinking water assets were constructed in the 2000's and modest growth and investments in the system have occurred in the 2010's. The water distribution assets developed in these decades are $4.42M and $0.32M respectively. The water treatment assets are similarly distributed at $6.93M and $1.44M over the same period.

Figure 4.1 – Age Profile – Drinking Water Distribution Assets

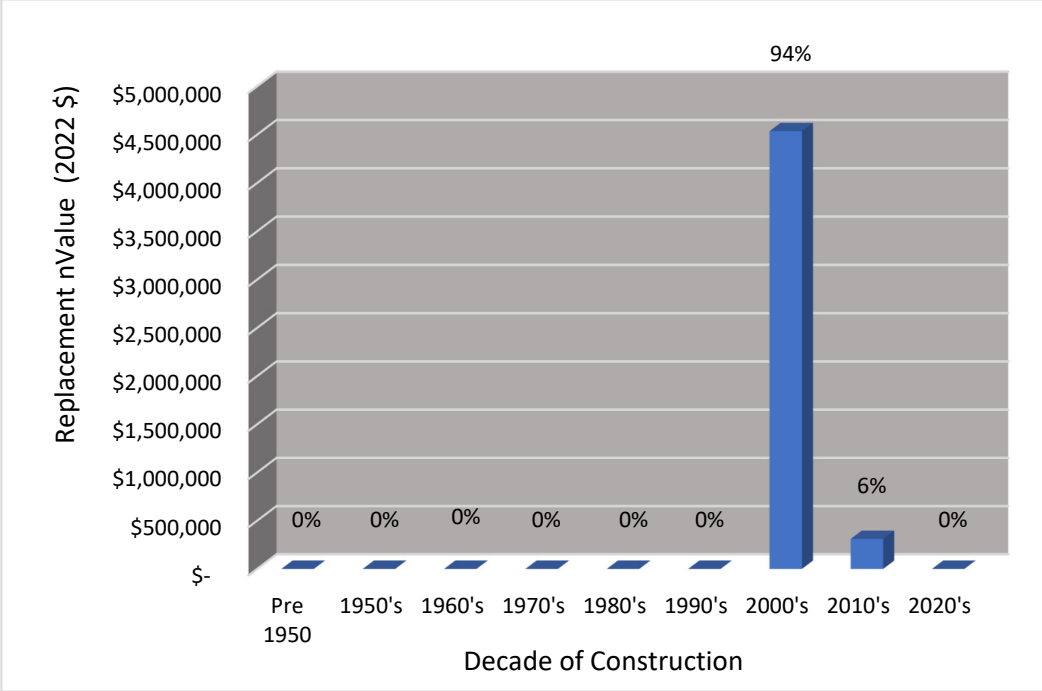
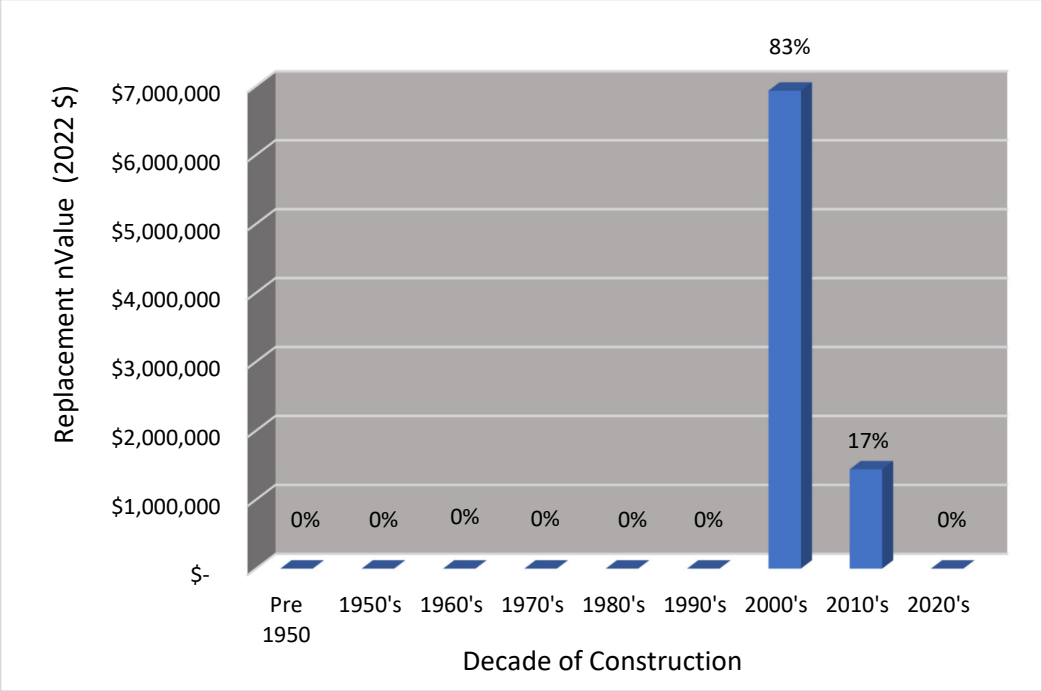


Figure 4.2 – Age Profile –Treatment / Storage Assets



The average age and estimated life of water service assets weighted by replacement value is summarized below in Table 4.2.

Table 4.2 – Core Drinking Water Asset Age

Subservice	Major Asset Group	Process – Sub Asset Group	Useful Service Life (yrs)	Average Age (2022)	Estimated Remaining Service Life (2022)
Drinking Water System	Supply and Treatment	Raw Water Intake	100	17	83
		Treatment Plant	50	17	33
		Plant Upgrades (2010)	25	12	13
	Storage	Elevated Water Tower (1,280 m3)	100	17	83
	Distribution	Water Mains	90	16.7	73.3
		Hydrants	60	16.4	43.6
		Valves	50	16.6	33.4
		Services	50	16.6	33.4
		Meters	25	3.3	21.7

4.3 Asset Conditions and Ratings Systems

Updated condition information remains limited on the water treatment plant, the water storage facility, and the water mains. Therefore, asset condition was established by evaluating the useful service life remaining. The water treatment plant, elevated storage tower and water mains were all constructed in 2005 with plant upgrades in 2010. The water distribution system also expanded in 2011 with the construction of the Valleyview Subdivision which included Morgan Drive. The amount of remaining useful life on all of the assets has been updated from the 2016 AMP and has been correlated to the condition rating schedule below.

Table 4.3 – Five Point Condition Rating System

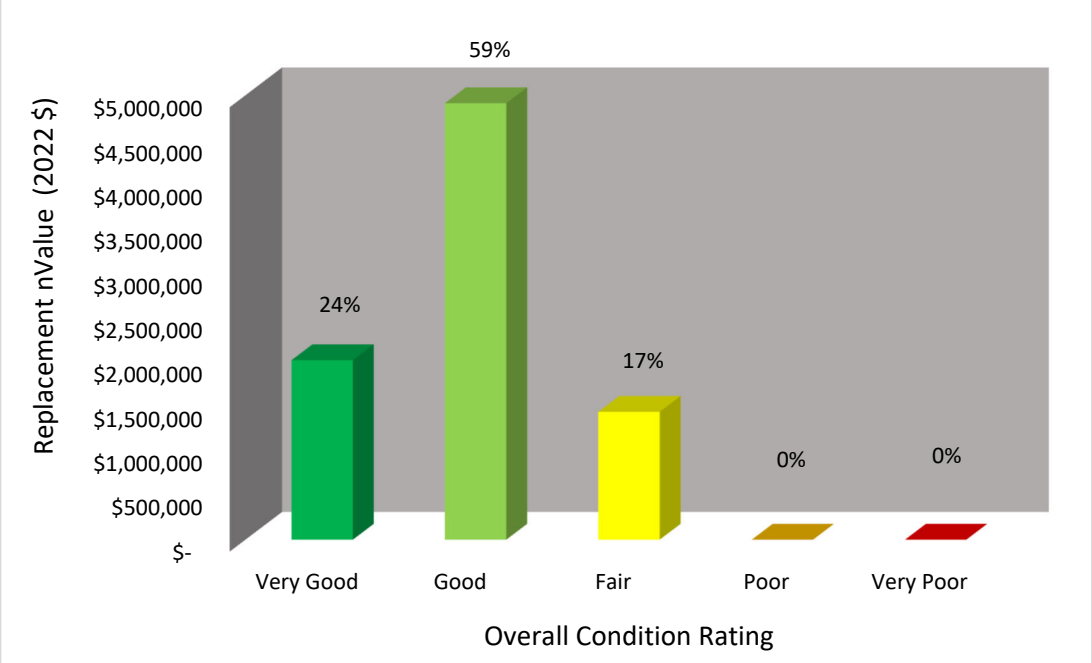
Remaining Useful Life (%)	Description
80 to 100	Very Good
60 to < 80	Good
40 to < 60	Fair
20 to < 40	Poor
0 to < 20	Very Poor

Based on the scoring scale of remaining useful service life, it was found that 100% of the Township's water distribution assets have a rating of very good or good condition. In addition, 83% of the water treatment and water storage assets have a very good or good condition rating.

Given the relatively young age of the system, there is a very high degree of confidence in the information and findings. Figures 4.3 and 4.4 below show the current ratings for both major systems.

Figure 4.3 – Condition Ratings – Water Distribution

Figure 4.4 – Condition Ratings – Treatment / Storage Assets



4.4 Data Sources

The inventories for the core water distribution assets were based on information obtained through the Township's GIS records (end of the December 31, 2022) and estimated construction costs were provided by each class. Assets that were put into active service from subdivision developments were also considered within these inventories. A summary of the data sources is included below:

Table 4.4 – Data Sources for Inventory, Cost and Condition Analysis

Asset	Inventory	Replacement Value	Condition Estimate
Raw Water Intake	Excel Record Water Treatment	Historical Cost Inflated	Based on Remaining Useful Service Life
Treatment Plant / Plant Upgrades	Excel Record Water Treatment	Historical Cost Inflated	Based on Remaining Useful Service Life
Elevated Water Storage Tower	Excel Record Water Treatment	Historical Cost Inflated	Based on Remaining Useful Service Life
Water Mains	GIS	Unit Construction Costs ($/ m)	Based on Remaining Useful Service Life
Hydrants	GIS	Unit Construction Costs ($/unit)	Based on Remaining Useful Service Life
Valves	GIS	Unit Construction Costs ($/unit)	Based on Remaining Useful Service Life
Services	GIS	Unit Construction Costs ($/unit)	Based on Remaining Useful Service Life
Meters	Excel Records Finance	Unit Construction Costs ($/unit)	Based on Remaining Useful Service Life

4.5 Levels of Service

Levels of Service (LOS) are statements that describe the outputs and objectives that the Township intends to deliver through the services to its businesses, residents and other stakeholders. Developing, monitoring and reporting on LOS are all key components of a performance management program which has the core objective of improved service delivery, accountability and transparency in services.

LOS can be guided by many factors including customer expectations, regulatory requirements, or operational policies and procedures. An effective asset management plan requires a formal framework of performance measures, targets, and timeframes to achieve targets. It is furthermore crucial that the cost to deliver the documented Level of Service is fully understood.

In order to meet the requirements of the regulation, this AM plan update will discuss current LOS under community and technical LOS categories, defined as:

- **Community Levels of Service**: Qualitative descriptions that demonstrate the Township's customer and stakeholders' expectations of drinking water services.
- **Technical Levels of Service**: Technical metrics that translate customer expectations into objectives and performance measures.

Ontario Regulation 588/17 currently sets out the core LOS requirements that all municipalities must discuss and report on in Table 4.5 below.

Table 4.5 – O. Reg. 588/17 Prescribed LOS for Water Assets

Service Attribute	Community LOS (Qualitative)	Technical LOS (Performance Metric)
Scope	Description which may include maps, of the user groups or areas of the municipality that are connected to the municipal water system. Description which may include maps, of the user groups or areas of the municipality that have fire flow.	Percentage of properties connected to the municipal water system. Percentage of properties where fire flow is available.
Reliability	Description of boil water advisories and service interruptions.	The number of connection-days per year where a boil advisory notice is in place compared to the total number of properties connected to the municipal water system. The number of connection-days per year due to water main breaks compared to the total number of properties connected to the municipal water system.

4.5.1 Community Levels of Service

Table 4.6 – Qualitative Description of Water Assets

Service Attribute	Community LOS (Required by O. Reg. 588/17)	Qualitative Description
Scope	Description which may include maps, of the user groups or areas of the municipality that are connected to the municipal water system.	The Township of South Frontenac has a Municipal Drinking Water System that serves the Village of Sydenham. This system includes a surface water intake on Sydenham Lake, a water treatment plant, a 1.2 megalitre elevated storage tower, 7km of water main and serves approximately 229 metered customers. A map of the water network can be found in Appendix B1 of this report.
Scope	Description which may include maps, of the user groups or areas of the municipality that have fire flow.	The water network map shown in Appendix B1 shows all of the locations of hydrants in the Village of Sydenham. All hydrants in the village carry a rating

		of A (1000 – 1499 GPM) or AA (1500 GPM or greater)
Reliability	Description of boil water advisories and service interruptions.	The Township has not issued any boil order advisory in the last three years (2020/2021/2022). The Township has not had any water main breaks in the last two years (2020/2021/2022) that have resulted in loss of service.
Reliability	Overall asset condition – Water Distribution assets with a rating of Good or Very Good.	100%
Reliability	Overall asset condition – Water Treatment and Storage Assets with a rating of Good or Very Good.	83%

4.5.2 Technical Levels of Service

Table 4.7 – Technical Levels of Service for Water System

Service Attribute	Technical LOS (Required by O. Reg. 588/17)	Measurement
Scope	Percentage of properties connected to the municipal water system.	At the end of 2022 there were 229 metered accounts which are connected to the system and an additional 60 properties are in the service area that have access to the service. Total percentage is 79.5% (229 of 288)
Scope	Percentage of properties where fire flow is available.	All 288 properties currently serviced in the Sydenham Village are supplied with fire flow protection. Total percentage is 100% (288 of 288)
Reliability	The number of connection-days per year where a boil advisory notice is in place compared to the total number of properties connected to the municipal water system.	There were no boil water advisories in either 2021 or 2022. 0 Connection-Days/Year (2022) 0 Connection-Days/Year (2021)

Reliability	The number of connection-days per year due to water main breaks compared to the total number of properties connected to the municipal water system.	There were no water main breaks in either 2021 or 2022 that resulted in loss of service. 0 Connection-Days/Year (2022) 0 Connection-Days/Year (2021)
Efficiency	*Energy consumption per Megalitre in KwH/ML Treated (Not required by O Reg 588/17)	 2,399 KwH/ML Treated (2022) 3,077 KwH/ML Treated (2021) 3,295 KwH/ML Treated (2020)

*Performance metrics are not required by O Reg 588/17)

4.6 Lifecycle Strategies

The Township's ability to deliver the levels of service outlined in the AMP is impacted by numerous factors including:

a) Current and forecasted growth within the service area;
b) Changes in legislative requirements and the need for equipment to operate in compliance under the Safe Drinking Water Act, Municipal Drinking Water License, Drinking Water Works Permit, and other related approvals;
c) Aging infrastructure and the associated need for increased operations, maintenance and renewals; and
d) Availability of funding resources driven by customer use, utility revenues, development charges and federal/provincial grant programs.

The Township currently contracts Utilities Kingston as the System Operator for the Sydenham Drinking Water System which includes a Class 1 Water Distribution System and a Class 2 Water Treatment Facility. As part of this contract, numerous asset management strategies are applied that include the operations, maintenance, construction, renewal and decommissioning of assets. For further details refer to Tables 4.8 and 4.9 below:

Table 4.8 – Maintenance and Monitoring – Water Distribution

Asset Type	Operational Activities	
	Current	Additional / Potential
Water Mains	• Inspections and Flushing • Leak Detection (As Required)	
Hydrants	• Inspected and Flushed Annually • Fire Flow Testing (5yr Cycle)	
Line Valves	• Inspected and Exercised Annually	
Services	• Inspections and maintenance as required	• Cathodic Protection for early corrosion of copper services

Meters	• Readings Bi-Monthly • Maintenance as required	• Convert all meters to Radio Read (2 remaining)
Backflow Prevention	• Inspect and Maintain Devices at Tower and Treatment Plant by certified staff.	
Bulk Water	• None	• New bulk water station at water tower site

Table 4.9 – Maintenance and Monitoring – Facilities

Facility System	Examples of Components	Operational Activities	
		Current	Additional / Potential Activities
Building Structural	Foundation, roofing, exterior walls, columns, beams staircases	• Repairs prescribed and prioritized by condition assessments. Last assessment was 2019.	• Establish regularly scheduled Building Condition Assessments
Buildings Architectural	Non-structural building components such as windows, doors, fixtures and floor coverings	• Repairs prescribed and prioritized by condition assessments. Last assessment was 2019.	• Establish regularly scheduled Building Condition Assessments
Buildings Mechanical and Electrical	HVAC, plumbing, electrical, lighting, communications, security	• Repairs prescribed and prioritized by condition assessments. Last assessment was 2019.	• Explore energy retrofits • One high lift pump on VFD currently (2019)
Process Structural	Water storage tanks	• Internal/external inspections on elevated tower on a 3-5yr basis. • Tower drained and rehabilitated in 2019. • Clear well at water plant manually inspected by certified staff. Drained and cleaned every 5-7yrs). Three separate cells.	• Establish regularly scheduled Condition Assessments
Process Electrical	Generators and electrical systems	• Measure station voltage (3-4 years) • Load test diesel generator every 2 weeks • Generator maintenance every 6 months • Check batteries monthly • Reactive repairs as required	

Table 4.9 – Maintenance and Monitoring – Facilities (Continued)

Facility System	Examples of Components	Operational Activities	
		Current	Additional / Potential Activities
Process Mechanical	Low lift pumps, high lift pumps, motors and valves	• Bi-annual inspections. • Routine maintenance on motors on daily rounds. • Check, clean and exercise valves • Routine PM inspections and repair needed. • Pump rebuilds are planned and included in Long Term Capital Plan.	
Process Piping		• Repairs are generally reactive • Replacement of pneumatic actuated valves (2022)	• Replacement program needed for serpentine piping for chlorine contact time – ICIP Grant Program for 2024/2025
Instrumentation and Controls	Flow meters, chlorine regulators, pressure transmitters	• Chlorine systems have preventative maintenance • Third party calibration programs on analysers and lab equipment • Regular PM work orders	
Raw Water Intake	Pumps and seasonal zebra mussel control system	• Monitoring of intake performance and seasonal organics • Divers inspect intake on a 3-4 year cycle.	• Condition assessments at intake in Sydenham Lake
Filters	Ceramic Filter Media (Macrolite) / Granular Activated Carbon	• Daily performance, monitoring, repairs as needed. • Chemical cleaning of media on 6month cycle • Testing of filter media quality annually	

Table 4.10 – Rehabilitation and Renewal – Water Assets

Asset Type	Capital Renewal Activities	
	Current	Additional / Potential
Watermains	• Spot repairs as required – usually in response to leaks • Reconstruction at end of useful service life	• Monitor new and emerging trenchless renewal technologies
Hydrants, Valves and Services	• Repairs as required – usually at stage of road renewals • Reconstruction at end of useful service life	
Water Treatment	• Replacement at end of useful service life	• Operational redundancies implemented with major renewals
Water Storage	• Repairs and coatings on tanks – outcomes of remote camera video (ROV) inspections • Reconstruction at end of useful service life	
Water Facilities (Buildings)	• Rehabilitation work as recommended through detailed building condition assessments.	

4.7 Current and Forecasted Operating and Capital Costs

The estimated costing for lifecycle activities and capital for water assets are shown in the table below with an estimated $1.6 million over a period of 10 years.

Table 4.11 – Water System Lifecycle Costs and Capital Costs

Year	Capital Cost	Year	Capital Cost
2023	$42,000	2028	$42,500
2024	$314,000	2029	$13,000
2025	$963,980	2030	$50,000
2026	$39,500	2031	$47,500
2027	$37,500	2032	$47,500
		TOTAL	$1,597,480

5 Core Assets – Stormwater Management

This section of the AM Plan provides details on the number, age distribution and condition of the Township's stormwater management system assets including treatment facilities, storm pipes, structures (manhole, catchbasin, etc..) and culverts.

5.1 Asset Inventory

The Township of South Frontenac currently owns and manages numerous storm water treatment and collection systems across the Township. The bulk of these drainage assets can be found in the settlement areas where urban (curbed) road cross sections are more common. Between 2015 and 2020 the Township installed four stormwater treatment units as part of major drainage projects in the village of Bellrock (2), Sydenham (1) and Sunbury (1).

The Township continues to collect and update data on these assets and records all information within the Corporation's asset management software. Field inspections and condition assessments that are performed on these assets continue to improve the both the quality and accuracy of the data compiled on these systems.

The total estimated replacement value for existing stormwater management system assets (2022) included in this AM plan is estimated at 10.2 million dollars. These values are expressed in 2022 dollars and can be found in Table 5.1 below.

Table 5.1 – Stormwater Management Assets Details and Valuation

Subservice	Major Asset Group	Process – Sub Asset Group	Asset Quantity (2022)	Unit	Replacement Value (2022 $M)
Stormwater Management System	Stormwater Treatment	Manufactured Treatment Devices	4	ea	0.225
	Storm Sewers	Up to 250mm	0.327	km	0.106
		>250 to 500mm	7.140	km	2.943
		>500 to 1050mm	3.281	km	1.789
	Structures (Concrete)	Catchbasin	199	ea	0.697
		Catchbasin Manhole	99	ea	0.634
		Double Catchbasin	40	ea	0.232
		Double Catchbasin Manhole	11	ea	0.098
		Ditch Inlet	29	ea	0.157
		Manhole	20	ea	0.124
	Culverts (<3m dia)	*Culverts	14	ea	3.191

*Note Inventory in progress.

5.2 Profile and Age of Assets

The Township carried out extensive research on the age of its stormwater management assets as part of the 2016 Asset Management Plan update and that data continues to improve over time with the implementation of the new AM software platforms. The details provided in Figures 5.1 and 5.2 shows the representation of the respective age distribution for stormwater treatment and stormwater collection assets.

Figure 5.1 – Age Profile – Stormwater Treatment Unit Assets

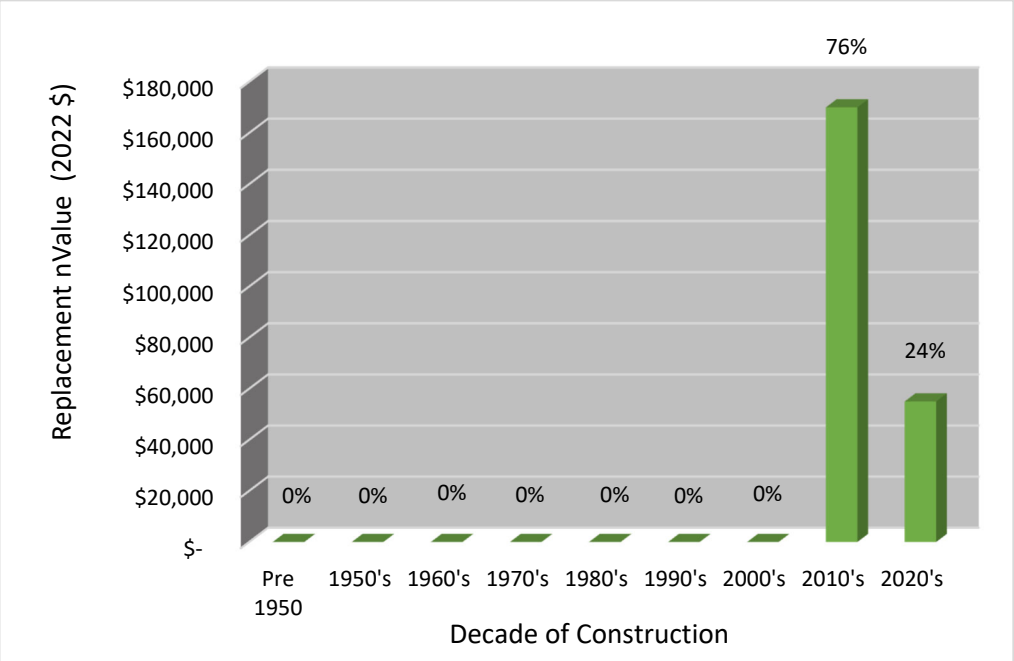
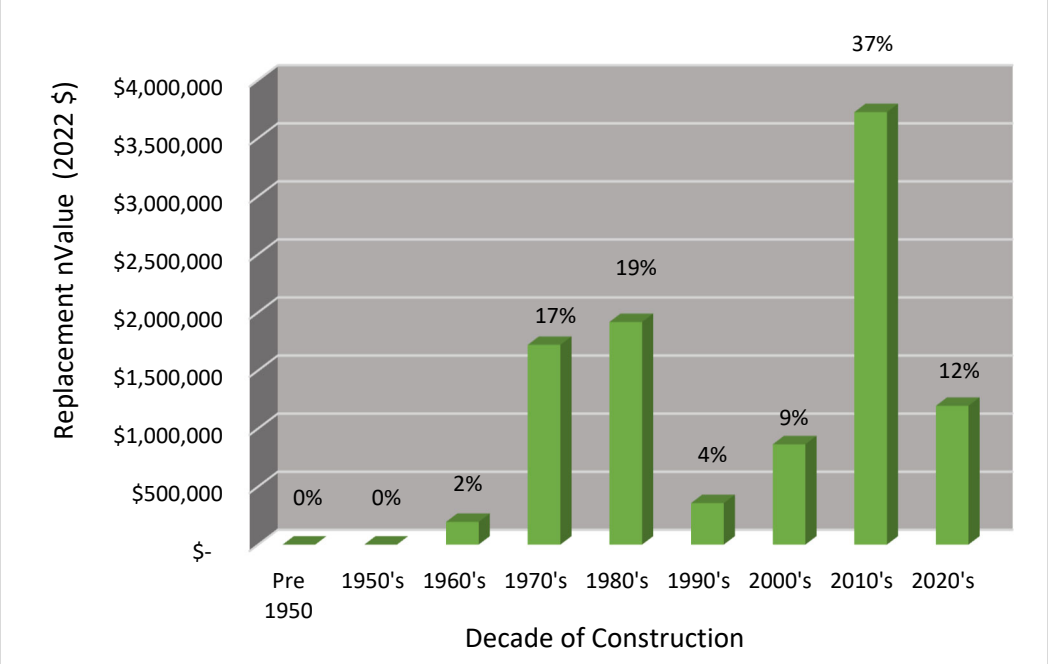


Figure 5.2 – Age Profile –Storm Collection Assets



Note: Age on culvert data insufficient for compiling with storm collection assets.

Table 5.2 – Core Stormwater Asset Age

Subservice	Major Asset Group	Process – Sub Asset Group	Useful Service Life (yrs)	Average Age (2022)	Estimated Remaining Service Life (2022)
Stormwater Management System	Stormwater Treatment	Stormwater Treatment Units – Oil Grit Separator	50	4.7	45.3
	Stormwater Collection	Concrete, HDPE and PVC Storm Pipe	80	22.9	57.1
		Corrugated Steel Storm Pipe	50	33.4	16.6
		Stormwater Structures (MH, CB, DI etc…)	80	26.4	53.6

5.3 Asset Conditions and Ratings Systems

The condition rating for stormwater treatment assets was established by evaluating the useful service life remaining. The amount of remaining useful life on all of the assets has been updated from the 2016 AMP and has been correlated to the condition rating schedule below.

Table 5.3 – Five Point Condition Rating System

Remaining Useful Life (%)	Description
80 to 100	Very Good
60 to < 80	Good
40 to < 60	Fair
20 to < 40	Poor
0 to < 20	Very Poor

Based on the scoring scale of remaining useful service life, it was found that 100% of the Township's stormwater treatment assets have a rating of very good or good condition. The stormwater collection system however only has 59% of the assets with a very good or good

condition rating. This is largely due to the fact that a significant portion of the networks were built in the 70's and 80s and are comprised of corrugated steel pipe.

Figures 5.3 and 5.4 below show the current ratings for both major systems.

Figure 5.3 – Condition Ratings – Stormwater Treatment Units

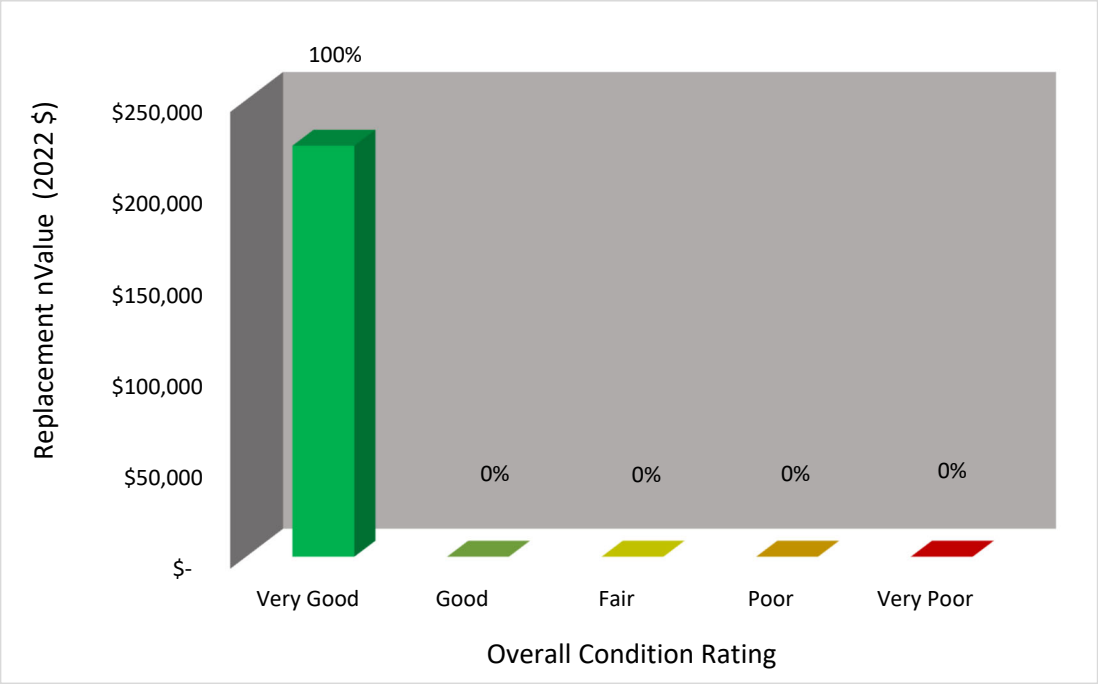
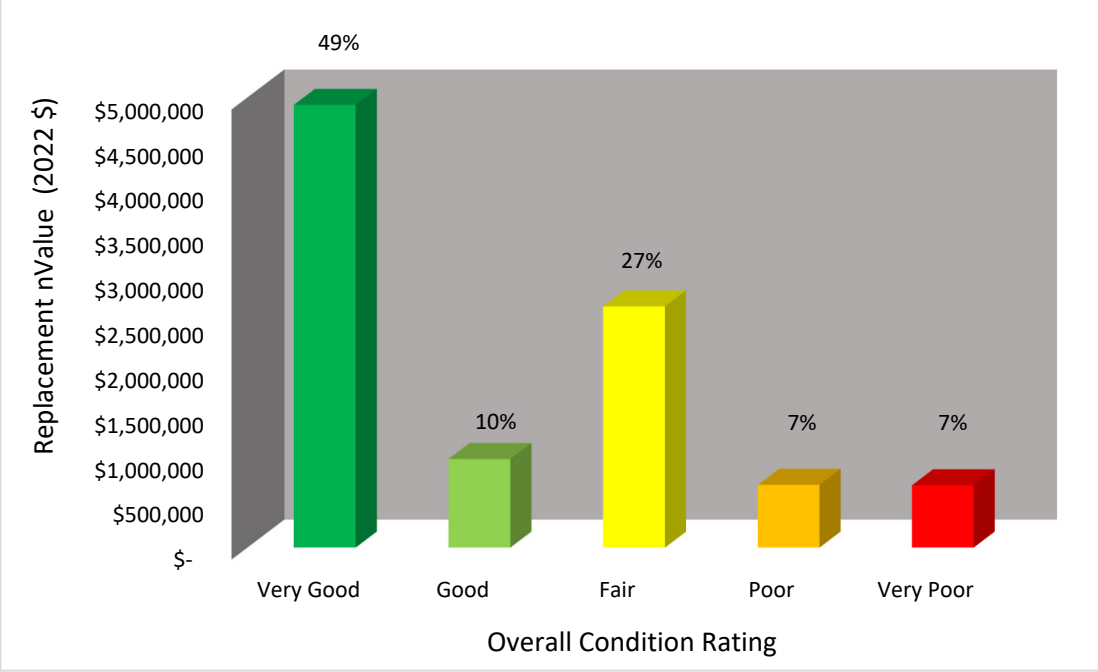


Figure 5.4 – Condition Ratings – Stormwater Collection Assets



5.4 Data Sources

The inventories for the core stormwater management assets were based on information obtained through the Township's GIS records (end of the December 31, 2022) and estimated construction costs were provided by each class. Assets that were put into active service from subdivision developments were also considered within these inventories. A summary of the data sources is included below:

Table 5.4 – Data Sources for Inventory, Cost and Condition Analysis

Asset	Inventory	Replacement Value	Condition Estimate
Stormwater Treatment Units / Oil Grit Separators	GIS	Unit Construction Costs ($/ m)	Based on Remaining Useful Service Life
Storm Pipe	GIS	Unit Construction Costs ($/ m)	Based on Remaining Useful Service Life
Stormwater Structures (MH, CB and DI)	GIS	Unit Construction Costs ($/unit)	Based on Remaining Useful Service Life

5.5 Levels of Service

Levels of Service (LOS) are statements that describe the outputs and objectives that the Township intends to deliver through the services to its businesses, residents and other stakeholders. Developing, monitoring and reporting on LOS are all key components of a performance management program which has the core objective of improved service delivery, accountability and transparency in services.

LOS can be guided by many factors including customer expectations, regulatory requirements, or operational policies and procedures. An effective asset management plan requires a formal framework of performance measures, targets, and timeframes to achieve targets. It is furthermore crucial that the cost to deliver the documented Level of Service is fully understood.

In order to meet the requirements of the regulation, this AM plan update will discuss current LOS under community and technical LOS categories, defined as:

- **Community Levels of Service**: Qualitative descriptions that demonstrate the Township's customer and stakeholder's expectations of drinking water services.
- **Technical Levels of Service**: Technical metrics that translate customer expectations into objectives and performance measures.

Ontario Regulation 588/17 currently sets out the core LOS requirements that all municipalities must discuss and report on in Table 5.5 below.

Table 5.5 – O. Reg. 588/17 Prescribed LOS for Stormwater Assets

Service Attribute	Community LOS (Qualitative)	Technical LOS (Performance Metric)
Scope	Description which may include maps, of the user groups or areas of the municipality that are protected from flooding, including the extent of the protection by the municipal stormwater management system.	Percentage of properties in municipality resilient to a 100-year storm. Percentage of the municipal stormwater management system resilient to a 5-year storm.

5.5.1 Community Levels of Service

Table 5.6 – Qualitative Description of Stormwater Assets

Service Attribute	Community LOS (Required by O. Reg. 588/17)	Qualitative Description
Scope	Description which may include maps, of the user groups or areas of the municipality that are protected from flooding, including the extent of the protection by the municipal stormwater management system.	The Township of South Frontenac has numerous stormwater collection and treatment systems throughout the municipality. Most of these systems are found in the villages and hamlets where urban road treatments present. Maps of the Stormwater network can be found in Appendix C1 of this report.
Reliability	*Stormwater Treatment assets with a rating of Good or Very Good.	100%
Reliability	*Stormwater Collection Assets with a rating of Good or Very Good.	59%

*Reliability metrics are not required by O Reg 588/17)

5.5.2 Technical Levels of Service

Table 5.7 – Technical Levels of Service for Stormwater System

Service Attribute	Technical LOS (Required by O. Reg. 588/17)	Measurement
Scope	Percentage of properties in municipality resilient to a 100-year storm.	NOTE: The metrics from Asset Management Ontario state that inputs for this metric include flood mapping and parcel mapping. Local street and subdivision drainage plans are also included where major overland flow routes are provided. At present, there is insufficient information to accurately report a network level. The acquisition of updated LiDAR mapping by the County, lower tier municipalities and conservation authorities in 2023 will help support development of these metrics. A comprehensive stormwater management plan looking at serviced areas (villages/hamlets) would also support these climate change initiatives.
Scope	Percentage of the municipal stormwater management system resilient to a 5-year storm.	NOTE: The metrics from Asset Management Ontario state that inputs for this metric include the proportion of the system that has been constructed or re-constructed to updated standards. A review of the past Environmental Compliance Approval records for the Township has confirmed that Ministry ECA approvals can be found for approximately 2,455m of the network confirming that design standards were met for the minor (5yr) and major (100yr) events. This information places the current metric at 22.7%.

5.6 Lifecycle Strategies

The Township's ability to deliver the levels of service outlined in the AMP is impacted by numerous factors including:

a) Current and forecasted growth within the service area;
b) Changes in legislative requirements and the need for equipment to operate in compliance under the Environmental Protection Act, Ontario Water Resources Act, Environmental Compliance Approvals and other related approvals;
c) Aging infrastructure and the associated need for increased operations, maintenance and renewals; and
d) Availability of funding resources driven by taxation, development charges and federal/provincial grant programs.

For further details on lifecycle activities on the stormwater network refer to Tables 5.8 and 5.9 below:

Table 5.8 – Maintenance and Monitoring – Stormwater Management

Asset Type	Operational Activities	
	Current	Additional / Potential
Stormwater Treatment Units	• Inspections annually • Test, clean and remove sediments and hydrocarbons	
Stormwater Mains	• Visual inspection at exposed ends during catchbasin cleaning	• Establish a committed annual CCTV program
Catch basins	• Inspected and Cleaned Annually	
Manholes	• Inspections and maintenance as required	• Spring and Fall inspections
Inlets / Outlets	• Inspections and maintenance as required	• Spring and Fall inspections

Table 5.9 – Rehabilitation and Renewal – Stormwater Management

Asset Type	Capital Renewal Activities	
	Current	Additional / Potential
Stormwater Treatment Units	• Spot repairs as required – usually at the stage of road renewals • Reconstruction at end of useful service life	

Stormwater Mains and Structures	• Spot repairs as required – usually at stage of road renewals • Reconstruction at end of useful service life	• Develop & implement committed annual trenchless lining programs • Develop & implement committed annual structure repair program
Culverts	• Replacements on larger culverts (1-3) based on monitoring programs • Culverts renewed with road reconstruction activities	• Improve resources for data collection to support inventory and spatial records on cross culverts • Develop & implement committed annual culvert lining programs on major roadways

5.7 Current and Forecasted Operating and Capital Costs

The estimated costing for lifecycle activities and capital for stormwater assets are shown in the table below with an estimated $0.68 million over a period of 10 years.

Table 5.10 – Stormwater Asset Lifecycle Costs and Capital Costs

Year	Capital Cost
2023	$274,350
2024	$0
2025	$43,297
2026	$154,730
2027	$0
2028	$216,360
2029	$0
2030	$0
2031	$0
2032	$0
TOTAL	$688,737

6.0 Asset Management Strategy

6.1 Asset Management Strategy

This asset management strategy component of the AMP represents the set of planned activities to ensure that the state of the infrastructure achieves the level of service goals. The strategy is generally related to optimizing decisions with respect to:

- The replacement or rehabilitation of assets
- The optimal level of maintenance investment required to minimize the long-term costs of the assets (i.e., does more maintenance result in a longer useful life?)
- Disposing of assets that are not required to meet service levels; and
- Addressing Township policies that impact the infrastructure intervention that is used (i.e., does the asset size/design need to change to meet a certain policy?)

6.2 Risk Management

The AMP establishes the management of risk as the primary method for developing an asset management strategy. This strategy is to prioritize the renewal of infrastructure that represents a high risk to the Township. However, these priorities are also adjusted or shifted for financial efficiencies, to create capacity, optimize asset life, as well as external influences. The risk management strategy develops a renewal plan that is based on addressing the highest risk assets first according to the state of the infrastructure.

6.2.1 Probability of Failure

A probability of failure was given to each asset based on the condition ratings discussed in the Technical Levels of Service. The probability of an asset failing is not necessarily indicative of its age. As part of the review of transportation assets, the PCI and BCI inspection ratings heavily inform the probability of failure however other assets like underground watermains cannot be readily inspected therefore remaining useful life is considered. Table 13 below shows the probability of failure score that was assigned to each asset based on the estimate of its physical condition and age.

Table 6.1 – Probability of Failure Score

Estimated Condition	Probability of Failure Description	Probability of Failure Score
Very Good	Improbable	1
Good	Not Likely	2
Fair	Possible	3
Poor	Likely	4
Very Poor	Very Probable	5

6.2.2 Consequence of Failure

The consequence of failure score for each asset was based on a review of information on the asset such as:

- Risk to public health and safety
- Duration of interruption of service
- Potential for environmental damage
- Value of the asset
- Council Priority

Table 6.2 shows the failure of consequence scorings and provides descriptions of each.

Table 6.2 – Consequence of Failure Score

Probability of Failure Description	Consequence of Failure Score
Very low measurable impact of any kind.	1
Low/seldom/marginal impact on the function, serviceability, or capacity of the asset and (or) effect on public safety and the environment.	2
Moderate/regular impact on the function, serviceability, or capacity of the asset and (or) effect on public safety and the environment.	3
Major/regular impact on the function, serviceability, or capacity of the asset and (or) effect on public safety and the environment.	4
Catastrophic loss of infrastructure affecting public safety or having severe environmental consequences.	5

6.2.3 Risk Assessment Matrix

A risk score between 1 and 25 was calculated for each asset by multiplying the probability of failure score and the consequence of risk score. Assets with known safety risks were noted and given higher priority for replacement. Figure 6.1 and Table 6.3 below provide the details of the current risk assessment matrix.

Figure 6.1 – Risk Matrix

Score of 1 to 3 – low level risk
Score of 4 to 6 – medium-low level risk
Score of 8 to 9 – medium level risk
Score of 10 to 15 – medium-high level risk
Score of 16 to 25 – high level of risk

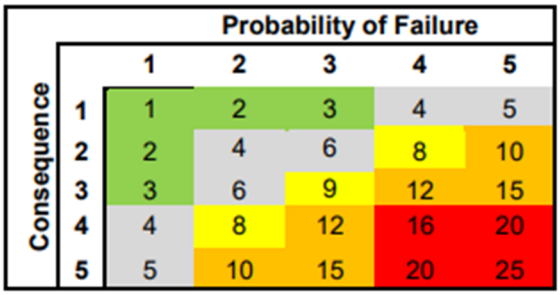


Table 6.3 – Renewal Strategy based on Risk

Risk Category	Risk Score	Replacement Term	Replacement Years
High	16 - 25	Short Term	Year 1 to 5
Medium	10 – 15	Medium Term	Year 6 to 10
Medium Medium – Low Low	7 – 9 4 – 6 1 - 3	Long Term – regular planned renewal based on condition, age of asset, expected useful life or when asset reaches a higher risk level (i.e., probability of consequence or failure increases)	

The strategy to prioritize the renewal of infrastructure that represents a high risk to the Township should be continued or expanded. The Township should continue to consider other factors when prioritizing asset replacement such as health and safety, accessibility, complimentary asset replacement (bundling assets such as road reconstruction with storm sewers and watermains) as well as upgrades/improvements including intersections, public safety, growth or capacity related demands. The replacement strategies established through asset management software considers complimentary asset replacement to optimize use of resources and minimize disruption to the community. Appendix D1 provides risk rating systems, many of which continue to be in place from the 2016 AMP plan.

As part of the 2023 Core Asset review, all of the asset groups were analyzed and were updates for condition ratings and risk distribution. Figure 6.2 below shows the overall condition ratings for the system. Figure 6.3 shows the same asset groups with the risk ratings presented by area. Overall, the Township has a lower risk distribution in the water

and storm sewer areas however there is a higher risk distribution of risk in the area of roads and bridges.

Figure 6.2 – Overall Core Asset Condition Ratings

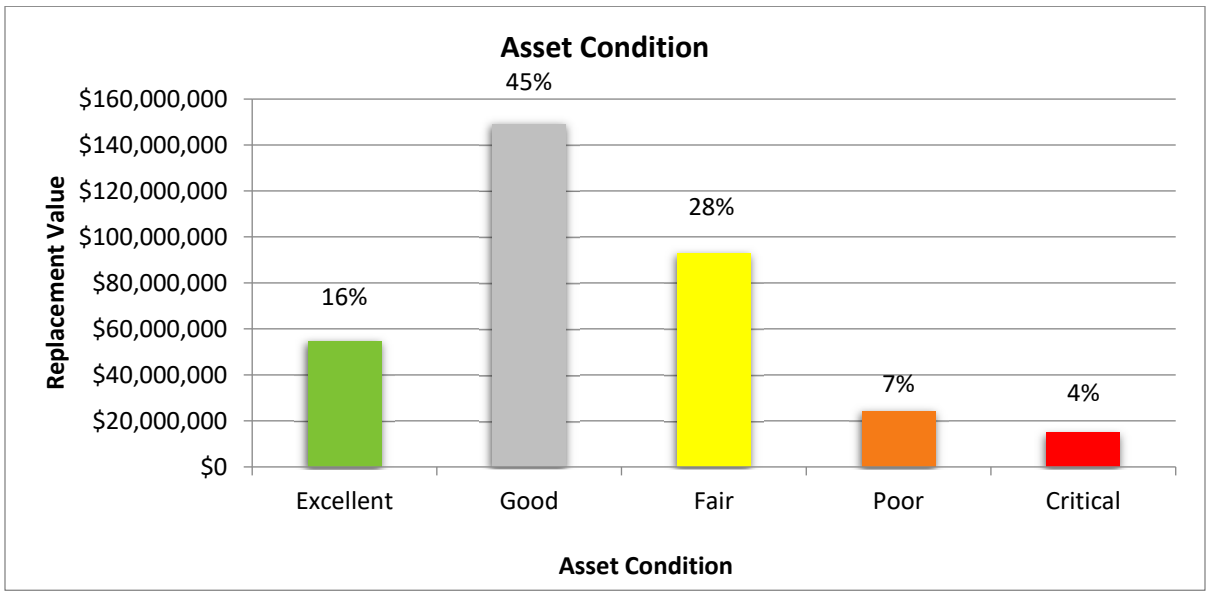
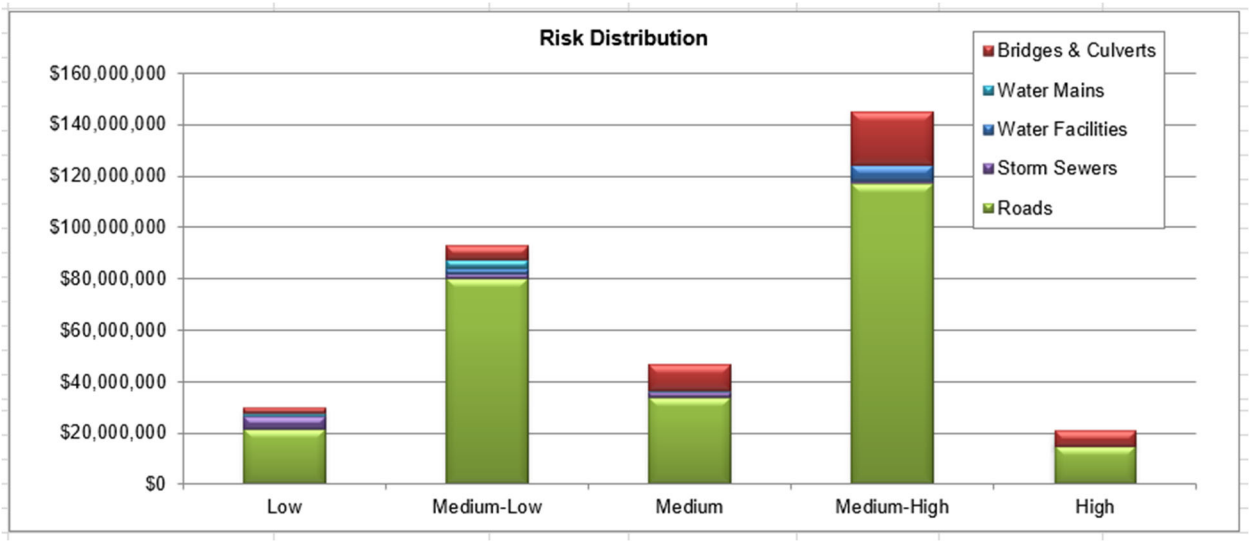


Figure 6.3 – Overall Core Asset Risk Distribution

			Risk Distribution				
	Replacement Cost	Distribution	Low	Medium-Low	Medium	Medium-High	High
Roads	$267,210,200	80%	$21,315,100	$79,860,350	$33,817,450	$117,278,800	$14,938,500
Bridges & Culverts	$45,043,714	13%	$2,205,000	$5,584,004	$10,371,860	$20,733,650	$6,149,200
Water Facilities	$8,372,183	2%	$0	$2,021,433	$0	$6,350,750	$0
Water Mains	$4,847,116	1%	$1,105,258	$3,389,453	$352,404	$0	$0
Storm Sewers	$10,194,159	3%	$5,090,291	$2,102,327	$2,151,997	$802,693	$46,851
Total	$335,667,371	100%	$29,715,649	$92,957,566	$46,693,711	$145,165,893	$21,134,551
% of Total			8.9%	27.7%	13.9%	43.2%	6.3%



7.0 Financing Strategy

The Township's asset management plan total assets for the next 10 years align with amounts in the Township's Long Range Financial Plan. This is important, as the decisions of the current Council regarding financing of these assets, must prepare for the future costs of the assets. As indicated before, Council must continue to grow reserves now, in order to ensure there is enough funding in place for future years as the infrastructure needs renewal.

Further update to this plan to add non-core assets and predict future levels of service will increase the financing requirements for the asset renewals. The current Long Range Financial Plan will need to be updated and consideration given to a larger portion of the annual tax base being allocated to reserves for these projected costs. The current annual capital levy funds current levels of service but will be inadequate in the future beyond the next 4 years.

7.1 Sources of Funding

There are many sources of funding, besides the annual tax levy, and these may include:

- Debt
- Reserves
- User Rates
- Canada Community Building Fund ("CCBF") (formerly Federal Gas Tax)
- Ontario Community Infrastructure Fund ("OCIF")

From time to time the Federal and Provincial governments will also announce one-time funding such as the Investing in Canada Infrastructure (ICIP) grants. The province of Ontario is announcing in 2024 the Housing Enabling Water Systems Fund, which may also assist with Financing core Water assets, however if the funding is for growth, like Development Charges, those funds will not assist with the assets listed in this plan.

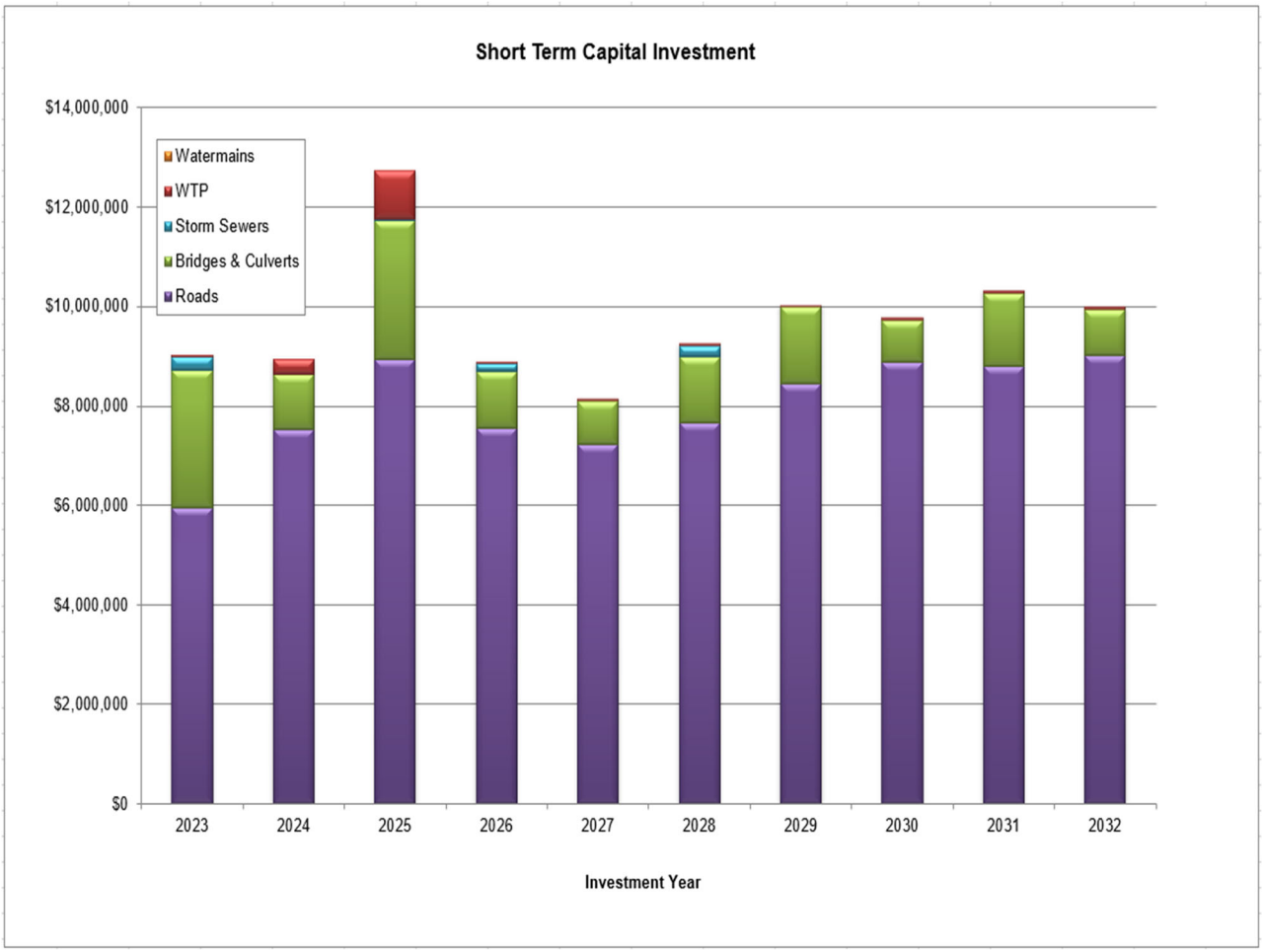
The Township of South Frontenac provides funding for assets through two sources of revenue: Water User Fees and Municipal Tax Levy. Further, assets are also funded through existing reserves. The financing strategy supports this method of operating by addressing Water and other assets separately.

In 2012, South Frontenac approved a 1% tax levy increase, compounded yearly, which goes into the Asset Investment Reserve. This strategy is a proactive way to deal with infrastructure deficit, and is a best practice recommended by all regulatory agencies. The amount of the annual levy increase of 1% will not be sufficient, based on this asset management plan to fund replacement of assets. While it has helped to offset capital expenditures for tax supported assets for the past 10 years, for the next 10, it will not be sufficient, and Council will have to review the annual contribution.

7.2 Short Term Funding Strategy

The strategy to prioritize the renewal of infrastructure that represents a high risk to the Township should be continued and expanded. Figure 7.1 below illustrates the 10 year capital investment needs for the Township's Core Assets using the risk-based approach. Over the next 10 years, the Township should spend an average of $9.7 million per year to address the infrastructure needs (in constant 2022 dollars).

Figure 7.1 – 10 year Core Asset Capital Investment Needs



7.1.1 Water Assets

The water treatment plant, water storage facility and water mains were constructed in the past 20 years; as such, these assets are not expected to require major capital replacement in the short term.

In 2014, The Township implemented a rate change which has already reduced the deficit. The Revenues and Capital Expenditures for water infrastructure over the next 10 years are displayed in Figure 7.1.1.

Figure 7.1.1 Short Term Capital Expenditures (Water Assets)

Year	Opening Balance	Expenditures	Capital Levy	Ending Balance
2023	1,562,158	314,000	165,949	1,414,107
2024	1,414,107	963,980	166,298	616,425
2025	616,425	3,500	166,626	779,552
2026	779,552	39,500	166,931	906,983
2027	906,983	37,500	167,213	1,036,696
2028	1,036,696	42,500	167,213	1,161,409
2029	1,161,409	13,000	167,213	1,315,621
2030	1,315,621	50,000	167,213	1,432,834
2031	1,432,834	47,500	167,213	1,552,547
2032	1,552,547	47,500	167,213	1,672,260
Total		**1,558,980**		

7.1.2 Tax Supported Assets

Tax supported infrastructure includes roads, bridges, culverts and storm sewers. The Revenues and Capital Expenditures for tax supported infrastructure over the next 10 years are displayed in Figure 7.1.2.

Over the course of the next 10 years the current Tax Supported Capital Levy is sufficient to finance the Asset Management Plan expenditures. However, the AMP needs to be reviewed on a regular basis as it presents yearly capital expenditures based on their priorities from condition and risk and further does not reflect the savings from strategies already being used such as pavement preservation and joint tendering.

Increases in the annual amount allocated to the Asset Investment Reserve on an annual basis by increasing the tax levy and changes in revenues from government sources such as the CCBF and OCIF funds are not included in the calculations below.

Year	Opening Balance	Expenditures	Tax Levy (AIR) & in year taxation	Reserves & Funding	Ending Balance
2023	7,842,164	8,984,850	3,652,016	4,368,358	6,877,688
2024	6,877,688	8,627,700	3,834,617	4,586,776	6,671,381
2025	6,671,381	11,762,157	4,026,348	4,816,115	3,751,687
2026	3,751,687	8,845,980	4,227,665	5,056,921	4,190,293
2027	4,190,293	8,103,640	4,439,048	5,309,767	5,835,468
2028	5,835,468	9,209,860	4,661,000	5,575,255	6,861,863
2029	6,861,863	9,989,448	4,894,050	5,854,018	7,620,483
2030	7,620,483	9,734,150	5,138,753	6,146,719	9,171,805
2031	9,171,805	10,276,250	5,395,691	6,454,055	10,745,301
2032	10,745,301	9,933,500	5,665,476	6,776,758	13,254,035
TOTAL		**95,467,535**			

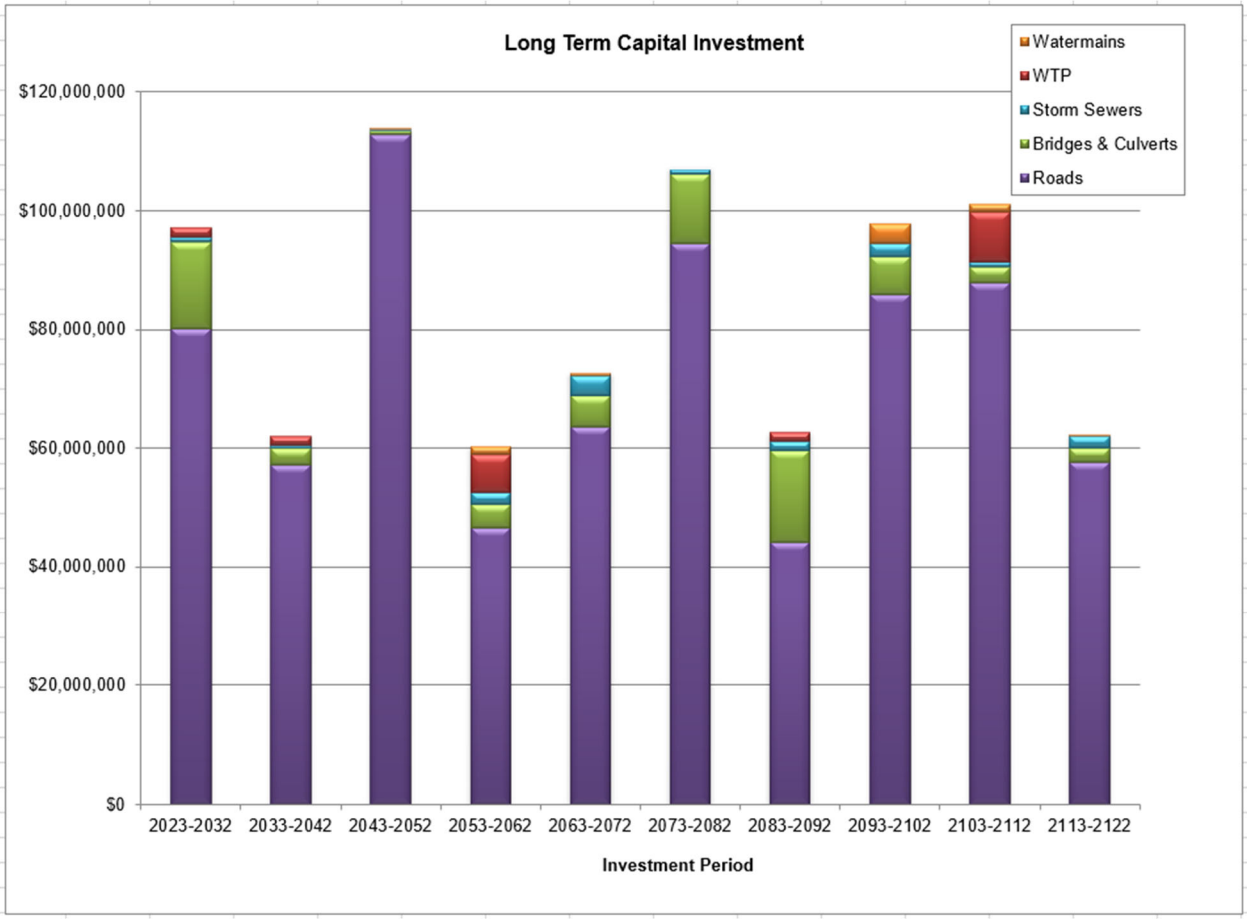
7.3 Long Term Financing Strategy

Long-term investment over the next 100 years must be considered to plan the replacement of assets with longer lifecycles. Buried infrastructure such as storm sewers and water mains are expected to have a useful life of 80 to 100 years and may last even longer. Similarly, newly constructed water facilities have expected useful lives of 100 years. To capture replacement of all assets the full life cycle period must be considered.

Long-term investment associated with replacement needs for first, second, and third replacements over the next 100 years were based on condition, age and remaining useful life.

Figure 7.2 below illustrates the 100-year capital investment needs for the Township's Core Assets based on a strategic review of the replacement cost and theoretical useful life of each core asset group.

Figure 7.2 – 100 year Core Asset Capital Investment Needs



Based on this review, the existing core infrastructure needs are approximately $8.3 million per year (in constant 2022 dollars) to be sustained using this strategic approach.

7.4 A Living Document

The Asset Management Plan is a “living document” that is updated annually to ensure all core assets are captured in inventories with the respective valuation. Information on the condition of assets will be updated regularly along with the risk profiled and project priorities may therefore be changed at the discretion of Council. The 2023 Asset Management Plan - Core Asset Update is intended to be a guiding document as part of the development of annual budgets and long-term capital plans.

8.0 Conclusions and Recommendations

The Township's Asset Management Plan, relating to the core infrastructure identifies a long-term need of $8 – $10 million per year to renew the Township's infrastructure for core assets in the scope of this study. Asset renewal in the short term should be prioritized to minimize risk and address health and safety concerns.

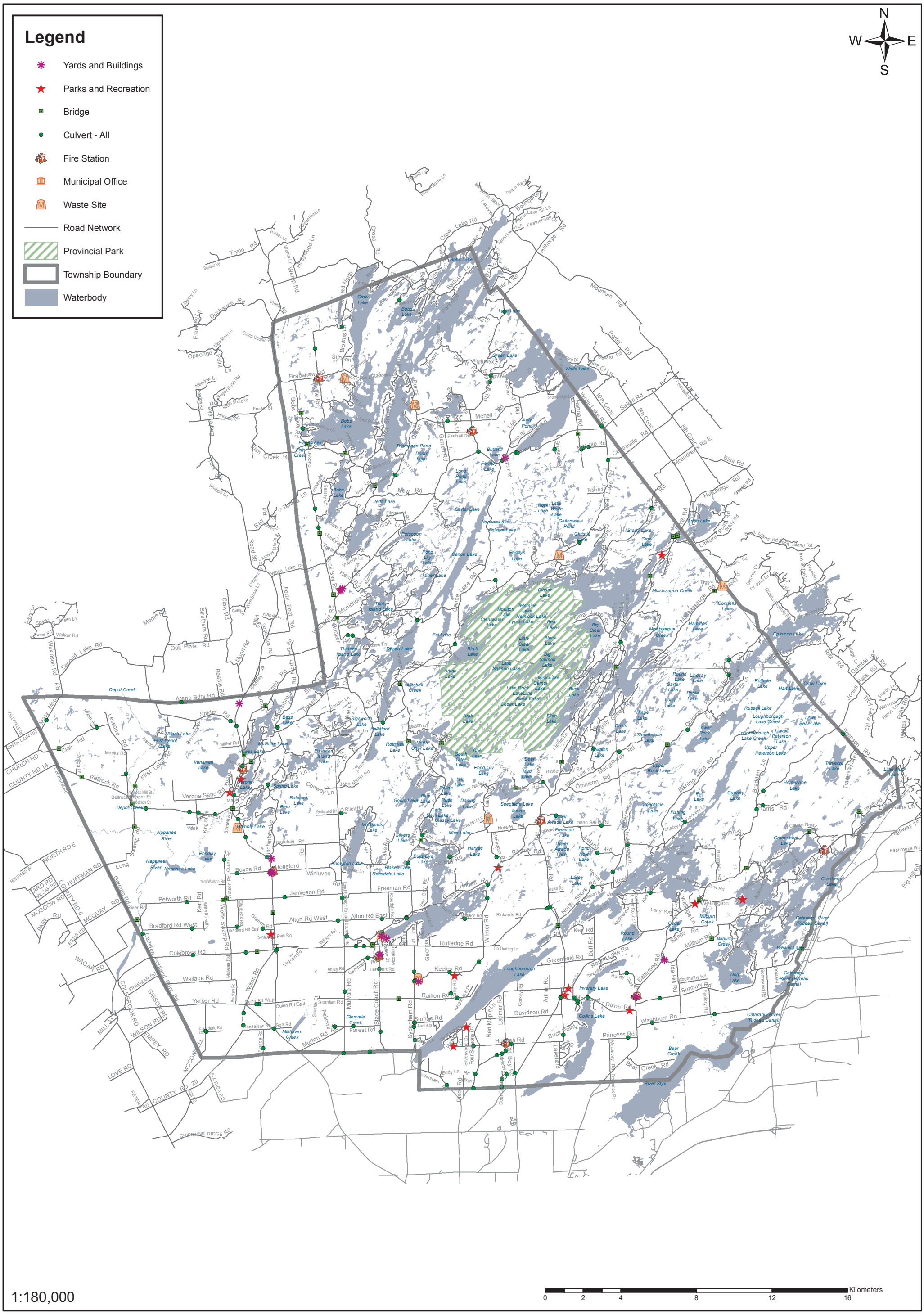
The Township has taken a proactive approach in addressing infrastructure needs by setting aside reserve funds to minimize deficits, approving levy increases to cover future deficits and investing in asset management software to better understand infrastructure conditions, risk and replacement needs. The Township is committed to maintain an up-to-date asset management database and prioritizing asset repair, replacement and rehabilitation. Further it is committed to using preventative strategies, joint tendering and continued investigations in emerging technologies. The Township is in a better position financially than many municipalities in Ontario and should continue to engage in forward thinking through financial planning.

The Township provides funding for core assets through two sources of revenue: Water User Fees and Municipal Tax Levy. Reserves are also used as a source of funding. Both in the short term and the long term, the financing strategies being used including the use of a long-range financial plan puts the Township in a position to meet future requirements.

Over the coming years, the Township will continually review the infrastructure needs as more information is gathered. The Township will continue to set aside funds for asset replacement, built appropriate depreciation costs into future water rate adjustments, and continue to pursue Provincial and Federal Grants. The strategy positions the Township on a path to ultimately reach a point where the infrastructure needs equal the available revenues.

Appendix A1

Township of South Frontenac



Appendix A-2

Typical Road Class Pavement Conditions

Pavement condition index (PCI) is a rating system that measures the condition of the roadway. It uses two components: a ride comfort rating (RCR) and a distress manifestation index (DMI). The DMI is a visual inspection that rates the road based on physical condition of, and/or damage to the road (pavement and shoulders).

See figures below for images of road conditions within the Township.

Figure A-2.1 – Very Good (85 to 100 PCI) – Sunbury Road – Factory Road to Battersea Road

Figure A-2.2 – Good (70 to < 85 PCI) – Bellrock Road –0.8km West of Mill Street to Long Swamp Road

Figure A-2.3 – Fair (55 to < 70 PCI) - Rutledge Road – 2.2km East of Sydenham Road to Perth Road

Figure A-2.4 – Poor (40 to < 55 PCI) - Bellrock Road – Cross Road to Road 38 (Prior to Reconstruction)

Figure A-2.5 – Very Poor (0 to < 40 PCI) – Bedford Road – 1km North of Salmon Lake Road to Desert Lake Road

Appendix A-3

Bridge and Large Culvert Conditions

The Bridge Condition Index (BCI) provides an indication of the general overall condition of the bridge or structure culvert (3m plus span). It consists of an inspection by a professional engineer according to the Ontario Structural Inspection Manual which includes up to 55 structural elements.

The BCI is grouped into five categories of Very Good, Good, Fair, Poor and Very Poor. Photos provided below show examples of bridges and culverts in the categories of Good, Fair and Poor.

Figure A-3.1 – Example of Good Condition Bridge – Loughborough Lake Bridge - 1.0km South of Rutledge Road (BCI 74.6)

Figure A-3.2 – Example of Fair Condition Bridge – Rutledge Road Bridge – 0.03km West of George Street (BCI 65.0)

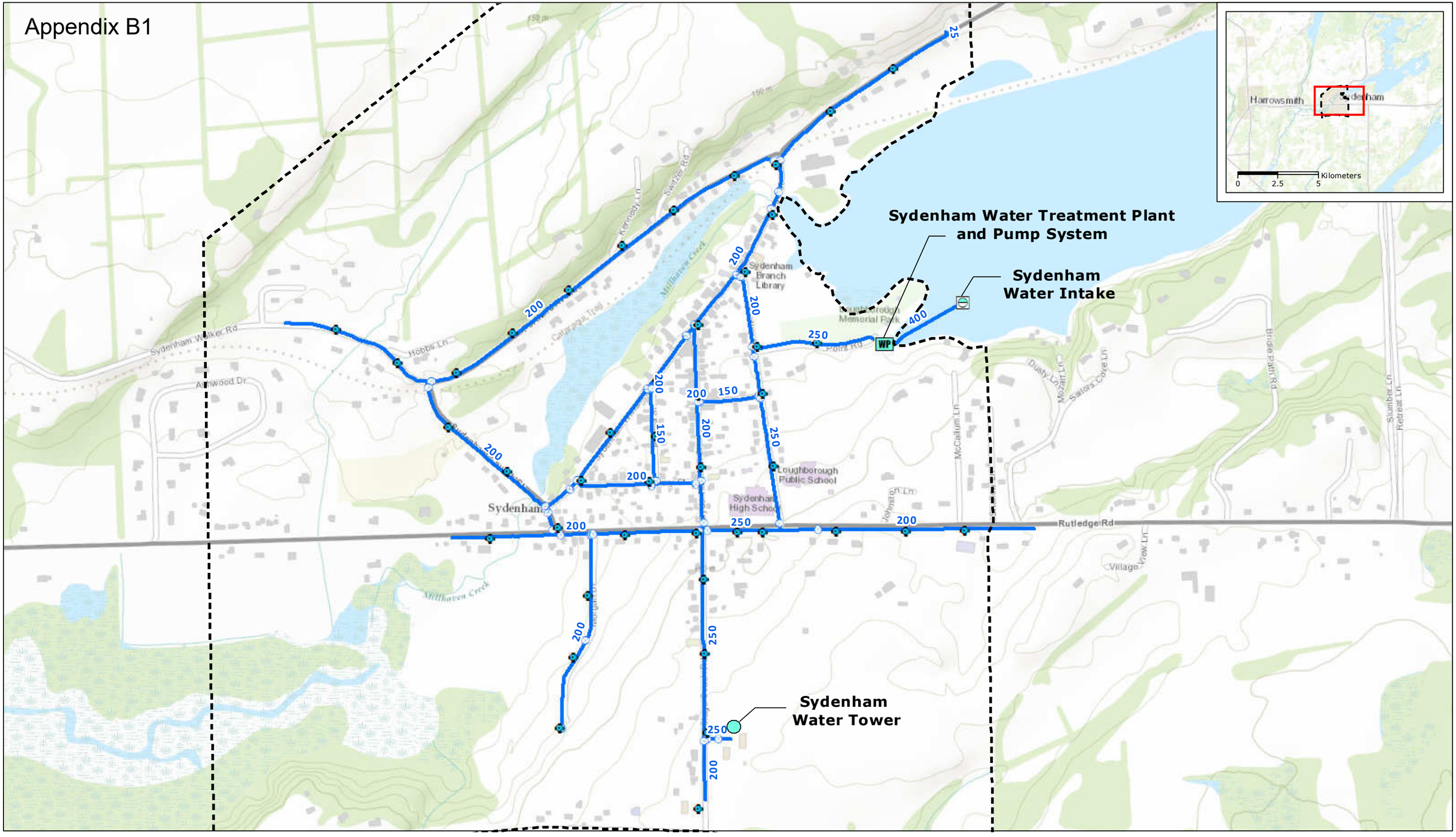
Figure A-3.3 – Example of Poor Condition Bridge – Eagle Creek Bridge – 2.2km North of Buck Bay Road (BCI 38.5)

Figure A-3.4 – Example of Good Condition Culvert – Massassauga Road Culvert – 5.1km East of Perth Road (BCI 92.1)

Figure A-3.5 – Example of Fair Condition Culvert – Colebrooke Road Culvert – 0.9km West of Road 38 (BCI 63.8)

Figure A-3.6 – Example of Poor Condition Culvert – Little Long Lake Road 3.2km North of Freeman Road (BCI 41.3)

Appendix B1



Distribution System Map
Sydenham Water System

Utilities Kingston

Legend

- Hydrant (43)
- Valve (41)
- Watermain
- Sydenham Boundary

N

Utilities Engineering - GIS

1:7,500

0 100 200 300 400 m

Utilities Kingston - 85 Lappan's Lane, Kingston, ON PO Box 790
K7L 4X7 - Utilities_GIS@utilieskingston.com - 613-546-1181

Revision: 1
Units: Meters
CRS: NAD 1983 UTM Zone 18N

Producer: jdonald
Reviewer: J. Runions
Created: 2020-01-09
Modified: 2022-09-07

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STORM SEWER COLLECTION SYSTEM

VILLAGE OF INVERARY
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

- Road
- Rivers
- Hamlet
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel

*Hamlet falls within the Cataraqui Region Conservation Authority.

0 5 10 20 30 40 50
Meters
UTM Zone 18 NAD 83

DRAWING #: SWM-01

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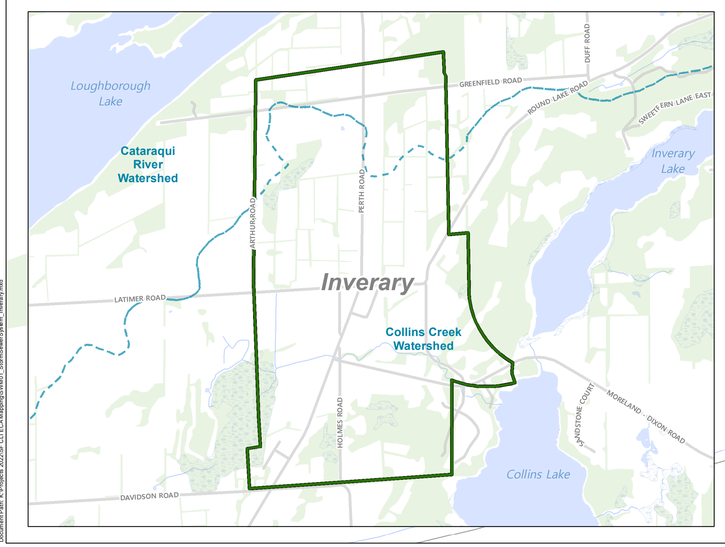

Appendix C1

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SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

PERTH ROAD VILLAGE
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

- Road
- Rivers
- Hamlet
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel

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0 5 10 20 30 40 50
Meters
UTM Zone 18 NAD 83

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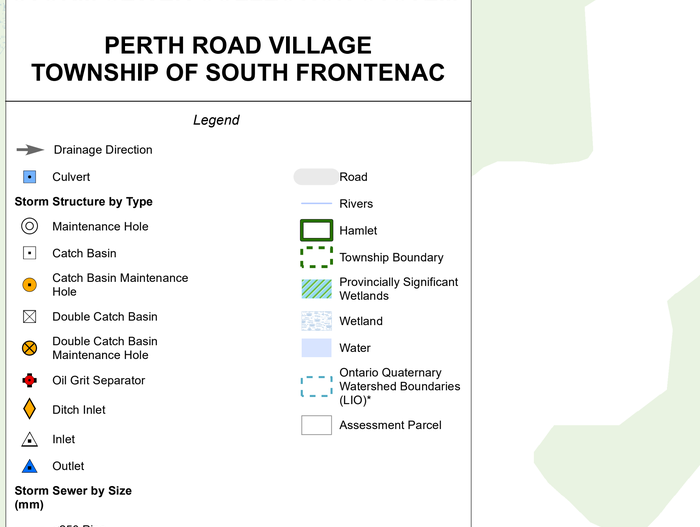

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SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

RAYMONDS CORNERS
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

- Road
- Railway
- Hamlet
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel

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0 5 10 20 30
Meters
UTM Zone 18 NAD 83

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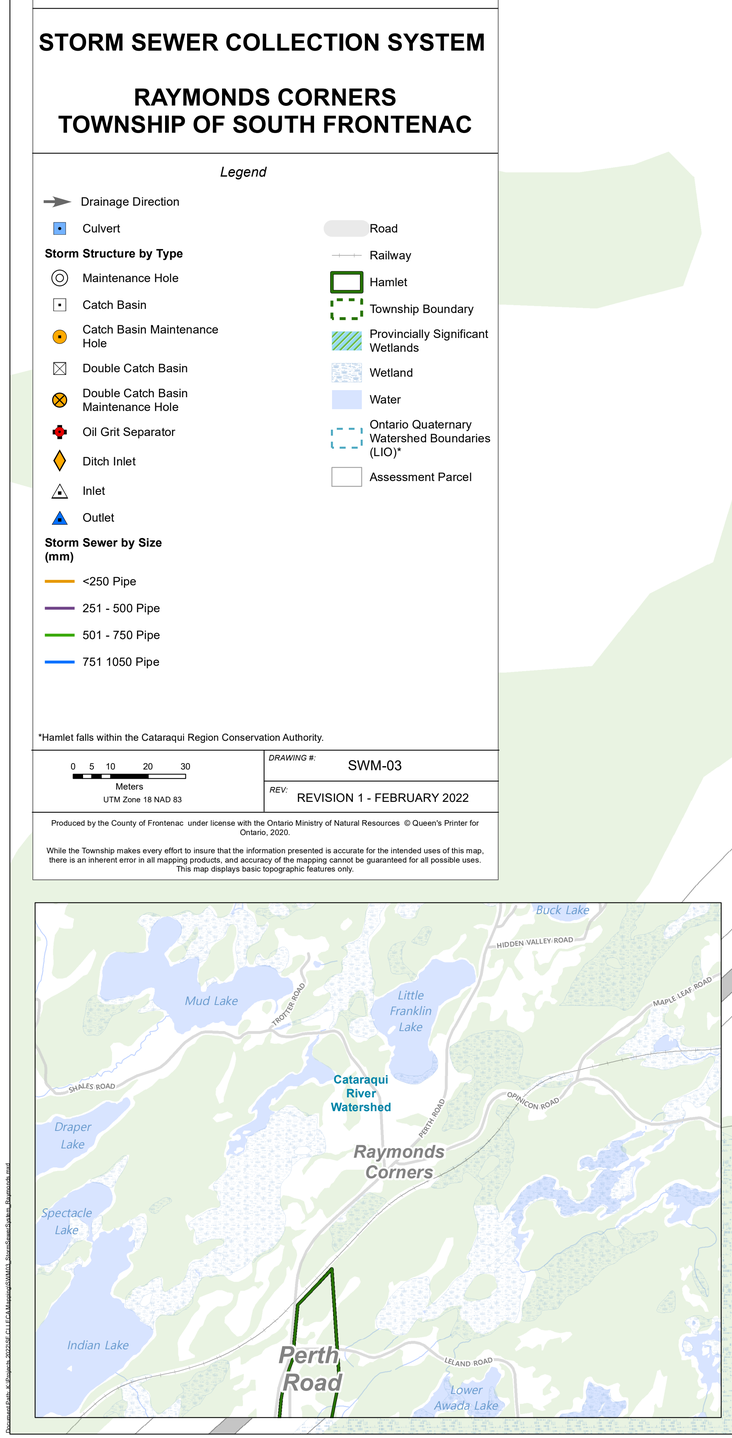

SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

BATTERSEA ROAD VILLAGE
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

- Road
- Provincially Significant Wetlands
- Wetland
- Rivers
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel
- Hamlet
- Township Boundary

*Hamlet falls within the Cataraqui Region Conservation Authority.

0 5 10 20 30 40 50 60
Meters
UTM Zone 18 NAD 83

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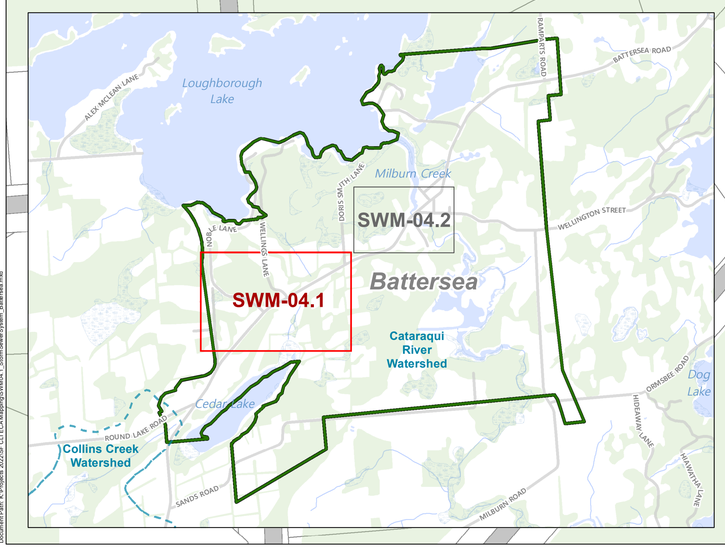

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E
S

DORIS SMITH LANE
BATTERSEA ROAD
WELLINGS LANE
NOBLE LANE

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SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

BATTERSEA ROAD VILLAGE
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

- Road
- Rivers
- Hamlet
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel

*Hamlet falls within the Cataraqui Region Conservation Authority.

0 5 10 20 30 40
Meters
UTM Zone 18 NAD 83

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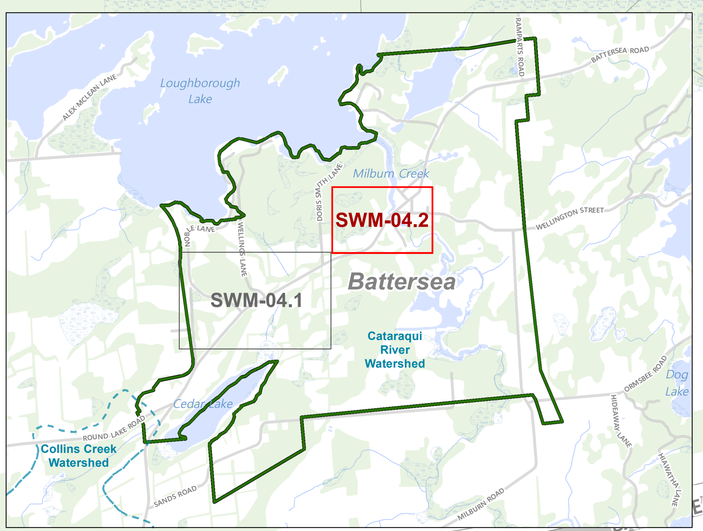

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SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

HARTINGTON VILLAGE
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

- Road
- Rivers
- Hamlet
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel

*Hamlet falls within the Quinte Conservation Authority and the Cataraqui Region Conservation Authority.

0 5 10 20 30 40 50
Meters
UTM Zone 18 NAD 83

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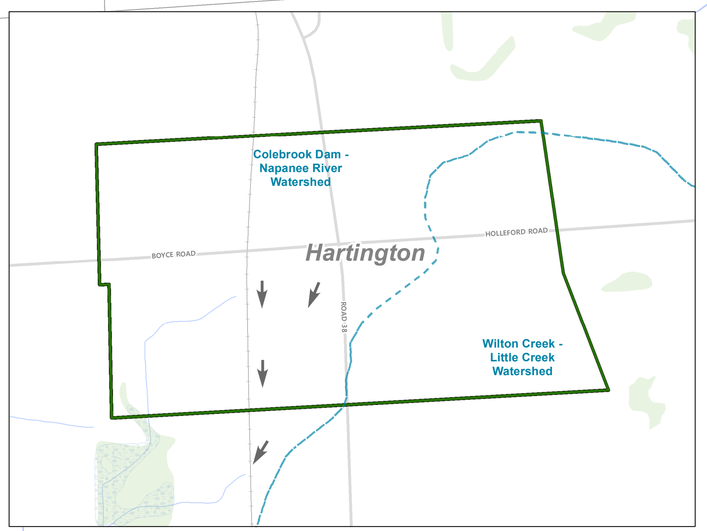

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SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

BELLROCK VILLAGE
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

- Road
- Rivers
- Hamlet
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel

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0 5 10 20 30 40
Meters
UTM Zone 18 NAD 83

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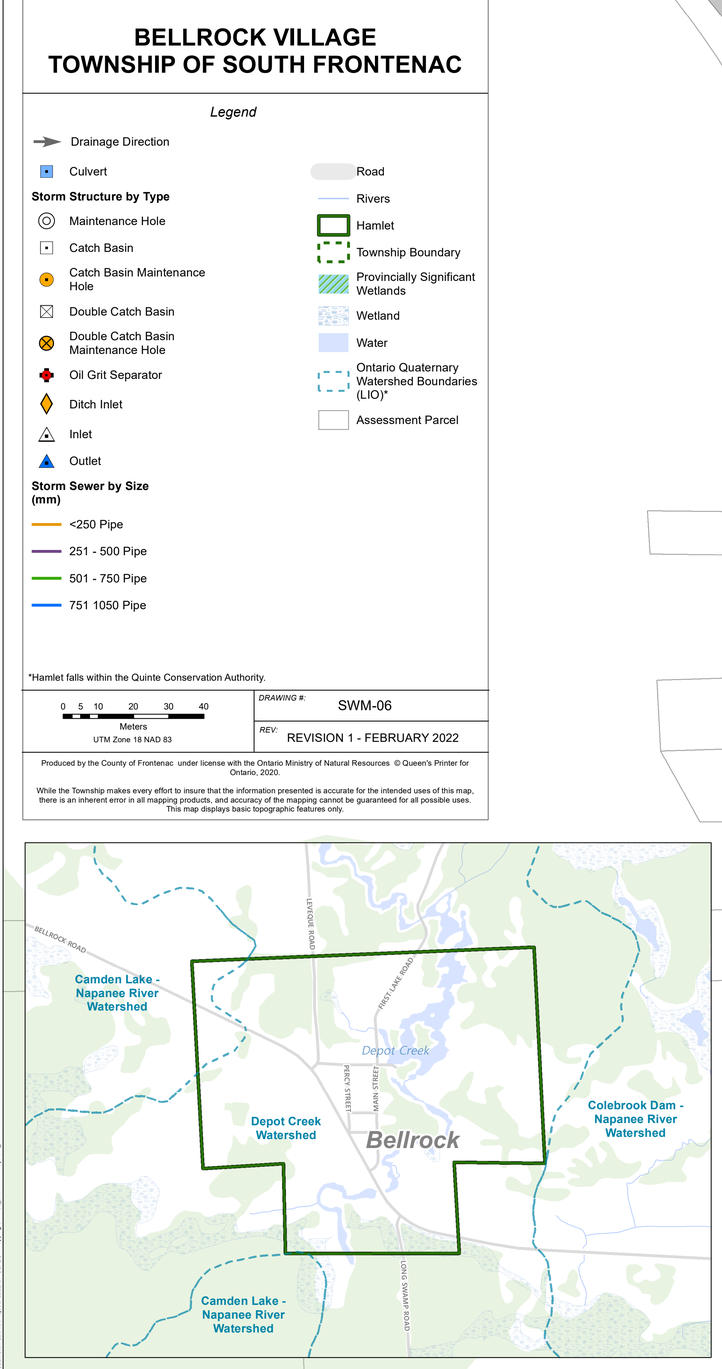

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Appendix C1

SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

HARROWSMITH VILLAGE
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

- Road
- Rivers
- Hamlet
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel

*Hamlet falls within the Cataraqui Region Conservation Authority.

0 5 10 20 30 40 50 60 70
Meters
UTM Zone 18 NAD 83

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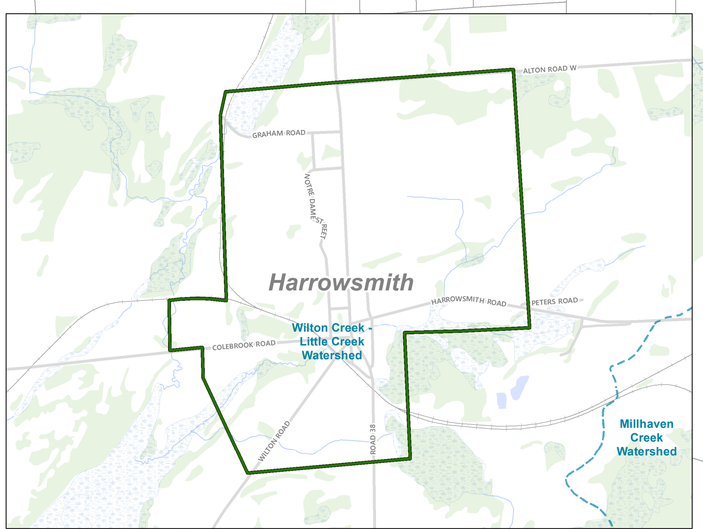

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SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

SUNBURY VILLAGE
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

- Road
- Rivers
- Hamlet
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel

*Hamlet falls within the Quinte Conservation Authority.

0 5 10 20 30 40 50
Meters
UTM Zone 18 NAD 83

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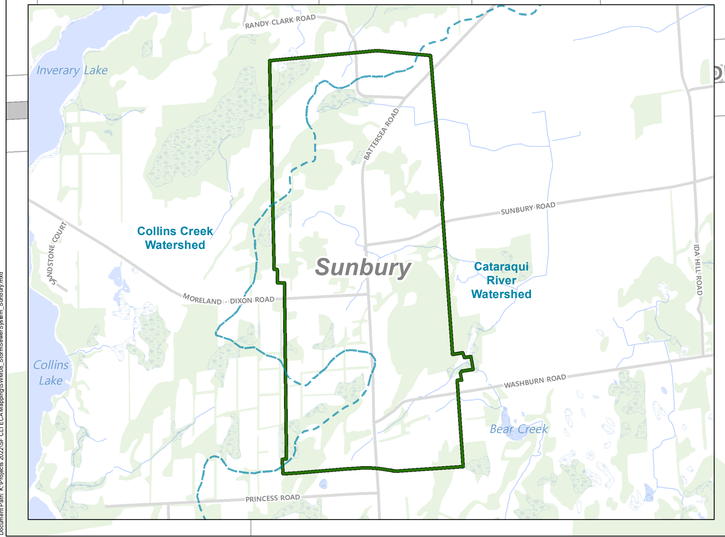

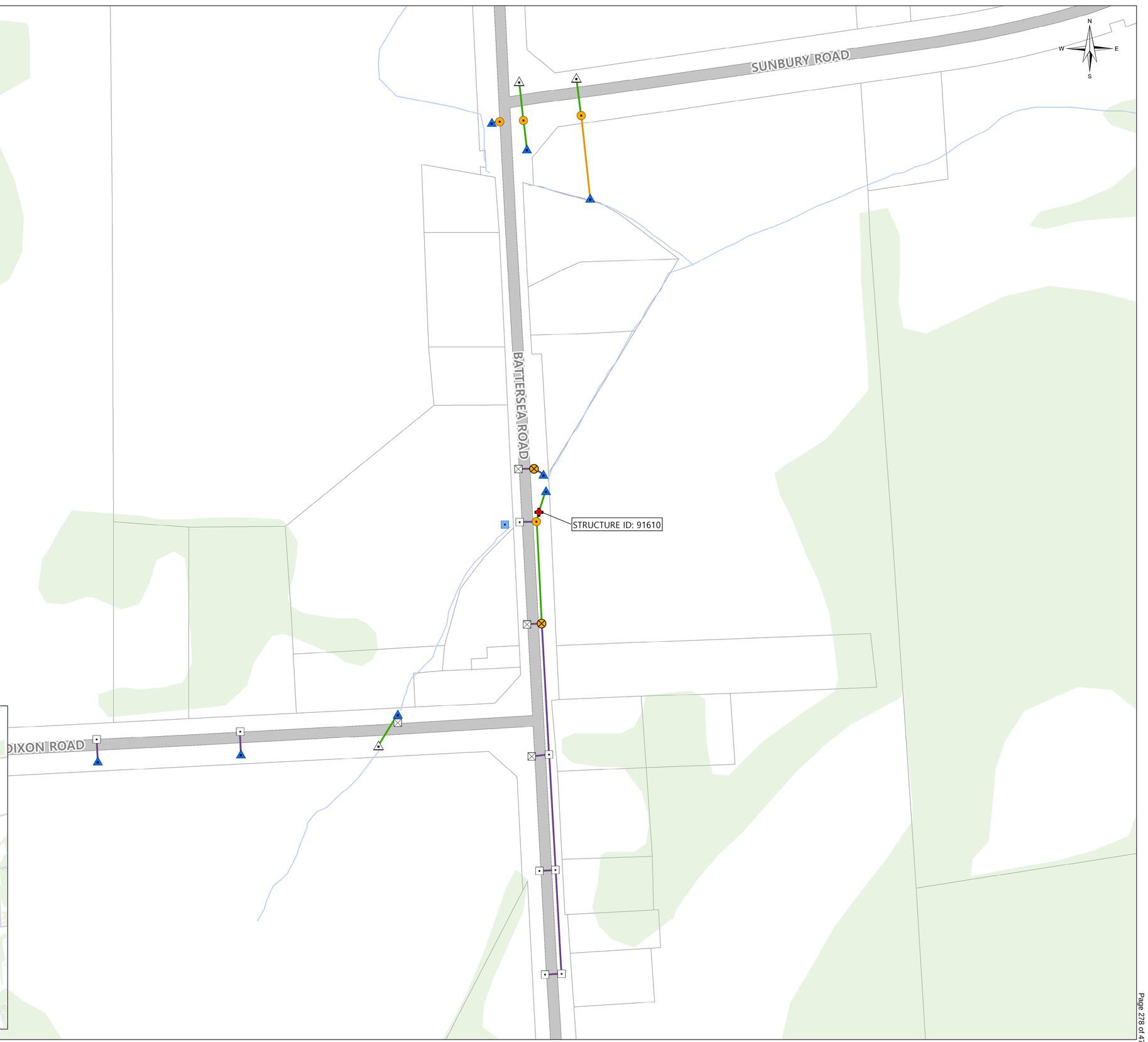

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SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

SYDENHAM VILLAGE
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

- Water Pump Station
- Water Intake

Surface Water Intake Protection Zone

- IPZ Type 1
- IPZ Type 2
- IPZ Type 3
- Hamlet
- Township Boundary
- Road
- Provincially Significant Wetlands
- Wetland
- Rivers
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel

*Hamlet falls within the Quinte Conservation Authority.

0 5 10 20 30 40 50 60 70 80
Meters
UTM Zone 18 NAD 83

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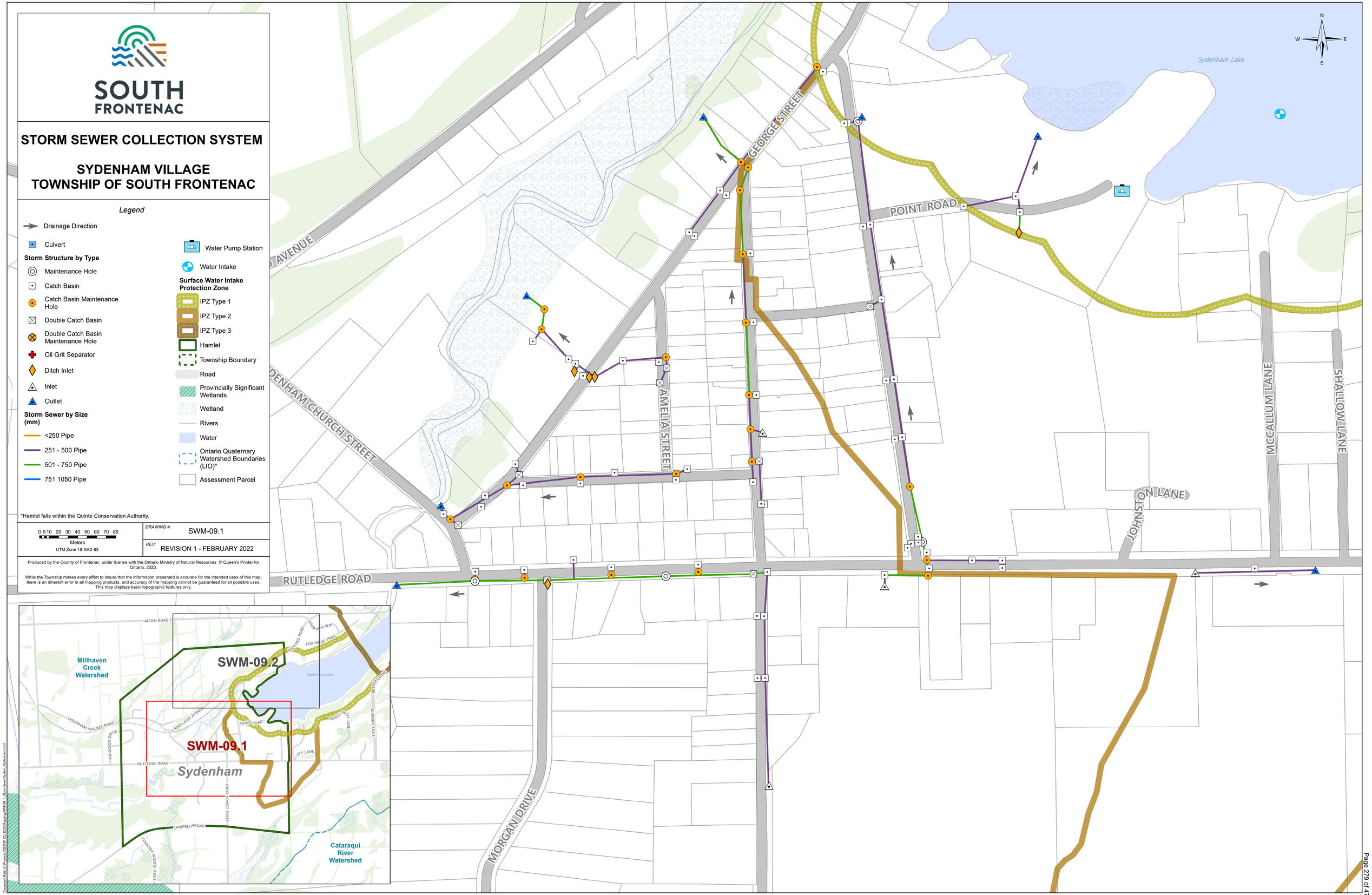

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SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

SYDENHAM VILLAGE
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

Surface Water Intake Protection Zone

- IPZ Type 1
- IPZ Type 2
- IPZ Type 3
- Hamlet
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel
- Road
- Rivers

*Hamlet falls within the Quinte Conservation Authority.

0 5 10 20 30 40 50 60 70 80 90 100
Meters
UTM Zone 18 NAD 83

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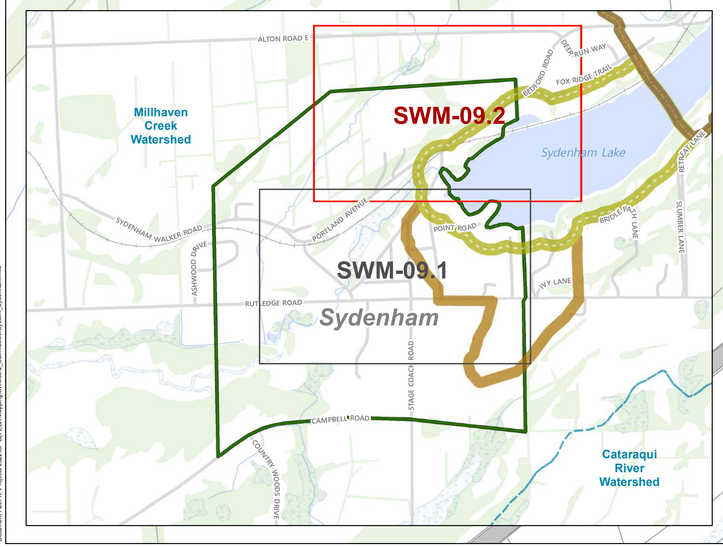

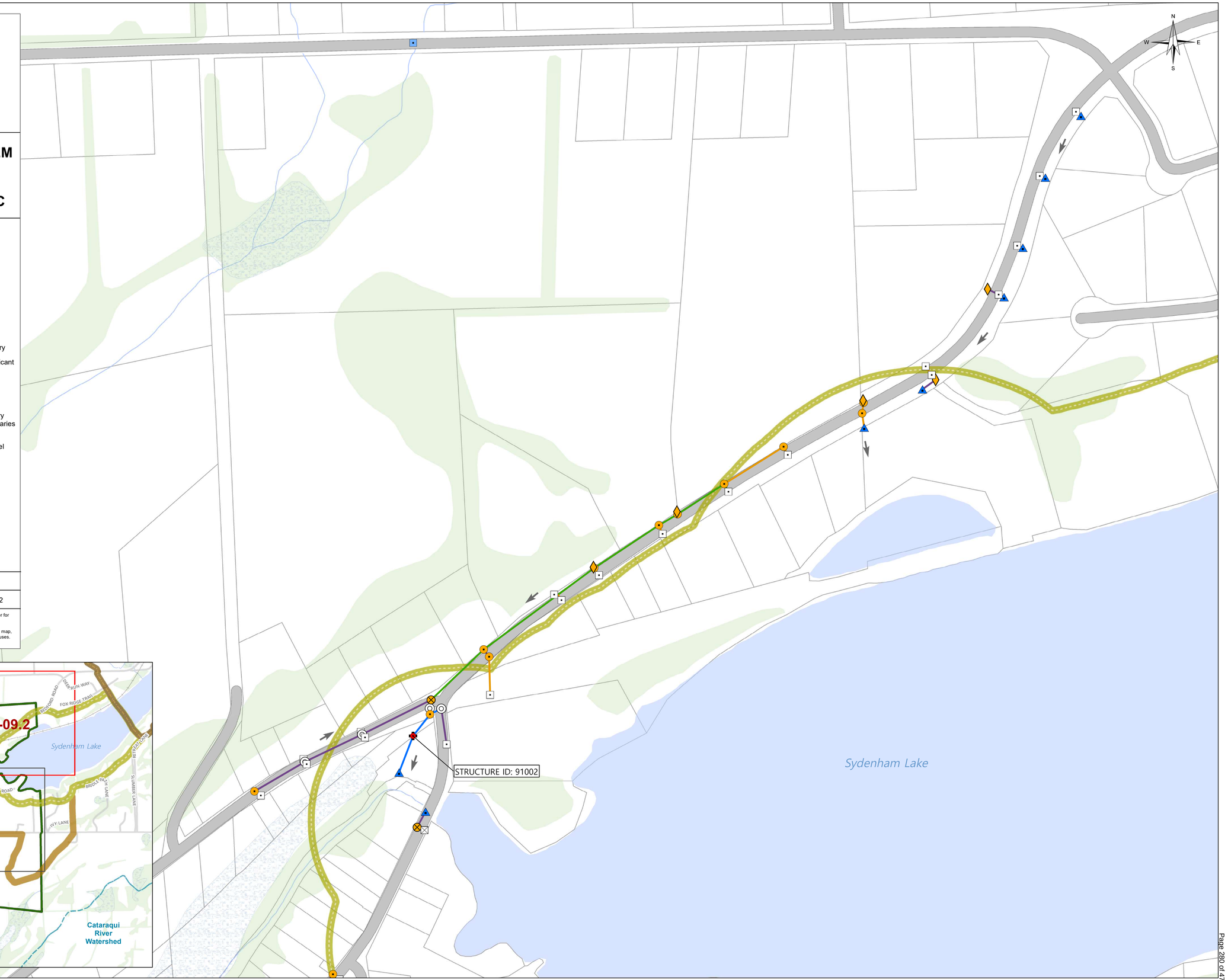

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SOUTH FRONTENAC

SURFACE WATER INTAKE PROTECTION ZONES SYDENHAM VILLAGE TOWNSHIP OF SOUTH FRONTENAC

Legend

Surface Water Intake Protection Zone

- IPZ Type 1
- IPZ Type 2
- IPZ Type 3
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel
- Road
- Rivers

*Hamlet falls within the Quinte Conservation Authority.

0 500 1,000
Meters
UTM Zone 18 NAD 83

DRAWING #: SWM-09.3

REV: REVISION 1 - FEBRUARY 2022

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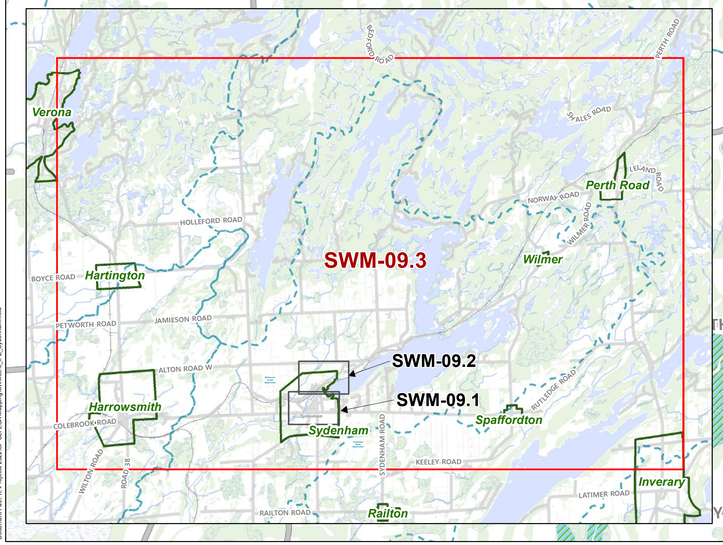

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SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

VILLAGE OF VERONA
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

- Road
- Hamlet
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel

*Hamlet falls within the Quinte Conservation Authority.

0 5 10 20 30 40 50 60 70 80 90 100
Meters
UTM Zone 18 NAD 83

DRAWING #: SWM-10.1

REV: REVISION 1 - FEBRUARY 2022

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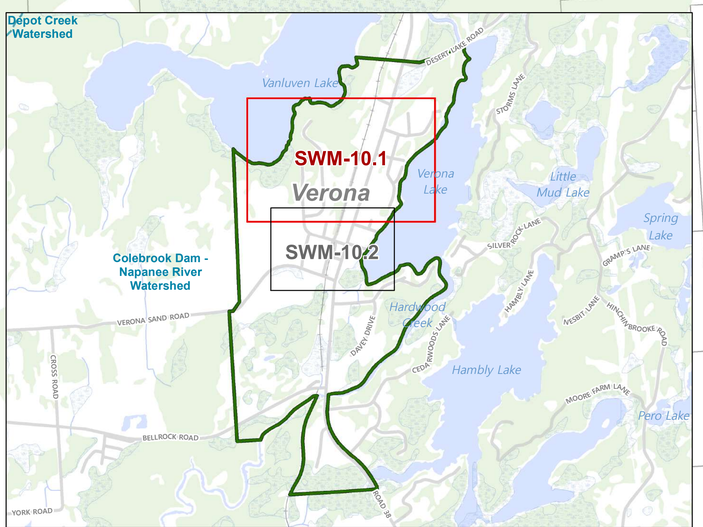

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SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

VILLAGE OF VERONA
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

- Road
- Rivers
- Hamlet
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel

*Hamlet falls within the Quinte Conservation Authority.

0 5 10 20 30 40 50
Meters
UTM Zone 18 NAD 83

DRAWING #: SWM-10.2

REV: REVISION 1 - FEBRUARY 2022

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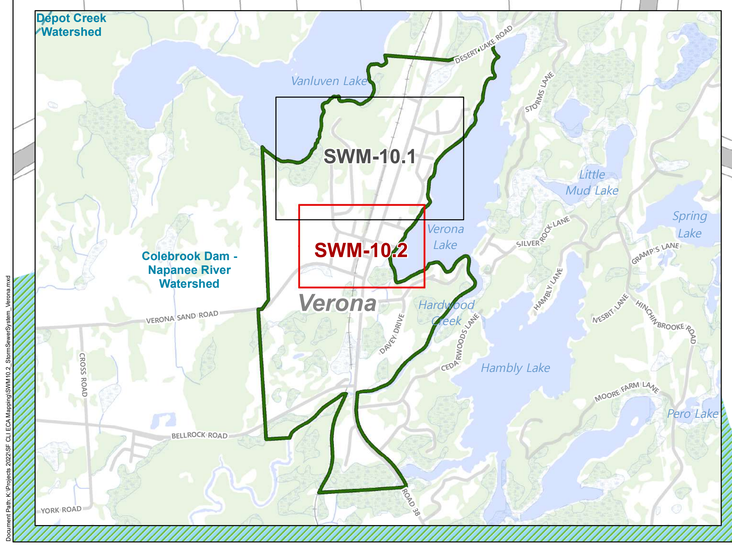

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SOUTH FRONTENAC

Appendix D

Risk Rating Systems

Major Asset Group	Probability of Failure Score (1 = low, 5 = high)	Consequence of Failure Score (1 = low, 5 = high)
Roads	PCI Ratings – Inspections 85 to 100 = 1 70 to <85 = 2 55 to <70 = 3 40 to <55 = 4 0 to <40 = 5	Based on Road Class Local = 3 Collector = 4 Arterial = 5
Bridges	BCI Ratings – OSIM Reports 75 to 100 = 1 60 to <75 = 2 45 to <60 = 3 35 to <45 = 4 0 to <35 = 5	Based on Road Class Bridge (Collector/Local) = 4 Bridge (Arterial) = 5 Culvert (Collector/Local) = 3 Culvert (Arterial) = 4
Water Facilities	Remaining Useful Service Life 80 to 100 = 1 60 to <80 = 2 30 to <60 = 3 1 to <30 = 4 0 = 5	Based on Function Raw water intake = 5 Elevated Water Storage = 4 Treatment Plant = 5 UV/GAC Contactors = 5
Water Mains	Remaining Useful Service Life 80 to 100 = 1 60 to <80 = 2 40 to <60 = 3 20 to <40 = 4 0 to <20 = 5	Based on Size Services = 1 100mm = 2 150mm = 3 200mm = 4 250mm = 5

Major Asset Group	Probability of Failure Score (1 = low, 5 = high)	Consequence of Failure Score (1 = low, 5 = high)
Water Valves, Hydrants and Services	Remaining Useful Service Life 80 to 100 = 1 60 to <80 = 2 40 to <60 = 3 20 to <40 = 4 0 to <20 = 5	Based on Function Valve - 250mm = 4 Valve - 150 to 200mm = 3 Hydrant = 4 Services = 1
Storm Sewers	Remaining Useful Service Life 80 to 100 = 1 60 to <80 = 2 40 to <60 = 3 20 to <40 = 4 0 to <20 = 4	Based on Size <250mm = 1 250 to 375mm = 2 450 to 600mm = 3 675 to 900mm = 4 1050mm or > = 5
Manholes, Catchbasins and Ditch Inlets	Remaining Useful Service Life 80 to 100 = 1 60 to <80 = 2 40 to <60 = 3 20 to <40 = 4 0 to <20 = 5	Based on Function Manholes = 3 Double Catchbasin = 2 Catchbasin = 1 Ditch Inlet = 1
Storm Treatment Units	Remaining Useful Service Life 80 to 100 = 1 60 to <80 = 2 40 to <60 = 3 20 to <40 = 4 0 to <20 = 4	Based on Function Mechanical Treatment Unit = 5
Culverts (< 3m diameter)	Remaining Useful Service Life 80 to 100 = 1 60 to <80 = 2 40 to <60 = 3 20 to <40 = 4 0 to <20 = 5	Based on Road Class Culvert (Collector/Local) = 3 Culvert (Arterial) = 4

Roads

ID	Street	From	To	Classification	Roadside Environment	Surface Type	Maintenace Class	Length (m)	Width (m)	Pavement Area (m2)	Last Inspection Date	Inspection OCI	Cost $/m assumed	Replacement Value Estimate	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Install / Last Reconstruct Date	Useful Life	Risk	Timing of First Replacement (based on Risk)	Timing of First Replacement (based on Risk)
52150	Bellrock Road	Cross Road	Road 38	Arterial	Rural	Asphalt	Class 3	1300	6.8	8840	2022-04-30	100	675	$ 877,500.00	1	5	2022	50	5	2040 to 2046	2022
56635	Sunbury Road	Battersea Road	Battersea Road	Arterial	Rural	Asphalt	Class 3	3400	7	23800	2022-04-30	46	855	$ 2,907,000.00	4	5	1967	50	20	2024 to 2027	2023
54910	Road 38	Murton Road	0.50km South of Kingsto	Arterial	Rural	Asphalt	Class 2	5350	7.5	40125	2022-04-30	60	855	$ 4,574,250.00	3	5	1993	45	15	2028 to 2032	2025
55025	Road 38	0.50km South of Kingston	Kingston Road	Arterial	Urban	Asphalt	Class 2	500	10	5000	2022-04-30	68	1690	$ 845,000.00	3	5	2009	45	15	2028 to 2032	2025
56520	Rutledge Road	2.20km East of Sydenham	Perth Road 10	Arterial	Rural	Asphalt	Class 3	5850	6.7	39195	2022-04-30	55	675	$ 3,948,750.00	3	5	2001	50	15	2028 to 2032	2026
46360	Walker Street	Verona Street	Road 38	Local	Urban	Asphalt	Class 5	50	8.8	440	2022-04-30	41	1050	$ 52,500.00	4	3	2004	50	12	2028 to 2032	2026
50500	Battersea Road	0.10km North of Sarah St	Burnt Hills Road	Arterial	Rural	Asphalt	Class 3	2300	6.4	14720	2022-04-30	64	675	$ 1,552,500.00	3	5	2007	50	15	2028 to 2032	2028
45685	Verona Sand Road	0.70km East of Cross Roa	McMahon Drive	Local	Rural	Asphalt	Class 4	1250	7	8750	2022-04-30	51	550	$ 687,500.00	4	3	1997	50	12	2028 to 2032	2028
58935	Yarker Road 4	Wilton Road 18	Road 38	Arterial	Rural	Asphalt	Class 3	2050	6.7	13735	2022-04-30	55	675	$ 1,383,750.00	3	5	1993	50	15	2028 to 2032	2029
46000	Stage Coach Road	Campbell Road	Rutledge Road	Collector	Urban	Asphalt	Class 4	650	6.7	4355	2022-04-30	63	1050	$ 682,500.00	3	4	1986	50	12	2028 to 2032	2029
53760	Perth Road 10	Moreland Dixon Road	0.70km North of Morela	Arterial	Urban	Asphalt	Class 2	700	7.9	5530	2022-04-30	72	1690	$ 1,183,000.00	2	5	1989	45	10	2028 to 2032	2029
55255	Road 38	0.56km North of Harrows	0.70km North of Harrow	Arterial	Rural	Asphalt	Class 2	4750	7.5	35625	2022-04-30	58	855	$ 4,061,250.00	3	5	1994	45	15	2028 to 2032	2030
55175	Road 38	Harrowsmith Road	0.56km North of Harrow	Arterial	Urban	Asphalt	Class 2	560	12	6720	2022-05-02	61	1690	$ 946,400.00	3	5	1994	45	15	2028 to 2032	2030
55600	Road 38	Pine Ridge Road	Desert Lake Road	Arterial	Urban	Asphalt	Class 2	500	7.8	3900	2022-04-30	65	1690	$ 845,000.00	3	5	1995	45	15	2028 to 2032	2031
55485	Road 38	Verona Sand Road	Pine Ridge Road	Arterial	Urban	Asphalt	Class 2	1200	7.6	9120	2022-04-30	68	1690	$ 2,028,000.00	3	5	1994	45	15	2028 to 2032	2031
50000	Battersea Road	4.3km South of Moreland	Moreland Dixon Road	Arterial	Rural	Asphalt	Class 3	4300	7.2	30960	2022-04-30	46	855	$ 3,676,500.00	4	5	1994	50	20	2024 to 2027	2032
40915	Burridge Road	Westport Road	Green Bay Road	Local	Rural	Asphalt	Class 4	1700	6.3	10710	2022-04-30	68	550	$ 935,000.00	3	3	1984	50	9	2033 to 2039	2034
57440	Sydenham Road	Orser Road	1.45km North of Keeley	Arterial	Rural	Asphalt	Class 2	5250	9.2	48300	2022-04-30	78	855	$ 4,488,750.00	2	5	1993	45	10	2028 to 2032	2038
57555	Sydenham Road	1.45km North of Keeley R	Rutledge Road	Arterial	Rural	Asphalt	Class 2	350	9.2	3220	2022-04-30	83	855	$ 299,250.00	2	5	1993	45	10	2028 to 2032	2038
55150	Road 38	Wilton Road 18	Harrowsmith Road	Arterial	Urban	Asphalt	Class 2	80	12	960	2022-05-01	68	1690	$ 135,200.00	3	5	1994	45	15	2028 to 2032	2039
50375	Battersea Road	Larry York Road	Sarah Street	Arterial	Urban	Asphalt	Class 3	2050	7.3	14965	2022-04-30	69	1340	$ 2,747,000.00	3	5	2004	50	15	2028 to 2032	2039
55370	Road 38	0.70km North of Harrows	Verona Sand Road	Arterial	Rural	Asphalt	Class 2	3900	7.5	29250	2022-04-30	60	855	$ 3,334,500.00	3	5	1995	45	15	2028 to 2032	2040
46712	Wilmer Road	Perth Road 10	Perth Road Crescent	Local	Urban	Asphalt	Class 4	50	7	350	2022-04-30	95	1050	$ 52,500.00	1	3	1990	50	3	2047 to 2052	2040
55715	Road 38	Desert Lake Road	0.80km North of Snider	Arterial	Rural	Asphalt	Class 2	3100	7.8	24180	2022-04-30	82	855	$ 2,650,500.00	2	5	1996	45	10	2028 to 2032	2041
40630	Bradshaw Road	Bob's Lake Road	Steele Road	Local	Rural	Asphalt	Class 4	1250	6.7	8375	2022-04-30	74	550	$ 687,500.00	2	3	1991	50	6	2040 to 2046	2041
43765	Latimer Road	Perth Road 10	Round Lake Road	Local	Urban	Asphalt	Class 5	450	6.1	2745	2022-04-30	74	1050	$ 472,500.00	2	3	1991	50	6	2040 to 2046	2041
40615	Bradshaw Road	Road 38	Bob's Lake Road	Local	Rural	Asphalt	Class 4	900	6.7	6030	2022-04-30	80	550	$ 495,000.00	2	3	1991	50	6	2040 to 2046	2041
54220	Perth Road 10	1.40km North of Perth Ro	3.90km North of Perth R	Arterial	Rural	Asphalt	Class 3	2500	6.7	16750	2022-04-30	74	675	$ 1,687,500.00	2	5	1993	50	10	2028 to 2032	2043
46330	Verona Street	Verona Sand Road	North End of Road	Local	Urban	Asphalt	Class 5	900	6.4	5760	2022-04-30	78	1050	$ 945,000.00	2	3	1993	50	6	2040 to 2046	2043
56405	Rutledge Road	Storm Haven Lane	2.20km East of Sydenha	Arterial	Rural	Asphalt	Class 3	2750	9.1	25025	2022-04-30	89	675	$ 1,856,250.00	1	5	1993	50	5	2040 to 2046	2043
55830	Road 38	0.80km North of Snider R	Piccadilly Road	Arterial	Rural	Asphalt	Class 2	750	7.4	5550	2022-04-30	81	855	$ 641,250.00	2	5	2000	45	10	2028 to 2032	2045
54450	Perth Road 10	4.10km North of Perth Ro	9.60km North of Perth R	Arterial	Rural	Asphalt	Class 3	6700	6.9	46230	2022-04-30	80	675	$ 4,522,500.00	2	5	1996	50	10	2028 to 2032	2046
44740	Notre Dame Street	0.35km South of Centenn	Park Street	Local	Rural	Asphalt	Class 5	350	7	2450	2022-04-30	57	550	$ 192,500.00	3	3	1996	50	9	2033 to 2039	2046
42850	Hinchinbrooke Road	Road 38	0.2km North of Road 38	Local	Rural	Asphalt	Class 5	600	7	4200	2022-04-30	65	550	$ 330,000.00	3	3	1996	50	9	2033 to 2039	2046
43750	Latimer Road	1.70km West of Perth Ro	Perth Road 10	Local	Rural	Asphalt	Class 4	1700	6.2	10540	2022-04-30	69	550	$ 935,000.00	3	3	1996	50	9	2033 to 2039	2046
43495	Kingston Road	Road 38	Harrowsmith Road	Local	Urban	Asphalt	Class 5	300	6.6	1980	2022-04-30	80	1050	$ 315,000.00	2	3	1996	50	6	2040 to 2046	2046
41140	Carlton Drive	Road 38	Cemetery Road	Local	Urban	Asphalt	Class 6	450	6.1	2745	2022-04-30	82	1050	$ 472,500.00	2	3	1996	50	6	2040 to 2046	2046
42460	George Street	Wheatley Street	Portland Avenue	Arterial	Urban	Asphalt	Class 4	200	8.9	1780	2022-04-30	87	1050	$ 210,000.00	1	5	1996	50	5	2040 to 2046	2046
54460	Perth Road 10	9.60km North of Perth Ro	Roushorn Road	Arterial	Rural	Asphalt	Class 3	1000	6.9	6900	2022-04-30	89	675	$ 675,000.00	1	5	1996	50	5	2040 to 2046	2046
45625	Salmon Drive	Lakeview Drive	East End of Road	Local	Rural	Asphalt	Class 6	100	5.1	510	2022-04-30	85	550	$ 55,000.00	1	3	1996	50	3	2047 to 2052	2046
44320	McMahon Drive	Verona Sand Road	Bank Street	Local	Rural	Asphalt	Class 5	250	6.2	1550	2022-04-30	86	550	$ 137,500.00	1	3	1996	50	3	2047 to 2052	2046
45145	Princess Road	0.15km West of Battersea	Battersea Road	Local	Rural	Asphalt	Class 5	150	6.7	1005	2022-04-30	86	550	$ 82,500.00	1	3	1996	50	3	2047 to 2052	2046
46120	Sydenham Church Street	William Street	Portland Avenue	Local	Rural	Asphalt	Class 5	400	6.5	2600	2022-04-30	88	550	$ 220,000.00	1	3	1996	50	3	2047 to 2052	2046
44140	Maria Street	Notre Dame Street	Road 38	Local	Urban	Asphalt	Class 5	100	7.8	780	2022-04-30	89	1050	$ 105,000.00	1	3	1996	50	3	2047 to 2052	2046
43645	Lakeview Drive	Salmon Drive	Pine Ridge Road	Local	Rural	Asphalt	Class 6	150	6.5	975	2022-04-30	89	550	$ 82,500.00	1	3	1996	50	3	2047 to 2052	2046
41290	Church Street (Harrowsmit	Notre Dame Street	Road 38	Local	Urban	Asphalt	Class 5	100	10	1000	2022-04-30	90	1050	$ 105,000.00	1	3	1996	50	3	2047 to 2052	2046
44710	Notre Dame Street	Colebrook Road	Church Street (Harrowsm	Local	Urban	Asphalt	Class 5	350	6.6	2310	2022-04-30	90	1050	$ 367,500.00	1	3	1996	50	3	2047 to 2052	2046
44935	Ottawa Street	Railway Street	North End of Road	Local	Urban	Asphalt	Class 5	100	6.5	650	2022-04-30	91	1050	$ 105,000.00	1	3	1996	50	3	2047 to 2052	2046
46645	William Street	Rutledge Road	Church Street (Sydenhar	Local	Urban	Asphalt	Class 4	200	7	1400	2022-04-30	93	1050	$ 210,000.00	1	3	1996	50	3	2047 to 2052	2046
41305	Church Street (Harrowsmit	Road 38	East End of Road	Local	Urban	Asphalt	Class 5	200	7.4	1480	2022-04-30	95	1050	$ 210,000.00	1	3	1996	50	3	2047 to 2052	2046
53530	Moreland Dixon Road	Perth Road 10	Battersea Road	Arterial	Rural	Asphalt	Class 3	4150	6.7	27805	2022-04-30	72	675	$ 2,801,250.00	2	5	1997	50	10	2028 to 2032	2047
41965	Division Street	Perth Road 10	Latimer Road	Local	Rural	Asphalt	Class 5	300	6.2	1860	2022-04-30	73	550	$ 165,000.00	2	3	1997	50	6	2040 to 2046	2047
40285	Bank Street	Road 38	Revell Road	Local	Urban	Asphalt	Class 5	400	6.4	2560	2022-04-30	74	1050	$ 420,000.00	2	3	1997	50	6	2040 to 2046	2047
46465	Water Street	Road 38	East End of Road	Local	Urban	Asphalt	Class 6	150	6.8	1020	2022-04-30	74	1050	$ 157,500.00	2	3	1997	50	6	2040 to 2046	2047
45700	Verona Sand Road	McMahon Drive	Road 38	Local	Urban	Asphalt	Class 4	250	6.7	1675	2022-04-30	81	1050	$ 262,500.00	2	3	1997	50	6	2040 to 2046	2047
45085	Pine Ridge Road	Road 38	East End of Road	Local	Urban	Asphalt	Class 5	450	5.1	2295	2022-04-30	81	1050	$ 472,500.00	2	3	1997	50	6	2040 to 2046	2047
42430	Genge Street	Road 38	East End of Road	Local	Urban	Asphalt	Class 6	100	7.2	720	2022-04-30	83	1050	$ 105,000.00	2	3	1997	50	6	2040 to 2046	2047
41680	Davey Drive	South End of Road	Maple Drive	Local	Rural	Asphalt	Class 5	450	6.7	3015	2022-04-30	90	550	$ 247,500.00	1	3	1997	50	3	2047 to 2052	2047
41200	Cemetery Road	Water Street	North End of Road	Local	Rural	Asphalt	Class 6	50	4.9	245	2022-04-30	90	550	$ 27,500.00	1	3	1997	50	3	2047 to 2052	2047
53875	Perth Road 10	0.70km North of Morelan	North Shore Crescent	Arterial	Rural	Asphalt	Class 2	3100	6.7	20770	2022-04-30	64	855	$ 2,650,500.00	3	5	2003	45	15	2028 to 2032	2048
53645	Perth Road 10	Spooner Road	Moreland Dixon Road	Arterial	Rural	Asphalt	Class 2	5400	8.7	46980	2022-04-30	79	855	$ 4,617,000.00	2	5	2003	45	10	2028 to 2032	2048
53415	Harrowsmith Road	0.45km East of Road 38	Loughborough Portland	Arterial	Rural	Asphalt	Class 3	3600	6.7	24120	2022-04-30	83	675	$ 2,430,000.00	2	5	1998	50	10	2028 to 2032	2048
41215	Centennial Park Road	Notre Dame Street	Road 38	Local	Rural	Asphalt	Class 5	150	6.7	1005	2022-04-30	63	550	$ 82,500.00	3	3	1998	50	9	2033 to 2039	2048
44925	Orser Road	1.20km East of Stage Coa	Sydenham Road	Local	Rural	Asphalt	Class 4	100	6.5	650	2022-04-30	75	550	$ 55,000.00	2	3	1998	50	6	2040 to 2046	2048
45115	Portland Avenue	Sydenham Church Street	George Street	Local	Rural	Asphalt	Class 5	900	7	6300	2022-04-30	82	550	$ 495,000.00	2	3	1998	50	6	2040 to 2046	2048
40690	Brewery Street	William Street	Sydenham Mill Street	Local	Urban	Asphalt	Class 5	200	7	1400	2022-04-30	95	1050	$ 210,000.00	1	3	1998	50	3	2047 to 2052	2048
54795	Perth Road 10	0.85km North of McComi	6.00km North of McCom	Arterial	Rural	Asphalt	Class 3	5150	6.8	35020	2022-04-30	84	675	$ 3,476,250.00	2	5	1999	50	10	2028 to 2032	2049
44095	Maple Drive	Road 38	East End of Road	Local	Rural	Asphalt	Class 5	550	6.2	3410	2022-04-30	75	550	$ 302,500.00	2	3	1999	50	6	2040 to 2046	2049
54790	Perth Road 10	McComish Lane	0.85km North of McCom	Arterial	Rural	Asphalt	Class 3	850	6.8	5780	2022-04-30	89	675	$ 573,750.00	1	5	1999	50	5	2040 to 2046	2049
42280	Four Seasons Drive	Holmes Road	North End of Road	Local	Rural	Asphalt	Class 5	1350	6.2	8370	2022-04-30	73	550	$ 742,500.00	2	3	2000	50	6	2040 to 2046	2050
50250	Battersea Road	Sunbury Road	Larry York Road	Arterial	Rural	Asphalt	Class 3	5200	6.7	34840	2022-04-30	88	675	$ 3,510,000.00	1	5	2000	50	5	2040 to 2046	2050
56060	Rutledge Road	Loughborough Portland R	0.13km West of Sydenha	Arterial	Rural	Asphalt	Class 3	1400	6.7	9380	2022-04-30	94	675	$ 945,000.00	1	5	2000	50	5	2040 to 2046	2050
42295	Fox Ridge Trail	West End of Road	East End of Road	Local	Rural	Asphalt	Class 5	600	6.2	3720	2022-04-30	86	550	$ 330,000.00	1	3	2000	50	3	2047 to 2052	2050
44725	Notre Dame Street	Church Street (Harrowsm	0.35km South of Centen	Local	Urban	Asphalt	Class 5	350	7.6	2660	2022-04-30	86	1050	$ 367,500.00	1	3	2000	50	3	2047 to 2052	2050
41800	Deer Run Way	Fox Ridge Trail	Bedford Road	Local	Rural	Asphalt	Class 5	450	6.2	2790	2022-04-30	88	550	$ 247,500.00	1	3	2000	50	3	2047 to 2052	2050
45100	Point Road	Wheatley Street	East End of Road	Local	Urban	Asphalt	Class 5	250	10.4	2600	2022-04-30	78	1050	$ 262,500.00	2	3	2001	50	6	2040 to 2046	2051
53990	Perth Road 10	North Shore Crescent	Perth Road Crescent	Arterial	Rural	Asphalt	Class 3	5300	6.7	35510	2022-04-30	78	675	$ 3,577,500.00	2	5	2002	50	10	2028 to 2032	2052
57325	Sydenham Road	Horning Road	2.0km North of Horning	Arterial	Rural	Asphalt	Class 2	2000	8.7	17400	2022-04-30	89	855	$ 1,710,000.00	1	5	2007	45	5	2040 to 2046	2052
46390	Walsh Road	Perth Road 10	0.15km East of Perth Ro	Local	Rural	Asphalt	Class 6	650	4.5	2925	2022-04-30	91	550	$ 357,500.00	1	3	2003	50	3	2047 to 2052	2053
54565	Perth Road 10	Roushorn Road	Clear Lake Road	Arterial	Rural	Asphalt	Class 3	500	6.9	3450	2022-04-30	88	675	$ 337,500.00	1	5	2004	50	5	2040 to 2046	2054
55945	Road 38	Bradshaw Road	3.30km North of Bradsha	Arterial	Rural	Asphalt	Class 3	3300	6.3	20790	2022-04-30	77	675	$ 2,227,500.00	2	5	2005	50	10	2028 to 2032	2055
58590	Wilton Road 18	3.6km West of Yarker Roa	Yarker Road 4	Arterial	Rural	Asphalt	Class 3	3600	6.7	24120	2022-04-30	80	675	$ 2,430,000.00	2	5	2005	50	10	2028 to 2032	2055
57210	Sydenham Mill Street	Rutledge Road	George Street	Arterial	Urban	Asphalt	Class 4	400	8.9	3560	2022-04-30	81	1050	$ 420,000.00	2	5	2005	50	10	2028 to 2032	2055

ID	Street	From	To	Classification	Roadside Environment	Surface Type	Maintenace Class	Length (m)	Width (m)	Pavement Area (m2)	Last Inspection Date	Inspection OCI	Cost $/m assumed	Replacement Value Estimate	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Install / Last Reconstruct Date	Useful Life	Risk	Timing of First Replacement (based on Risk)	Timing of First Replacement (based on Risk)
46540	Wheatley Street	Rutledge Road	George Street	Local	Urban	Asphalt	Class 5	550	7.8	4290	2022-04-30	76	1050	$ 577,500.00	2	3	2005	50	6	2040 to 2046	2055
42445	George Street	Sydenham Mill Street	Wheatley Street	Arterial	Urban	Asphalt	Class 4	150	7.8	1170	2022-04-30	92	1050	$ 157,500.00	1	5	2005	50	5	2040 to 2046	2055
45265	Railton Road	Sydenham Road	0.05km East of Sydenhai	Collector	Rural	Asphalt	Class 4	50	6.3	315	2022-04-30	89	550	$ 27,500.00	1	4	2005	50	4	2040 to 2046	2055
46180	Sydenham William Street	Rutledge Road	Sydenham Mill Street	Collector	Urban	Asphalt	Class 5	500	7.8	3900	2022-04-30	91	1050	$ 525,000.00	1	4	2005	50	4	2040 to 2046	2055
40060	Amelia Street	Brewery Street	William Street	Local	Urban	Asphalt	Class 5	200	8.4	1680	2022-04-30	89	1050	$ 210,000.00	1	3	2005	50	3	2047 to 2052	2055
46135	Sydenham Cross Street	Sydenham Mill Street	Wheatley Street	Local	Urban	Asphalt	Class 5	150	6.1	915	2022-04-30	90	1050	$ 157,500.00	1	3	2005	50	3	2047 to 2052	2055
51805	Bellrock Road	West End of Road	Bellrock Mill Street	Arterial	Rural	Asphalt	Class 3	3350	6.8	22780	2022-04-30	81	675	$ 2,261,250.00	2	5	2006	50	10	2028 to 2032	2056
44755	Oak Bluffs Road	South End of Road	Alf Patterson Road	Local	Rural	Asphalt	Class 4	3050	6.2	18910	2022-04-30	80	550	$ 1,677,500.00	2	3	2006	50	6	2040 to 2046	2056
42710	Grey Owl Road	Oak Bluffs Road	South End of Road	Local	Rural	Asphalt	Class 6	350	6.4	2240	2022-04-30	82	550	$ 192,500.00	2	3	2006	50	6	2040 to 2046	2056
41110	Canoe Lake Road	3.0km South of Westport	3.4km South of Westpor	Local	Rural	Asphalt	Class 4	350	6.5	2275	2022-04-30	80	550	$ 192,500.00	2	3	2007	50	6	2040 to 2046	2057
51230	Bedford Road	1.2km North of Freeman	1.5km North of Freeman	Arterial	Rural	Asphalt	Class 4	300	7.7	2310	2022-04-30	86	550	$ 165,000.00	1	5	2007	50	5	2040 to 2046	2057
42105	Fawn Brook Drive	Spooner Road	0.40km North of Spoone	Local	Rural	Asphalt	Class 5	400	6	2400	2022-04-30	86	550	$ 220,000.00	1	3	2007	50	3	2047 to 2052	2057
41020	Canoe Lake Road	0.8km North of Desert La	1.3km North of Desert L	Local	Rural	Asphalt	Class 4	500	6	3000	2022-04-30	62	550	$ 275,000.00	3	3	2008	50	9	2033 to 2039	2058
41455	Colebrook Road	5.30km East of Camden P	Road 38	Local	Rural	Asphalt	Class 4	1100	7.3	8030	2022-04-30	69	550	$ 605,000.00	3	3	2008	50	9	2033 to 2039	2058
40525	Boyce Road	0.7km West of Road 38	Road 38	Local	Rural	Asphalt	Class 4	680	5.5	3740	2022-04-30	89	550	$ 374,000.00	1	3	2008	50	3	2047 to 2052	2058
40705	Buck Bay Road	Westport Road	0.3km North of Westpor	Local	Rural	Asphalt	Class 4	200	5.5	1100	2022-04-30	74	550	$ 110,000.00	2	3	2009	50	6	2040 to 2046	2059
54335	Perth Road 10	3.90km North of Perth Ro	4.10km North of Perth R	Arterial	Rural	Asphalt	Class 3	200	6.7	1340	2022-04-30	85	675	$ 135,000.00	1	5	2009	50	5	2040 to 2046	2059
46165	Sydenham Walker Road	Rock Quarry Lane	Sydenham Church Street	Local	Rural	Asphalt	Class 4	400	6	2400	2022-04-30	88	550	$ 220,000.00	1	3	2009	50	3	2047 to 2052	2059
54680	Perth Road 10	Clear Lake Road	McComish Lane	Arterial	Rural	Asphalt	Class 3	2100	10	21000	2022-04-30	88	675	$ 1,417,500.00	1	5	2010	50	5	2040 to 2046	2060
43360	Keeley Road	Sydenham Road	0.3km East of Sydenham	Collector	Rural	Asphalt	Class 4	300	7.5	2250	2022-04-30	96	550	$ 165,000.00	1	4	2010	50	4	2040 to 2046	2060
42970	Holleford Road	Road 38	0.15km East of Road 38	Local	Urban	Asphalt	Class 4	150	7.7	1155	2022-04-30	87	1050	$ 157,500.00	1	3	2010	50	3	2047 to 2052	2060
45070	Piccadilly Road	Road 38	Arena Boundary Road	Local	Rural	Asphalt	Class 4	150	6.3	945	2022-04-30	89	550	$ 82,500.00	1	3	2010	50	3	2047 to 2052	2060
51920	Bellrock Road	Bellrock Mill Street	Long Swamp Road	Arterial	Rural	Asphalt	Class 3	2100	10	21000	2022-04-30	90	675	$ 1,417,500.00	1	5	2011	50	5	2040 to 2046	2061
52035	Bellrock Road	Long Swamp Road	Cross Road	Arterial	Rural	Asphalt	Class 3	3200	7	22400	2022-04-30	65	675	$ 2,160,000.00	3	5	2012	50	15	2028 to 2032	2062
45730	Sarah Street	Water Street	Battersea Road	Local	Rural	Asphalt	Class 5	200	7	1400	2022-04-30	87	550	$ 110,000.00	1	3	2012	50	3	2047 to 2052	2062
55140	Road 38	Kingston Road	Wilton Road 18	Arterial	Urban	Asphalt	Class 2	800	12.5	10000	2022-04-30	68	1690	$ 1,352,000.00	3	5	2018	45	15	2028 to 2032	2063
54105	Perth Road 10	Perth Road Crescent	1.40km North of Perth R	Arterial	Rural	Asphalt	Class 3	1400	10	14000	2022-04-30	74	675	$ 945,000.00	2	5	2013	50	10	2028 to 2032	2063
44995	Perth Road Crescent	Perth Road 10	Perth Road 10	Local	Urban	Asphalt	Class 4	600	7	4200	2022-04-30	89	1050	$ 630,000.00	1	3	2013	50	3	2047 to 2052	2063
46495	Wellington Street	Battersea Road	United Street	Local	Urban	Asphalt	Class 4	250	7	1750	2022-04-30	92	1050	$ 262,500.00	1	3	2013	50	3	2047 to 2052	2063
46710	Wilmer Road	0.05km West of Perth Ro	Perth Road 10	Local	Urban	Asphalt	Class 4	50	6.5	325	2022-04-30	92	1050	$ 52,500.00	1	3	2013	50	3	2047 to 2052	2063
40345	Battersea Water Street	North End of Road	Battersea Road	Local	Urban	Asphalt	Class 5	100	7	700	2022-04-30	92	1050	$ 105,000.00	1	3	2013	50	3	2047 to 2052	2063
41788	Deer Creek Drive	0.4km North of Spooner F	Whitetail Court	Local	Rural	Asphalt	Class 5	560	6	3360	2022-04-30	91	550	$ 308,000.00	1	3	2014	50	3	2047 to 2052	2064
40315	Battersea Cross Street	Wellington Street	Battersea Road	Local	Urban	Asphalt	Class 5	100	6.4	640	2022-04-30	92	1050	$ 105,000.00	1	3	2014	50	3	2047 to 2052	2064
42108	Fawn Brook Drive	0.4km North of Spooner F	Whitetail Court	Local	Rural	Asphalt	Class 5	260	6	1560	2022-04-30	94	550	$ 143,000.00	1	3	2014	50	3	2047 to 2052	2064
46545	Whitetail Court	Fawn Brook Drive	North End of Road	Local	Rural	Asphalt	Class 5	240	6	1440	2022-04-30	95	550	$ 132,000.00	1	3	2014	50	3	2047 to 2052	2064
58820	Yarker Road 4	Camden Portland Bounda	Wilton Road 18	Arterial	Rural	Asphalt	Class 3	3750	10	37500	2022-04-30	83	675	$ 2,531,250.00	2	5	2015	50	10	2028 to 2032	2065
56290	Rutledge Road	Wheatley Street	Storm Haven Lane	Arterial	Urban	Asphalt	Class 3	1100	10.4	11440	2022-04-30	83	1340	$ 1,474,000.00	2	5	2016	50	10	2028 to 2032	2066
44980	Percy Street	Bellrock Road	Bellrock Mill Street	Local	Rural	Asphalt	Class 5	250	3.2	800	2022-04-30	80	550	$ 137,500.00	2	3	2016	50	6	2040 to 2046	2066
44065	Main Street	Bellrock Road	Bellrock Mill Street	Local	Urban	Asphalt	Class 5	450	4.2	1890	2022-04-30	80	1050	$ 472,500.00	2	3	2016	50	6	2040 to 2046	2066
40435	Bellrock Mill Street	Bellrock Road	First Lake Road	Local	Urban	Asphalt	Class 5	250	5	1250	2022-04-30	82	1050	$ 262,500.00	2	3	2016	50	6	2040 to 2046	2066
42520	Goodrich Street	Percy Street	Main Street	Local	Rural	Asphalt	Class 6	100	3.7	370	2022-04-30	84	550	$ 55,000.00	2	3	2016	50	6	2040 to 2046	2066
56175	Rutledge Road	0.13km West of Sydenhar	Wheatley Street	Arterial	Urban	Asphalt	Class 3	550	10.4	5720	2022-04-30	89	1340	$ 737,000.00	1	5	2016	50	5	2040 to 2046	2066
43855	Leveque Road	Bellrock Mill Street	0.1km North of Bellrock	Local	Rural	Asphalt	Class 6	100	4	400	2022-04-30	86	550	$ 55,000.00	1	3	2016	50	3	2047 to 2052	2066
40465	Bellrock Pepper Street	Bellrock Road	First Lake Road	Local	Rural	Asphalt	Class 6	100	3.2	320	2022-04-30	87	550	$ 55,000.00	1	3	2016	50	3	2047 to 2052	2066
58705	Wilton Road 18	Yarker Road 4	0.65km West of Road 38	Arterial	Rural	Asphalt	Class 3	3300	6.7	22110	2022-04-30	64	675	$ 2,227,500.00	3	5	2018	50	15	2028 to 2032	2068
58130	Westport Road	1.10km East of Lee Road	0.76km West of Bressee	Arterial	Rural	Asphalt	Class 4	1300	9.1	11830	2022-04-30	74	550	$ 715,000.00	2	5	2018	50	10	2028 to 2032	2068
53400	Harrowsmith Road	Road 38	0.45km East of Road 38	Arterial	Urban	Asphalt	Class 3	450	7	3150	2022-04-01	84	1340	$ 603,000.00	2	5	2018	50	10	2028 to 2032	2068
58725	Wilton Road 18	0.65km West of Road 38	0.37km West of Road 38	Arterial	Urban	Asphalt	Class 3	280	12	3360	2022-05-01	84	1340	$ 375,200.00	2	5	2018	50	10	2028 to 2032	2068
0	Robinson Road	Wilton Road 18	Colebrook Road	Collector	Urban	Asphalt	Class 5	120	8	960	2022-04-30	75	1050	$ 126,000.00	2	4	2018	50	8	2033 to 2039	2068
41470	Colebrook Road East	Road 38	Kingston Road	Local	Urban	Asphalt	Class 5	100	6	600	2022-04-30	82	1050	$ 105,000.00	2	3	2018	50	6	2040 to 2046	2068
51000	Bedford Road	Portland Avenue	Alton Road	Arterial	Urban	Asphalt	Class 4	1000	7.7	7700	2022-04-30	86	1050	$ 1,050,000.00	1	5	2018	50	5	2040 to 2046	2068
58775	Wilton Road 18	0.12km West of Road 38	Road 38	Arterial	Urban	Asphalt	Class 3	120	11	1320	2022-05-03	89	1340	$ 160,800.00	1	5	2018	50	5	2040 to 2046	2068
58750	Wilton Road 18	0.37km West of Road 38	0.12km West of Road 38	Arterial	Urban	Asphalt	Class 3	250	8	2000	2022-05-02	93	1340	$ 335,000.00	1	5	2018	50	5	2040 to 2046	2068
50125	Battersea Road	Moreland Dixon Road	Sunbury Road	Arterial	Urban	Asphalt	Class 3	500	7.3	3650	2022-04-30	96	1340	$ 670,000.00	1	5	2018	50	5	2040 to 2046	2068
40180	Arena Boundary Road	2.15km East of Davey Rd	Piccadilly Road	Local	Rural	Asphalt	Class 4	450	6	2700	2022-04-30	90	550	$ 247,500.00	1	3	2018	50	3	2047 to 2052	2068
40030	Battersea Road	2.30km North of Burnt Hi	4.5km North of Burnt Hi	Arterial	Rural	Surface treated	Class 5	2200	6.7	14740	2022-04-30	29	450	$ 990,000.00	5	5	2003	30	25	2023	2022
44665	Battersea Road	Burnt Hills Road	1.70km North of Burnt H	Arterial	Rural	Surface treated	Class 5	1700	6.4	10880	2022-04-30	38	450	$ 765,000.00	5	5	2007	30	25	2023	2022
50675	Battersea Road	1.70km North of Burnt Hi	2.30km North of Burnt H	Arterial	Rural	Surface treated	Class 5	600	6.4	3840	2022-04-30	44	450	$ 270,000.00	4	5	2007	30	20	2024 to 2027	2022
51690	Alton Road	Road 38	Loughborough Portland	Local	Rural	Surface treated	Class 5	2700	5.6	15120	2022-04-30	30	270	$ 729,000.00	5	3	2003	30	15	2028 to 2032	2023
44890	North Shore Road	Hewlett Packard Road	Convery Lane	Local	Rural	Surface treated	Class 4	4000	5.7	22800	2022-04-30	42	270	$ 1,080,000.00	4	3	2007	30	12	2028 to 2032	2023
42655	Bedford Road	1.0km North of Salmon La	Desert Lake Road	Arterial	Rural	Surface treated	Class 4	3600	6.4	23040	2022-04-30	45	450	$ 1,620,000.00	4	5	2007	30	20	2024 to 2027	2024
43435	Ormsbee Road	Milburn Road	East End of Road	Local	Rural	Surface treated	Class 4	2650	6.2	16430	2022-04-30	30	270	$ 715,500.00	5	3	2014	30	15	2028 to 2032	2024
46240	Greenfield Road	West End of Road	0.70km West of Perth Ro	Local	Rural	Surface treated	Class 4	150	6	900	2022-04-30	40	270	$ 40,500.00	4	3	2000	30	12	2028 to 2032	2024
45945	Kerr Road	Petworth Road	North End of Road	Local	Rural	Surface treated	Class 4	600	4.3	2580	2022-04-30	48	270	$ 162,000.00	4	3	2003	30	12	2028 to 2032	2024
44920	Tom Watson Road	West End of Road	Watson Road	Local	Rural	Surface treated	Class 6	400	4.5	1800	2022-04-30	53	270	$ 108,000.00	4	3	2004	30	12	2028 to 2032	2024
58015	Spooner Road	0.45km West of Perth Ro	Perth Road 10	Local	Rural	Surface treated	Class 4	450	6	2700	2022-04-30	57	270	$ 121,500.00	3	3	1995	30	9	2033 to 2039	2024
41575	Orser Road	Stage Coach Road	1.20km East of Stage Co	Local	Rural	Surface treated	Class 4	1200	6.5	7800	2022-04-30	75	270	$ 324,000.00	2	3	2014	30	6	2040 to 2046	2024
42235	Westport Road	0.20km East of Burridge R	1.10km East of Lee Road	Arterial	Rural	Surface treated	Class 4	2500	6.8	17000	2022-04-30	54	450	$ 1,125,000.00	4	5	2008	30	20	2024 to 2027	2025
52495	Craig Road	Road 38	3.75km North of Road 3	Local	Rural	Surface treated	Class 4	3750	5	18750	2022-04-30	23	270	$ 1,012,500.00	5	3	2004	30	15	2028 to 2032	2025
43975	Florida Road	1.30km South of Henders	Henderson Road	Local	Rural	Surface treated	Class 4	1300	6.3	8190	2022-04-30	33	270	$ 351,000.00	5	3	2007	30	15	2028 to 2032	2025
45595	Desert Lake Road	Road 38	0.15km West of High Fal	Arterial	Rural	Surface treated	Class 5	2950	6.2	18290	2022-04-30	37	450	$ 1,327,500.00	5	5	2004	30	25	2023	2026
42025	Loughborough Portland Rd	Harrowsmith Road	Alton Road	Collector	Rural	Surface treated	Class 4	1400	6.4	8960	2022-04-30	45	375	$ 525,000.00	4	4	2004	30	16	2024 to 2027	2026
56750	Round Lake Road	4.10km East of Latimer Rd	Battersea Road	Local	Rural	Surface treated	Class 4	2200	6.1	13420	2022-04-30	41	270	$ 594,000.00	4	3	2007	30	12	2028 to 2032	2026
43030	Easy Street	West End of Road	Road 38	Local	Rural	Surface treated	Class 5	100	5.1	510	2022-04-30	50	270	$ 27,000.00	4	3	1995	30	12	2028 to 2032	2026
43735	Sunbury Road	0.60km West of Factory R	0.65km West of Hitchco	Arterial	Rural	Surface treated	Class 3	3200	7	22400	2022-04-30	62	855	$ 2,736,000.00	3	5	2011	50	15	2028 to 2032	2027
43045	Holleford Road	New Morin Road	Johnny Martin Road	Local	Rural	Surface treated	Class 4	2900	6.6	19140	2022-04-30	44	270	$ 783,000.00	4	3	2000	30	12	2028 to 2032	2027
51115	Latimer Road	Davidson Road	1.70km West of Perth Ro	Local	Rural	Surface treated	Class 4	2900	6.3	18270	2022-04-30	46	270	$ 783,000.00	4	3	2001	30	12	2028 to 2032	2027
40330	Holleford Road	Johnny Martin Road	Deer Park Lane	Local	Rural	Surface treated	Class 4	1600	6.6	10560	2022-04-30	49	270	$ 432,000.00	4	3	2011	30	12	2028 to 2032	2027
44515	Sunbury Road	0.65km West of Hitchcoc	Hitchcock Drive	Arterial	Rural	Surface treated	Class 3	700	7	4900	2022-04-30	72	855	$ 598,500.00	2	5	2003	50	10	2028 to 2032	2027
42535	Bedford Road	Alton Road	Freeman Road	Arterial	Rural	Surface treated	Class 4	2200	6.2	13640	2022-04-30	35	450	$ 990,000.00	5	5	1992	30	25	2023	2028
44905	Battersea Mill Street	Battersea Road	South End of Road	Local	Rural	Surface treated	Class 5	150	2.8	420	2022-04-30	38	270	$ 40,500.00	5	3	1990	30	15	2028 to 2032	2028
56865	Sunbury Road	Brewer Lake Road	1.30km East of Hitchcoc	Arterial	Rural	Surface treated	Class 3	1300	7	9100	2022-04-30	63	855	$ 1,111,500.00	3	5	2003	30	15	2028 to 2032	2028
43930	Long Swamp Road	German Road	2.05km South of Bellroc	Local	Rural	Surface treated	Class 6	2100	6.1	12810	2022-04-30	42	270	$ 567,000.00	4	3	2009	30	12	2028 to 2032	2028
45475	Gorr Road	Road 38	East End of Road	Local	Rural	Surface treated	Class 4	900	4.8	4320	2022-04-30	47	270	$ 243,000.00	4	3	1997	30	12	2028 to 2032	2028
43375	Keeley Road	0.3km East of Sydenham	Park Valley Road	Local	Rural	Surface treated	Class 4	2200	6.5	14300	2022-04-30	60	270	$ 594,000.00	3	3	2007	30	9	2033 to 2039	2028
42580	Graham Road	Park Street	West End of Road	Local	Rural	Surface treated	Class 5	500	4.7	2350	2022-04-30	47	270	$ 135,000.00	4	3	2011	30	12	2028 to 2032	2029

ID	Street	From	To	Classification	Roadside Environment	Surface Type	Maintenace Class	Length (m)	Width (m)	Pavement Area (m2)	Last Inspection Date	Inspection OCI	Cost $/m assumed	Replacement Value Estimate	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Install / Last Reconstruct Date	Useful Life	Risk	Timing of First Replacement (based on Risk)	Timing of First Replacement (based on Risk)
43315	Jamieson Road	1.30km East of Road 38	Loughborough Portland	Local	Rural	Surface treated	Class 4	2300	5.6	12880	2022-04-30	51	270	$ 621,000.00	4	3	2014	30	12	2028 to 2032	2029
43990	Vanluven Road	Holleford Road	Loughborough Portland	Local	Rural	Surface treated	Class 4	2400	6.1	14640	2022-04-30	53	270	$ 648,000.00	4	3	2004	30	12	2028 to 2032	2029
45640	Salmon Lake Road	Bedford Road	North End of Road	Local	Rural	Surface treated	Class 5	2100	6.5	13650	2022-04-30	54	270	$ 567,000.00	4	3	2007	30	12	2028 to 2032	2029
57095	Sunbury Road	Hitchcock Drive	Brewer Lake Road	Arterial	Rural	Surface treated	Class 3	1400	7	9800	2022-04-30	71	855	$ 1,197,000.00	2	5	2012	30	10	2028 to 2032	2029
40540	Bracken Road	Yarker Road 4	Mclean Road	Local	Rural	Surface treated	Class 4	1550	5.9	9145	2022-04-30	50	270	$ 418,500.00	4	3	2011	30	12	2028 to 2032	2030
42760	Henderson Road	Wilton Road 18	Yarker Road 4	Local	Rural	Surface treated	Class 5	1600	5.9	9440	2022-04-30	53	270	$ 432,000.00	4	3	2007	30	12	2028 to 2032	2030
42340	Freeman Road	Gould Lake Road	Bedford Road	Local	Rural	Surface treated	Class 4	1950	6.2	12090	2022-04-30	57	270	$ 526,500.00	3	3	2007	30	9	2033 to 2039	2030
44305	Mclean Road	Wallace Road	Colebrook Road	Local	Rural	Surface treated	Class 4	1350	5.9	7965	2022-04-30	55	270	$ 364,500.00	3	3	2011	30	9	2033 to 2039	2030
42265	Forest Road	Murvale Road	Stage Coach Road	Local	Rural	Surface treated	Class 5	1900	6.1	11590	2022-04-30	52	270	$ 513,000.00	4	3	2007	30	12	2028 to 2032	2031
41590	Cross Road	Bellrock Road	Verona Sand Road	Local	Rural	Surface treated	Class 4	550	4.5	2475	2022-04-30	53	270	$ 148,500.00	4	3	2009	30	12	2028 to 2032	2031
45205	Quinn Road West	Wilton Road 18	Road 38	Local	Rural	Surface treated	Class 4	1550	3.9	6045	2022-04-30	53	270	$ 418,500.00	4	3	2009	30	12	2028 to 2032	2031
44005	Loughborough Portland Rd	Alton Road	Jamieson Road	Collector	Rural	Surface treated	Class 4	1350	6.5	8775	2022-04-30	58	375	$ 506,250.00	3	4	2004	30	12	2028 to 2032	2031
41605	Loughborough Portland Rd	Jamieson Road	Vanluven Road	Collector	Rural	Surface treated	Class 4	700	6.5	4550	2022-04-30	64	375	$ 262,500.00	3	4	2004	30	12	2028 to 2032	2031
45025	River Road	West End of Road	Petworth Road	Local	Rural	Surface treated	Class 4	250	4	1000	2022-04-30	69	270	$ 67,500.00	3	3	1998	30	9	2033 to 2039	2031
40135	Latimer Road	Holmes Road	Davidson Road	Local	Rural	Surface treated	Class 4	1400	6	8400	2022-04-30	59	270	$ 378,000.00	3	3	2001	30	9	2033 to 2039	2031
45940	Factory Road	Washburn Road	Sunbury Road	Local	Rural	Surface treated	Class 4	1400	5.5	7700	2022-04-30	55	270	$ 378,000.00	3	3	2003	30	9	2033 to 2039	2031
44530	Fellows Road	West End of Road	Murvale Road	Local	Rural	Surface treated	Class 6	800	3.8	3040	2022-04-30	58	270	$ 216,000.00	3	3	1995	30	9	2033 to 2039	2031
42100	McGarvey Road	Battersea Road	0.15km North of Batters	Local	Rural	Surface treated	Class 4	150	5.8	870	2022-04-30	60	270	$ 40,500.00	3	3	1990	30	9	2033 to 2039	2031
42670	Peters Road	Harrowsmith Road	East End of Road	Local	Rural	Surface treated	Class 6	300	3.6	1080	2022-04-30	79	270	$ 81,000.00	2	3	1999	30	6	2040 to 2046	2031
45490	Arena Boundary Road	Second Lake Road	Snider Road	Local	Rural	Surface treated	Class 4	800	5.4	4320	2022-04-30	80	270	$ 216,000.00	2	3	2001	30	6	2040 to 2046	2031
41725	Horning Road	West End of Road	Sydenham Road	Local	Rural	Surface treated	Class 5	1550	5.6	8680	2022-04-30	82	270	$ 418,500.00	2	3	2001	30	6	2040 to 2046	2031
44455	Rockwood Place	Collins Drive	Moreland Dixon Road	Local	Rural	Surface treated	Class 5	200	7.2	1440	2022-04-30	84	270	$ 54,000.00	2	3	2001	30	6	2040 to 2046	2031
43075	York Road	South End of Road	Bellrock Road	Local	Rural	Surface treated	Class 4	1300	6.1	7930	2022-04-30	65	270	$ 351,000.00	3	3	2000	30	9	2033 to 2039	2032
42085	Murton Road	Road 38	1.35km East of Road 38	Local	Rural	Surface treated	Class 4	1850	5.9	10915	2022-04-30	55	270	$ 499,500.00	3	3	1996	30	9	2033 to 2039	2032
44275	Murton Road	1.35km East of Road 38	Murvale Road	Local	Rural	Surface treated	Class 4	900	6.5	5850	2022-04-30	58	270	$ 243,000.00	3	3	1996	30	9	2033 to 2039	2032
41710	Fairgrounds Road	Perth Road 10	Latimer Road	Local	Rural	Surface treated	Class 5	300	6.4	1920	2022-04-30	61	270	$ 81,000.00	3	3	1997	30	9	2033 to 2039	2032
44590	Davidson Road	Holmes Road	Mowoods Lane	Local	Rural	Surface treated	Class 4	1500	6.4	9600	2022-04-30	62	270	$ 405,000.00	3	3	1995	30	9	2033 to 2039	2032
44070	New Morin Road	Vanluven Road	Holleford Road	Local	Rural	Surface treated	Class 4	1700	5.7	9690	2022-04-30	62	270	$ 459,000.00	3	3	1996	30	9	2033 to 2039	2032
42985	Mallen Road	Craig Road	0.10km North of Craig R	Local	Rural	Surface treated	Class 6	100	4	400	2022-04-30	63	270	$ 27,000.00	3	3	1995	30	9	2033 to 2039	2032
40600	Holleford Road	0.15km East of Road 38	Vanluven Road	Local	Rural	Surface treated	Class 4	1600	6.5	10400	2022-04-30	66	270	$ 432,000.00	3	3	2003	30	9	2033 to 2039	2032
45160	Crow Lake Road	0.45km West of Badour R	0.10km East of Badour R	Local	Rural	Surface treated	Class 4	550	6.4	3520	2022-04-30	59	270	$ 148,500.00	3	3	2004	30	9	2033 to 2039	2032
46270	Station Street	Walker Street	Bank Street	Local	Urban	Surface treated	Class 5	100	5	500	2022-04-30	55	1050	$ 105,000.00	3	3	2005	30	9	2033 to 2039	2032
50750	Davidson Road	Mowoods Lane	Latimer Road	Local	Rural	Surface treated	Class 4	1300	6.4	8320	2022-04-30	75	270	$ 351,000.00	2	3	2002	30	6	2040 to 2046	2032
42370	Bradford Road	Wolfe Swamp Road	Ellerbeck Road	Local	Rural	Surface treated	Class 4	650	5.5	3575	2022-04-30	68	270	$ 175,500.00	3	3	2003	30	9	2033 to 2039	2033
43705	Frontenac Road	Mount Chesney Road	Battersea Road	Local	Rural	Surface treated	Class 4	500	5.5	2750	2022-04-30	69	270	$ 135,000.00	3	3	2003	30	9	2033 to 2039	2033
45985	Latimer Road	Davidson Road	Holmes Road	Collector	Rural	Surface treated	Class 4	2300	6	13800	2022-04-30	70	375	$ 862,500.00	2	4	1992	30	8	2033 to 2039	2033
40585	Stage Coach Road	Railton Road	Campbell Road	Collector	Rural	Surface treated	Class 4	2200	6.5	14300	2022-04-30	73	375	$ 825,000.00	2	4	1995	30	8	2033 to 2039	2033
40045	Bradford Road	2.00km East of Camden P	Wolfe Swamp Road	Collector	Rural	Surface treated	Class 4	2500	5.7	14250	2022-04-30	80	375	$ 937,500.00	2	4	1993	30	8	2033 to 2039	2033
45175	Alton Road	Loughborough Portland R	Bedford Road	Collector	Rural	Surface treated	Class 4	3700	6	22200	2022-04-30	80	375	$ 1,387,500.00	2	4	2003	30	8	2033 to 2039	2033
43210	Mount Chesney Road	Frontenac Road	Beach Nut Road	Local	Rural	Surface treated	Class 4	1600	6.1	9760	2022-04-30	77	270	$ 432,000.00	2	3	2001	30	6	2040 to 2046	2033
41695	Quarry Road	0.40km North of Boyce R	1.30km North of Boyce R	Local	Rural	Surface treated	Class 6	900	5.5	4950	2022-04-30	70	270	$ 243,000.00	2	3	2003	30	6	2040 to 2046	2033
43015	Davidson Road	Latimer Road	Holmes Road	Local	Rural	Surface treated	Class 4	1000	6.4	6400	2022-04-30	71	270	$ 270,000.00	2	3	2003	30	6	2040 to 2046	2033
43105	Holleford Road	Trousdale Road	New Morin Road	Local	Rural	Surface treated	Class 4	1800	6.1	10980	2022-04-30	72	270	$ 486,000.00	2	3	2003	30	6	2040 to 2046	2033
45415	Holmes Road	Silverwood Drive	Davidson Road	Local	Rural	Surface treated	Class 4	900	6.4	5760	2022-04-30	73	270	$ 243,000.00	2	3	2003	30	6	2040 to 2046	2033
40645	Rideau Road	Burnt Hills Road	0.75km North of Burnt H	Local	Rural	Surface treated	Class 4	950	4.9	4655	2022-04-30	76	270	$ 256,500.00	2	3	1993	30	6	2040 to 2046	2033
42505	Bradshaw Road	Steele Road	East End of Road	Local	Rural	Surface treated	Class 4	1900	4.6	8740	2022-04-30	78	270	$ 513,000.00	2	3	2003	30	6	2040 to 2046	2033
46675	German Road	1.65km North of Petworth	Long Swamp Road	Local	Rural	Surface treated	Class 4	1500	5.5	8250	2022-04-30	78	270	$ 405,000.00	2	3	2003	30	6	2040 to 2046	2033
40930	Wilmer Road	McFadden Road	Ritchie Road	Local	Rural	Surface treated	Class 4	800	5.3	4240	2022-04-30	78	270	$ 216,000.00	2	3	2003	30	6	2040 to 2046	2033
41275	Camden Portland Boundar	Yarker Road 4	Colebrook Road	Local	Rural	Surface treated	Class 4	2850	5.6	15960	2022-04-30	79	270	$ 769,500.00	2	3	2003	30	6	2040 to 2046	2033
46105	Church Road (Bellrock)	Bellrock Road	Mary Moore Road	Local	Rural	Surface treated	Class 4	1500	5.3	7950	2022-04-30	79	270	$ 405,000.00	2	3	2003	30	6	2040 to 2046	2033
41335	Switzer Road	Portland Avenue	North End of Road	Local	Rural	Surface treated	Class 6	200	3	600	2022-04-30	80	270	$ 54,000.00	2	3	2003	30	6	2040 to 2046	2033
44080	Clark Road	McConnell Road	East End of Road	Local	Rural	Surface treated	Class 5	900	3.8	3420	2022-04-30	82	270	$ 243,000.00	2	3	2003	30	6	2040 to 2046	2033
45430	Petworth Road	Kerr Road	Road 38	Local	Rural	Surface treated	Class 4	3550	6.3	22365	2022-04-30	83	270	$ 958,500.00	2	3	2003	30	6	2040 to 2046	2033
45055	Maple Crest Road	Lakefield Drive	0.80km East of Lakefield	Local	Rural	Surface treated	Class 5	800	5.8	4640	2022-04-30	83	550	$ 440,000.00	2	3	1992	30	6	2040 to 2046	2033
41515	Rideau Road	0.75km North of Burnt Hi	North End of Road	Local	Rural	Surface treated	Class 4	100	4.5	450	2022-04-30	84	270	$ 27,000.00	2	3	2003	30	6	2040 to 2046	2033
44545	Murvale Road	Scanlan Road	Amey Road	Local	Rural	Surface treated	Class 4	1400	6.5	9100	2022-04-30	90	270	$ 378,000.00	1	3	2003	30	3	2047 to 2052	2033
44560	Copper Kettle Drive	Lakefield Drive	Maple Crest Court	Local	Rural	Surface treated	Class 5	400	5.8	2320	2022-04-30	90	550	$ 220,000.00	1	3	1992	30	3	2047 to 2052	2033
46315	Murvale Road	Murton Road	Scanlan Road	Local	Rural	Surface treated	Class 4	1550	6.5	10075	2022-04-30	93	270	$ 418,500.00	1	3	2003	30	3	2047 to 2052	2033
57900	Westport Road	New Road	0.20km East of Burridge	Arterial	Rural	Surface treated	Class 4	3400	6.6	22440	2022-04-30	55	450	$ 1,530,000.00	3	5	2018	30	15	2028 to 2032	2034
43600	Quarry Road	Boyce Road	0.40km North of Boyce R	Local	Rural	Surface treated	Class 6	400	5	2000	2022-04-30	69	270	$ 108,000.00	3	3	2004	30	9	2033 to 2039	2034
52610	Lakefield Drive	2.00km South of Holmes	1.30km South of Holmes	Local	Rural	Surface treated	Class 4	700	6.2	4340	2022-04-30	77	270	$ 189,000.00	2	3	2004	30	6	2040 to 2046	2034
46015	Desert Lake Road	0.15km West of High Falls	0.15km East of High Falls	Arterial	Rural	Surface treated	Class 5	300	6.7	2010	2022-04-30	89	450	$ 135,000.00	1	5	2004	30	5	2040 to 2046	2034
40245	Trousdale Road	Hinchinbrooke Road	Holleford Road	Local	Rural	Surface treated	Class 4	1700	6.2	10540	2022-04-30	55	270	$ 459,000.00	3	3	2005	30	9	2033 to 2039	2035
43000	Cedarwoods Drive	Road 38	Valleyview Drive	Local	Rural	Surface treated	Class 5	360	6.9	2484	2022-04-30	66	270	$ 97,200.00	3	3	2005	30	9	2033 to 2039	2035
50625	Holleford Road	Vanluven Road	Trousdale Road	Local	Rural	Surface treated	Class 4	1350	6.2	8370	2022-04-30	83	270	$ 364,500.00	2	3	2005	30	6	2040 to 2046	2035
45010	Petworth Road	River Road	Kerr Road	Local	Rural	Surface treated	Class 4	3250	6.7	21775	2022-04-30	88	270	$ 877,500.00	1	3	1998	30	3	2047 to 2052	2035
46780	Petworth Road	Garrison Court	River Road	Local	Rural	Surface treated	Class 4	1250	6.7	8375	2022-04-30	90	270	$ 337,500.00	1	3	1998	30	3	2047 to 2052	2036
45655	Verona Sand Road	West End of Road	Cross Road	Local	Rural	Surface treated	Class 4	2200	5	11000	2022-04-30	55	270	$ 594,000.00	3	3	2007	30	9	2033 to 2039	2037
42010	Duff Road	Round Lake Road	North End of Road	Local	Rural	Surface treated	Class 5	2250	6.1	13725	2022-04-30	63	270	$ 607,500.00	3	3	2007	30	9	2033 to 2039	2037
45550	Round Lake Road	1.20km East of Latimer Rd	2.20km East of Latimer R	Local	Rural	Surface treated	Class 6	1000	6.3	6300	2022-04-30	68	270	$ 270,000.00	3	3	2007	30	9	2033 to 2039	2037
45505	Rosedale Road	Alton Road	Freeman Road	Local	Rural	Surface treated	Class 4	1350	6.3	8505	2022-04-30	85	270	$ 364,500.00	1	3	2007	30	3	2047 to 2052	2037
41785	Deer Creek Drive	Spooner Road	0.40km North of Spoone	Local	Rural	Surface treated	Class 5	400	6	2400	2022-04-30	90	270	$ 108,000.00	1	3	2007	30	3	2047 to 2052	2037
45040	Orser Road	West End of Road	Stage Coach Road	Local	Rural	Surface treated	Class 4	1200	6	7200	2022-04-30	54	270	$ 324,000.00	4	3	1998	30	12	2028 to 2032	2038
44695	Norway Road	McFadden Road	Wilmer Road	Local	Rural	Surface treated	Class 4	1900	5.2	9880	2022-04-30	68	270	$ 513,000.00	3	3	2008	30	9	2033 to 2039	2038
40960	Greenfield Road	0.70km West of Perth Ro	Perth Road 10	Local	Rural	Surface treated	Class 4	700	6.7	4690	2022-04-30	74	270	$ 189,000.00	2	3	2000	30	6	2040 to 2046	2038
42115	Spooner Road	West End of Road	0.45km West of Perth R	Local	Rural	Surface treated	Class 4	700	6	4200	2022-04-30	57	270	$ 189,000.00	3	3	1995	30	9	2033 to 2039	2039
45670	Verona Sand Road	Cross Road	0.70km East of Cross Ro	Local	Rural	Surface treated	Class 4	700	5.4	3780	2022-04-30	56	270	$ 189,000.00	3	3	2009	30	9	2033 to 2039	2039
46750	Wolfe Swamp Road	Colebrook Road	Petworth Road	Local	Rural	Surface treated	Class 4	2900	6.3	18270	2022-04-30	58	270	$ 783,000.00	3	3	2009	30	9	2033 to 2039	2039
41050	Canoe Lake Road	Desert Lake Road	Holsgrove Lane	Local	Rural	Surface treated	Class 4	2000	6.7	13400	2022-04-30	62	270	$ 540,000.00	3	3	2009	30	9	2033 to 2039	2039
43870	Leveque Road	0.10km North of Bellrock	Bellrock Pero Road	Local	Rural	Surface treated	Class 6	1000	6	6000	2022-04-30	68	270	$ 270,000.00	3	3	2009	30	9	2033 to 2039	2039
45370	Redmond Road	0.25km West of Holleford	Holleford Road	Local	Rural	Surface treated	Class 6	250	6.4	1600	2022-04-30	74	270	$ 67,500.00	2	3	2009	30	6	2040 to 2046	2039
42595	Graham Road	Park Street	Road 38	Local	Rural	Surface treated	Class 5	200	4.7	940	2022-04-30	77	270	$ 54,000.00	2	3	2009	30	6	2040 to 2046	2039
40165	Arena Boundary Road	Davey Road	2.15km East of Davey Rd	Local	Rural	Surface treated	Class 4	2150	6	12900	2022-04-30	64	270	$ 580,500.00	3	3	2010	30	9	2033 to 2039	2040
43690	Latimer Road	Dover Road	Davidson Road	Collector	Rural	Surface treated	Class 4	950	6.4	6080	2022-04-30	75	375	$ 356,250.00	2	4	2010	30	8	2033 to 2039	2040
42550	Holmes Road	Heska Crescent	Heska Crescent	Local	Rural	Surface treated	Class 4	1350	6.7	9045	2022-04-30	80	270	$ 364,500.00	2	3	2000	30	6	2040 to 2046	2040
56980	Mount Chesney Road	West End of Road	Battersea Road	Local	Rural	Surface treated	Class 5	1000	5.4	5400	2022-04-30	76	270	$ 270,000.00	2	3	2002	30	6	2040 to 2046	2040

ID	Street	From	To	Classification	Roadside Environment	Surface Type	Maintenace Class	Length (m)	Width (m)	Pavement Area (m2)	Last Inspection Date	Inspection OCI	Cost $/m assumed	Replacement Value Estimate	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Install / Last Reconstruct Date	Useful Life	Risk	Timing of First Replacement (based on Risk)	Timing of First Replacement (based on Risk)
43615	Lakefield Drive	1.30km South of Holmes I	Holmes Road	Local	Rural	Surface treated	Class 4	1300	5.4	7020	2022-04-30	72	270	$ 351,000.00	2	3	1990	30	6	2040 to 2046	2040
43095	Holmes Road	Heska Crescent	Silverwood Drive	Local	Rural	Surface treated	Class 4	600	6.4	3840	2022-04-30	73	270	$ 162,000.00	2	3	2010	30	6	2040 to 2046	2040
42490	German Road	Petworth Road	1.65km North of Petwor	Local	Rural	Surface treated	Class 4	1650	6.1	10065	2022-04-30	74	270	$ 445,500.00	2	3	1996	30	6	2040 to 2046	2040
42790	Heska Crescent	Holmes Road	Holmes Road	Local	Rural	Surface treated	Class 5	1250	6.7	8375	2022-04-30	75	270	$ 337,500.00	2	3	2010	30	6	2040 to 2046	2040
43450	Kildeer Drive	Pine Ridge Road	North End of Road	Local	Rural	Surface treated	Class 6	200	5.1	1020	2022-04-30	75	270	$ 54,000.00	2	3	1996	30	6	2040 to 2046	2040
43345	Johns Way Road	Heska Crescent	Heska Crescent	Local	Rural	Surface treated	Class 6	300	6.5	1950	2022-04-30	75	270	$ 81,000.00	2	3	2010	30	6	2040 to 2046	2040
41740	Davidson Road	Latimer Road	Perth Road 10	Local	Rural	Surface treated	Class 4	2600	6.4	16640	2022-04-30	76	270	$ 702,000.00	2	3	1995	30	6	2040 to 2046	2040
40000	Abernathy Road	Ida Hill Road	0.8km East of Ida Hill Ro	Local	Rural	Surface treated	Class 4	800	5.9	4720	2022-04-30	76	270	$ 216,000.00	2	3	2010	30	6	2040 to 2046	2040
43630	Lakeside Road	West End of Road	Duff Road	Local	Rural	Surface treated	Class 4	300	4.8	1440	2022-04-30	79	270	$ 81,000.00	2	3	1994	30	6	2040 to 2046	2040
45535	Round Lake Road	Latimer Road	1.20km East of Latimer F	Local	Rural	Surface treated	Class 4	1200	6.2	7440	2022-04-30	79	270	$ 324,000.00	2	3	1995	30	6	2040 to 2046	2040
45970	Stage Coach Road	Orser Road	Railton Road	Local	Rural	Surface treated	Class 4	2900	5.6	16240	2022-04-30	79	270	$ 783,000.00	2	3	1995	30	6	2040 to 2046	2040
46420	Washburn Road	Ida Hill Road	Factory Road	Local	Rural	Surface treated	Class 4	1600	6.6	10560	2022-04-30	80	270	$ 432,000.00	2	3	1994	30	6	2040 to 2046	2040
42415	Garrison Court	South End of Road	Petworth Road	Local	Rural	Surface treated	Class 5	450	5.5	2475	2022-04-30	80	270	$ 121,500.00	2	3	1995	30	6	2040 to 2046	2040
44470	Mount Chesney Road	Battersea Road	Frontenac Road	Local	Rural	Surface treated	Class 4	400	5.8	2320	2022-04-30	81	270	$ 108,000.00	2	3	1995	30	6	2040 to 2046	2040
45340	Randy Clark Road	West End of Road	Battersea Road	Local	Rural	Surface treated	Class 4	2200	6.1	13420	2022-04-30	82	270	$ 594,000.00	2	3	1997	30	6	2040 to 2046	2040
44185	Masonville Road	North End of Road	Craig Road	Local	Rural	Surface treated	Class 6	250	3.5	875	2022-04-30	82	270	$ 67,500.00	2	3	1996	30	6	2040 to 2046	2040
40945	Camden Portland Boundar	Colebrook Road	Petworth Road	Local	Rural	Surface treated	Class 4	2100	5.5	11550	2022-04-30	84	270	$ 567,000.00	2	3	1996	30	6	2040 to 2046	2040
45835	Silverwood Drive	Holmes Road	North End of Road	Local	Rural	Surface treated	Class 4	950	5.9	5605	2022-04-30	84	270	$ 256,500.00	2	3	2010	30	6	2040 to 2046	2040
43720	Campbell Road	0.5km West of Stage Coac	Stage Coach Road	Local	Rural	Surface treated	Class 4	2000	6.4	12800	2022-04-30	85	270	$ 540,000.00	1	3	2000	30	3	2047 to 2052	2040
44485	Gould Lake Road	Freeman Road	0.85km North of Freema	Local	Rural	Surface treated	Class 4	900	6.1	5490	2022-04-30	85	270	$ 243,000.00	1	3	2000	30	3	2047 to 2052	2040
43060	Holleford Road	Deer Park Lane	Desert Lake Road	Local	Rural	Surface treated	Class 4	2700	6.6	17820	2022-04-30	60	270	$ 729,000.00	3	3	2011	30	9	2033 to 2039	2041
46375	Wallace Road	Camden Portland Bounda	Mclean Road	Local	Rural	Surface treated	Class 4	3300	5.6	18480	2022-04-30	60	270	$ 891,000.00	3	3	2011	30	9	2033 to 2039	2041
42955	Hogan Road	West End of Road	Wilmer Road	Local	Rural	Surface treated	Class 4	1900	4.9	9310	2022-04-30	67	270	$ 513,000.00	3	3	2011	30	9	2033 to 2039	2041
43120	Holmes Road	Davidson Road	Latimer Road	Local	Rural	Surface treated	Class 4	1400	6.7	9380	2022-04-30	67	270	$ 378,000.00	3	3	2011	30	9	2033 to 2039	2041
46690	Wilmer Road	Ritchie Road	Norway Road	Local	Rural	Surface treated	Class 4	1750	5.3	9275	2022-04-30	71	270	$ 472,500.00	2	3	2011	30	6	2040 to 2046	2041
46660	Wilmer Road	Rutledge Road	McFadden Road	Local	Rural	Surface treated	Class 4	4750	6.7	31825	2022-04-30	72	270	$ 1,282,500.00	2	3	2011	30	6	2040 to 2046	2041
45130	Princess Road	West End of Road	0.15km West of Batters	Local	Urban	Surface treated	Class 5	1650	6.1	10065	2022-04-30	75	1050	$ 1,732,500.00	2	3	2011	30	6	2040 to 2046	2041
43825	Leland Road	0.30km East of Perth Roa	1.60km East of Perth Ro	Local	Rural	Surface treated	Class 4	1600	6.3	10080	2022-04-30	77	270	$ 432,000.00	2	3	2011	30	6	2040 to 2046	2041
46705	Wilmer Road	Norway Road	0.05km West of Perth Ro	Local	Rural	Surface treated	Class 4	700	5.4	3780	2022-04-30	83	270	$ 189,000.00	2	3	2011	30	6	2040 to 2046	2041
45220	Railton Road	Murvale Road	Stage Coach Road	Collector	Rural	Surface treated	Class 4	1800	6.7	12060	2022-04-30	88	375	$ 675,000.00	1	4	2011	30	4	2040 to 2046	2041
43810	Leland Road	Perth Road 10	0.30km East of Perth Ro	Local	Rural	Surface treated	Class 4	300	6.2	1860	2022-04-30	85	270	$ 81,000.00	1	3	2011	30	3	2047 to 2052	2041
45460	Ritchie Road	Wilmer Road	Perth Road 10	Local	Rural	Surface treated	Class 4	1900	6.6	12540	2022-04-30	66	270	$ 513,000.00	3	3	2012	30	9	2033 to 2039	2042
45385	Revell Road	Bank Street	North End of Road	Local	Urban	Surface treated	Class 5	900	6.1	5490	2022-04-30	66	1050	$ 945,000.00	3	3	2012	30	9	2033 to 2039	2042
44380	Middle Woodlands Drive	Autumn Ridge Drive	South End of Road	Local	Rural	Surface treated	Class 6	500	7	3500	2022-04-30	66	270	$ 135,000.00	3	3	2012	30	9	2033 to 2039	2042
44635	North Shore Crescent	Perth Road 10	Perth Road 10	Local	Rural	Surface treated	Class 4	1100	6.5	7150	2022-04-30	67	270	$ 297,000.00	3	3	2012	30	9	2033 to 2039	2042
41485	Collins Drive	Autumn Ridge Drive	West End of Road	Local	Rural	Surface treated	Class 6	150	7	1050	2022-04-30	69	270	$ 40,500.00	3	3	2012	30	9	2033 to 2039	2042
44770	Old Boy Road	Perth Road 10	Holmes Road	Local	Rural	Surface treated	Class 4	1600	6.4	10240	2022-04-30	72	270	$ 432,000.00	2	3	2012	30	6	2040 to 2046	2042
46570	White Lake Road	Buck Bay Road	1.70km East of Buck Bay	Local	Rural	Surface treated	Class 4	1700	6.1	10370	2022-04-30	75	270	$ 459,000.00	2	3	2012	30	6	2040 to 2046	2042
44230	McConnell Road	South End of Road	Clark Road	Local	Rural	Surface treated	Class 5	1600	4.5	7200	2022-04-30	75	270	$ 432,000.00	2	3	2012	30	6	2040 to 2046	2042
44245	McConnell Road	Clark Road	Yarker Road 4	Local	Rural	Surface treated	Class 5	1450	5.5	7975	2022-04-30	76	270	$ 391,500.00	2	3	2012	30	6	2040 to 2046	2042
40240	Autumn Ridge Drive	Middle Woodland Drive	South End of Road	Local	Rural	Surface treated	Class 6	300	7.2	2160	2022-04-30	78	270	$ 81,000.00	2	3	2012	30	6	2040 to 2046	2042
40570	Bradford Road	Camden Portland Bounda	2.00km East of Camden	Local	Rural	Surface treated	Class 4	500	5.7	2850	2022-04-30	81	270	$ 135,000.00	2	3	2012	30	6	2040 to 2046	2042
43585	Lakefield Drive	South End of Road	Holmes Road	Local	Rural	Surface treated	Class 4	600	6.2	3720	2022-04-30	81	270	$ 162,000.00	2	3	2012	30	6	2040 to 2046	2042
41550	Country Woods Drive	Campbell Road	South End of Road	Local	Rural	Surface treated	Class 4	700	6	4200	2022-04-30	84	270	$ 189,000.00	2	3	2012	30	6	2040 to 2046	2042
42700	Greenfield Road	0.77km East of Perth Roa	Duff Road	Local	Rural	Surface treated	Class 4	830	6.1	5063	2022-04-30	84	270	$ 224,100.00	2	3	2012	30	6	2040 to 2046	2042
46150	Sydenham Walker Road	Loughborough Portland R	Rock Quarry Lane	Local	Rural	Surface treated	Class 4	1000	6.4	6400	2022-04-30	84	270	$ 270,000.00	2	3	2012	30	6	2040 to 2046	2042
40300	Bank Street	Revell Road	Revell Road	Local	Rural	Surface treated	Class 5	500	6	3000	2022-04-30	86	270	$ 135,000.00	1	3	2012	30	3	2047 to 2052	2042
43135	Holmes Road	Latimer Road	Old Boy Road	Local	Rural	Surface treated	Class 4	400	6.4	2560	2022-04-30	87	270	$ 108,000.00	1	3	2012	30	3	2047 to 2052	2042
42055	Ellerbeck Road	Bradford Road	Petworth Road	Local	Rural	Surface treated	Class 6	1500	4.5	6750	2022-04-30	58	270	$ 405,000.00	3	3	2013	30	9	2033 to 2039	2043
40150	Arena Boundary Road	Snider Road	Davey Road	Local	Rural	Surface treated	Class 4	2150	4.7	10105	2022-04-30	63	270	$ 580,500.00	3	3	2013	30	9	2033 to 2039	2043
40780	Burnett Road	South End of Road	Road 38	Local	Rural	Surface treated	Class 4	300	5.9	1770	2022-04-30	69	270	$ 81,000.00	3	3	2013	30	9	2033 to 2039	2043
40201	Burnt Hills Road	1.8km East of Battersea F	5.0km East of Battersea	Local	Rural	Surface treated	Class 4	3250	5.8	18850	2022-04-30	70	270	$ 877,500.00	2	3	2013	30	6	2040 to 2046	2043
40270	Badour Road	South End of Road	Crow Lake Road	Local	Rural	Surface treated	Class 4	2200	5.2	11440	2022-04-30	75	270	$ 594,000.00	2	3	2013	30	6	2040 to 2046	2043
40510	Boyce Road	Watson Road	0.7km West of Road 38	Local	Rural	Surface treated	Class 4	1780	5.5	9790	2022-04-30	75	270	$ 480,600.00	2	3	2013	30	6	2040 to 2046	2043
41065	Canoe Lake Road	Holsgrove Lane	James Wilson Road	Local	Rural	Surface treated	Class 4	2300	6	13800	2022-04-30	76	270	$ 621,000.00	2	3	2013	30	6	2040 to 2046	2043
46735	Wolfe Lake Road	Westport Road	North End of Road	Local	Rural	Surface treated	Class 4	2200	6	13200	2022-04-30	77	270	$ 594,000.00	2	3	2013	30	6	2040 to 2046	2043
42250	Forest Hill Point	Valleyview Drive	South End of Road	Local	Rural	Surface treated	Class 6	400	6.7	2680	2022-04-30	78	270	$ 108,000.00	2	3	2013	30	6	2040 to 2046	2043
43180	Holmes Road	Lakefield Drive	Davidson Road	Local	Rural	Surface treated	Class 4	1500	6.5	9750	2022-04-30	80	270	$ 405,000.00	2	3	2013	30	6	2040 to 2046	2043
44365	Mica Point Road	South End of Road	Badour Road	Local	Rural	Surface treated	Class 6	450	4.5	2025	2022-04-30	82	270	$ 121,500.00	2	3	2013	30	6	2040 to 2046	2043
44680	Norway Road	Draper Lake Road	Charlie Green Road	Local	Rural	Surface treated	Class 4	100	5.2	520	2022-04-30	84	270	$ 27,000.00	2	3	2013	30	6	2040 to 2046	2043
45715	Sands Road	Battersea Road	East End of Road	Local	Rural	Surface treated	Class 4	2600	6.7	17420	2022-04-30	84	270	$ 702,000.00	2	3	2013	30	6	2040 to 2046	2043
43665	Norway Road	Draper Lake Road	Norway Road	Local	Rural	Surface treated	Class 6	150	5.8	870	2022-04-30	84	270	$ 40,500.00	2	3	2013	30	6	2040 to 2046	2043
40975	Campbell Road	Murvale Road	Stage Coach Road	Local	Rural	Surface treated	Class 4	2000	6.4	12800	2022-04-30	85	270	$ 540,000.00	1	3	2013	30	3	2047 to 2052	2043
44395	Milburn Road	Ida Hill Road	2.0km West of Ida Hill Ro	Local	Rural	Surface treated	Class 4	2000	6.5	13000	2022-04-30	85	270	$ 540,000.00	1	3	2013	30	3	2047 to 2052	2043
57670	Westport Road	2.70km West of Buck Bay	Buck Bay Road	Arterial	Rural	Surface treated	Class 4	2700	6.4	17280	2022-04-30	67	450	$ 1,215,000.00	3	5	2014	30	15	2028 to 2032	2044
51345	Bedford Road	1.5km North of Freeman I	Busch Lane	Arterial	Rural	Surface treated	Class 4	4050	6.2	25110	2022-04-30	72	450	$ 1,822,500.00	2	5	2014	30	10	2028 to 2032	2044
43945	Loughborough Drive Road	South End of Road	Sydenham Road	Local	Rural	Surface treated	Class 6	500	4.3	2150	2022-04-30	64	270	$ 135,000.00	3	3	2014	30	9	2033 to 2039	2044
45955	Spooner Road	Perth Road 10	East End of Road	Local	Rural	Surface treated	Class 4	550	6	3300	2022-04-30	66	270	$ 148,500.00	3	3	2014	30	9	2033 to 2039	2044
46300	Valleyview Drive	South End of Road	Cedarwoods Drive	Local	Rural	Surface treated	Class 5	500	6.3	3150	2022-04-30	67	270	$ 135,000.00	3	3	2014	30	9	2033 to 2039	2044
44575	Mustard Road	East End of Road	Craig Road	Local	Rural	Surface treated	Class 6	250	3.5	875	2022-04-30	68	270	$ 67,500.00	3	3	2014	30	9	2033 to 2039	2044
43195	Holmes Road	Davidson Road	Moreland Dixon Road	Local	Rural	Surface treated	Class 4	600	6.1	3660	2022-04-30	72	270	$ 162,000.00	2	3	2014	30	6	2040 to 2046	2044
40966	Milburn Road	Battersea Road	Ida Hill Road	Local	Rural	Surface treated	Class 4	850	6.5	5525	2022-04-30	73	270	$ 229,500.00	2	3	2014	30	6	2040 to 2046	2044
41185	Cedarwoods Drive	Valleyview Drive	0.30km North of Valleyv	Local	Rural	Surface treated	Class 5	310	6.9	2139	2022-04-30	73	270	$ 83,700.00	2	3	2014	30	6	2040 to 2046	2044
46510	Wellington Street	United Street	Milburn Road	Local	Rural	Surface treated	Class 4	550	6.5	3575	2022-04-30	74	270	$ 148,500.00	2	3	2014	30	6	2040 to 2046	2044
41005	Canoe Lake Road	Desert Lake Road	0.8km North of Desert La	Local	Rural	Surface treated	Class 4	850	6	5100	2022-04-30	75	270	$ 229,500.00	2	3	2014	30	6	2040 to 2046	2044
43570	Lake Road	0.60km West of Lower Ro	Lower Round Lake Road	Local	Rural	Surface treated	Class 6	600	5	3000	2022-04-30	75	270	$ 162,000.00	2	3	2014	30	6	2040 to 2046	2044
45520	Round Lake Road	Moreland Dixon Road	Latimer Road	Local	Rural	Surface treated	Class 5	800	6	4800	2022-04-30	79	270	$ 216,000.00	2	3	2014	30	6	2040 to 2046	2044
44950	Park Street	Centennial Park Road	Graham Road	Local	Rural	Surface treated	Class 5	200	7.1	1420	2022-04-30	80	270	$ 54,000.00	2	3	2014	30	6	2040 to 2046	2044
44965	Park Valley Road	South End of Road	Keeley Road	Local	Rural	Surface treated	Class 4	450	7.3	3285	2022-04-30	81	270	$ 121,500.00	2	3	2014	30	6	2040 to 2046	2044
41380	Cliffside Drive	Railton Road	North End of Road	Local	Rural	Surface treated	Class 5	800	6.4	5120	2022-04-30	82	270	$ 216,000.00	2	3	2014	30	6	2040 to 2046	2044
40495	Botting Road	Bedford Road	Sills Bay Road	Local	Rural	Surface treated	Class 4	750	6.2	4650	2022-04-30	84	270	$ 202,500.00	2	3	2014	30	6	2040 to 2046	2044
40210	Ashwood Drive	Rutledge Road	North End of Road	Local	Rural	Surface treated	Class 5	800	5.6	4480	2022-04-30	87	550	$ 440,000.00	1	3	2014	30	3	2047 to 2052	2044
40967	Milburn Road	2.9km East of Battersea R	0.45km East of Ormsbee	Local	Rural	Surface treated	Class 4	1450	6.5	9425	2022-04-30	90	270	$ 391,500.00	1	3	2014	30	3	2047 to 2052	2044
44350	Meadow Ridge Road	Park Valley Road	East End of Road	Local	Rural	Surface treated	Class 6	130	7.3	949	2022-04-30	90	270	$ 35,100.00	1	3	2014	30	3	2047 to 2052	2044
44410	Milburn Road	1.80km South of Batterse	Wellington Street	Local	Rural	Surface treated	Class 4	1800	6.5	11700	2022-04-30	92	270	$ 486,000.00	1	3	2014	30	3	2047 to 2052	2044
53070	Desert Lake Road	2.55km West of Bedford I	1.90km West of Bedford	Arterial	Rural	Surface treated	Class 5	650	6.7	4355	2022-04-30	75	450	$ 292,500.00	2	5	2015	30	10	2028 to 2032	2045

ID	Street	From	To	Classification	Roadside Environment	Surface Type	Maintenace Class	Length (m)	Width (m)	Pavement Area (m2)	Last Inspection Date	Inspection OCI	Cost $/m assumed	Replacement Value Estimate	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Install / Last Reconstruct Date	Useful Life	Risk	Timing of First Replacement (based on Risk)	Timing of First Replacement (based on Risk)
53300	Desert Lake Road	1.70km West of Bedford I	Bedford Road	Arterial	Rural	Surface treated	Class 5	1700	6.7	11390	2022-04-30	76	450	$ 765,000.00	2	5	2015	30	10	2028 to 2032	2045
52955	Desert Lake Road	Deyos Road	Holleford Road	Arterial	Rural	Surface treated	Class 5	2800	6.7	18760	2022-04-30	80	450	$ 1,260,000.00	2	5	2015	30	10	2028 to 2032	2045
41410	Colebrook Road	1.70km East of Cambden	2.70km East of Cambder	Local	Rural	Surface treated	Class 4	1000	6.5	6500	2022-04-30	58	270	$ 270,000.00	3	3	2015	30	9	2033 to 2039	2045
42160	First Lake Road	0.70km North of Bellrock	1.70km North of Bellrock	Local	Rural	Surface treated	Class 4	1000	6	6000	2022-04-30	59	270	$ 270,000.00	3	3	2015	30	9	2033 to 2039	2045
44440	Morrison Road	West End of Road	Wilmer Road	Local	Rural	Surface treated	Class 4	1200	5.5	6600	2022-04-30	60	270	$ 324,000.00	3	3	2015	30	9	2033 to 2039	2045
41425	Colebrook Road	2.70km East of Cambden	3.80km East of Cambder	Local	Rural	Surface treated	Class 4	1100	6.5	7150	2022-04-30	64	270	$ 297,000.00	3	3	2015	30	9	2033 to 2039	2045
41395	Colebrook Road	Cambden Portland Bound	1.70km East of Cambder	Local	Rural	Surface treated	Class 4	1700	6.5	11050	2022-04-30	65	270	$ 459,000.00	3	3	2015	30	9	2033 to 2039	2045
42640	Green Bay Road	Burns Road	Burridge Road	Local	Rural	Surface treated	Class 4	2900	6	17400	2022-04-30	65	270	$ 783,000.00	3	3	2015	30	9	2033 to 2039	2045
44170	Mary Moore Road	Church Road (Bellrock)	2.07km North of Church	Local	Rural	Surface treated	Class 4	2200	5.5	12100	2022-04-30	65	270	$ 594,000.00	3	3	2015	30	9	2033 to 2039	2045
46405	Washburn Road	Battersea Road	Ida Hill Road	Local	Rural	Surface treated	Class 4	2000	6.2	12400	2022-04-30	66	270	$ 540,000.00	3	3	2015	30	9	2033 to 2039	2045
45190	Quinn Road East	Road 38	East End of Road	Local	Rural	Surface treated	Class 4	1600	5.2	8320	2022-04-30	67	270	$ 432,000.00	3	3	2015	30	9	2033 to 2039	2045
42865	Hinchinbrooke Road	0.20km North of Road 38	0.29km North of Trousda	Local	Rural	Surface treated	Class 5	1000	6.4	6400	2022-04-30	67	270	$ 270,000.00	3	3	2015	30	9	2033 to 2039	2045
41035	Canoe Lake Road	1.3km North of Desert Lal	2.8km North of Desert La	Local	Rural	Surface treated	Class 4	1500	6.7	10050	2022-04-30	68	270	$ 405,000.00	3	3	2015	30	9	2033 to 2039	2045
41440	Colebrook Road	3.80km East of Cambden	5.30km East of Cambder	Local	Rural	Surface treated	Class 4	1500	6.5	9750	2022-04-30	68	270	$ 405,000.00	3	3	2015	30	9	2033 to 2039	2045
44155	Mary Moore Road	2.07km North of Church R	3.17km North of Church	Local	Rural	Surface treated	Class 4	1100	5.5	6050	2022-04-30	69	270	$ 297,000.00	3	3	2015	30	9	2033 to 2039	2045
45280	Railton Road	0.05km East of Sydenham	Cliffside Drive	Collector	Rural	Surface treated	Class 4	2900	6.4	18560	2022-04-30	82	375	$ 1,087,500.00	2	4	2015	30	8	2033 to 2039	2045
46450	Washburn Road	1.00km East of Factory Rd	East End of Road	Local	Rural	Surface treated	Class 4	3150	6.3	19845	2022-04-30	70	270	$ 850,500.00	2	3	2015	30	6	2040 to 2046	2045
42070	Ernie Road	West End of Road	Lower Round Lake Road	Local	Rural	Surface treated	Class 6	400	5.5	2200	2022-04-30	73	270	$ 108,000.00	2	3	2015	30	6	2040 to 2046	2045
44260	McFadden Road	Wilmer Road	Norway Road	Local	Rural	Surface treated	Class 4	1850	6.7	12395	2022-04-30	74	270	$ 499,500.00	2	3	2015	30	6	2040 to 2046	2045
40375	Bear Creek Road	Battersea Road	East End of Road	Local	Rural	Surface treated	Class 4	2700	5.8	15660	2022-04-30	75	270	$ 729,000.00	2	3	2015	30	6	2040 to 2046	2045
41755	Davidson Road	Perth Road 10	Holmes Road	Local	Rural	Surface treated	Class 4	500	6	3000	2022-04-30	75	270	$ 135,000.00	2	3	2015	30	6	2040 to 2046	2045
43165	Holmes Road	Perth Road 10	Lakefield Drive	Local	Rural	Surface treated	Class 4	1400	6.3	8820	2022-04-30	75	270	$ 378,000.00	2	3	2015	30	6	2040 to 2046	2045
46525	Wellington Street	Milburn Road	East End of Road	Local	Rural	Surface treated	Class 4	1700	6.5	11050	2022-04-30	75	270	$ 459,000.00	2	3	2015	30	6	2040 to 2046	2045
43255	Ida Hill Road	Sunbury Road	Milburn Road	Local	Rural	Surface treated	Class 4	1900	6.8	12920	2022-04-30	77	270	$ 513,000.00	2	3	2015	30	6	2040 to 2046	2045
46435	Washburn Road	Factory Road	1.00km East of Factory R	Local	Rural	Surface treated	Class 4	1000	6.3	6300	2022-04-30	77	270	$ 270,000.00	2	3	2015	30	6	2040 to 2046	2045
42355	Freeman Road	Bedford Road	Sills Bay Road	Local	Rural	Surface treated	Class 4	800	6.2	4960	2022-04-30	78	270	$ 216,000.00	2	3	2015	30	6	2040 to 2046	2045
43150	Holmes Road	Old Boy Road	Perth Road 10	Local	Rural	Surface treated	Class 4	1200	6.4	7680	2022-04-30	79	270	$ 324,000.00	2	3	2015	30	6	2040 to 2046	2045
46345	Vienna Crescent	Sumac Road	North End of Road	Local	Rural	Surface treated	Class 4	350	6.4	2240	2022-04-30	79	270	$ 94,500.00	2	3	2015	30	6	2040 to 2046	2045
41260	Charlie Green Road	Little Long Lake Road	Norway Road	Local	Rural	Surface treated	Class 4	2200	6	13200	2022-04-30	80	270	$ 594,000.00	2	3	2015	30	6	2040 to 2046	2045
43390	Keeley Road	Park Valley Road	Rutledge Road	Local	Rural	Surface treated	Class 4	2200	6.4	14080	2022-04-30	80	270	$ 594,000.00	2	3	2015	30	6	2040 to 2046	2045
42685	Greenfield Road	Perth Road 10	0.77km East of Perth Ro	Local	Rural	Surface treated	Class 4	770	6.5	5005	2022-04-30	81	270	$ 207,900.00	2	3	2015	30	6	2040 to 2046	2045
45820	Sills Bay Road	Botting Road	North End of Road	Local	Rural	Surface treated	Class 4	1700	6.2	10540	2022-04-30	81	270	$ 459,000.00	2	3	2015	30	6	2040 to 2046	2045
41365	Clearwater Road	Bedford Road	Botting Road	Local	Rural	Surface treated	Class 5	500	5.1	2550	2022-04-30	81	270	$ 135,000.00	2	3	2015	30	6	2040 to 2046	2045
40489	Bob's Lake Road	Green Bay Road	Bradshaw Road	Local	Rural	Surface treated	Class 4	4200	5	21000	2022-04-30	82	270	$ 1,134,000.00	2	3	2015	30	6	2040 to 2046	2045
45880	Snider Road	2.00km South of Arena Bo	Road 38	Local	Rural	Surface treated	Class 4	3000	6.2	18600	2022-04-30	82	270	$ 810,000.00	2	3	2015	30	6	2040 to 2046	2045
46075	Sumac Road	Sydenham Road	East End of Road	Local	Rural	Surface treated	Class 4	1150	6.9	7935	2022-04-30	82	270	$ 310,500.00	2	3	2015	30	6	2040 to 2046	2045
45250	Railton Road	0.55km East of Stage Coa	Sydenham Road	Local	Rural	Surface treated	Class 4	1200	6.7	8040	2022-04-30	83	270	$ 324,000.00	2	3	2015	30	6	2040 to 2046	2045
44685	Norway Road	Charlie Green Road	McFadden Road	Local	Rural	Surface treated	Class 4	350	5.2	1820	2022-04-30	84	270	$ 94,500.00	2	3	2015	30	6	2040 to 2046	2045
45865	Snider Road	Arena Boundary Road	2.00km South of Arena B	Local	Rural	Surface treated	Class 4	2000	6.2	12400	2022-04-30	84	270	$ 540,000.00	2	3	2015	30	6	2040 to 2046	2045
42880	Hinchinbrooke Road	0.29km North of Trousda	0.99km North of Trousda	Local	Rural	Surface treated	Class 5	700	6.7	4690	2022-04-30	84	270	$ 189,000.00	2	3	2015	30	6	2040 to 2046	2045
45235	Railton Road	Stage Coach Road	0.55km East of Stage Co	Collector	Rural	Surface treated	Class 4	550	6.4	3520	2022-04-30	92	375	$ 206,250.00	1	4	2015	30	4	2040 to 2046	2045
43480	Kingsmere Lane	Railton Road	North End of Road	Local	Rural	Surface treated	Class 5	700	6.1	4270	2022-04-30	87	270	$ 189,000.00	1	3	2015	30	3	2047 to 2052	2045
41635	Daley Road	Railton Road	0.60km North of Railton	Local	Rural	Surface treated	Class 4	600	6	3600	2022-04-30	90	270	$ 162,000.00	1	3	2015	30	3	2047 to 2052	2045
46765	Wurtz Crescent	Vienna Crescent	0.05km North of Vienna	Local	Rural	Surface treated	Class 6	50	7.3	365	2022-04-30	92	270	$ 13,500.00	1	3	2015	30	3	2047 to 2052	2045
41650	Daley Road	0.60km North of Railton R	North End of Road	Local	Rural	Surface treated	Class 4	500	6	3000	2022-04-30	93	270	$ 135,000.00	1	3	2015	30	3	2047 to 2052	2045
50875	Battersea Road	4.5km North of Burnt Hill	East End of Road	Arterial	Rural	Surface treated	Class 5	6100	6.7	40870	2022-04-30	62	450	$ 2,745,000.00	3	5	2016	30	15	2028 to 2032	2046
51460	Bedford Road	Busch Lane	Salmon Lake Road	Arterial	Rural	Surface treated	Class 4	2400	6.7	16080	2022-04-30	75	450	$ 1,080,000.00	2	5	2016	30	10	2028 to 2032	2046
51575	Bedford Road	Salmon Lake Road	1.0km North of Salmon L	Arterial	Rural	Surface treated	Class 4	1000	6.4	6400	2022-04-30	77	450	$ 450,000.00	2	5	2016	30	10	2028 to 2032	2046
52725	Desert Lake Road	0.15km East of High Falls	Bauder Drive	Arterial	Rural	Surface treated	Class 5	1550	6.7	10385	2022-04-30	79	450	$ 697,500.00	2	5	2016	30	10	2028 to 2032	2046
52840	Desert Lake Road	Bauder Drive	Deyos Road	Arterial	Rural	Surface treated	Class 5	2200	6.7	14740	2022-04-30	83	450	$ 990,000.00	2	5	2016	30	10	2028 to 2032	2046
41905	Devil Lake Road	Centreville Road	Westport Road	Local	Rural	Surface treated	Class 6	1650	6.7	11055	2022-04-30	65	270	$ 445,500.00	3	3	2016	30	9	2033 to 2039	2046
43300	Jamieson Road	Road 38	1.30km East of Road 38	Local	Rural	Surface treated	Class 4	1300	5.6	7280	2022-04-30	66	270	$ 351,000.00	3	3	2016	30	9	2033 to 2039	2046
42940	Hitchcock Drive	West End of Road	Sunbury Road	Local	Rural	Surface treated	Class 4	850	6.1	5185	2022-04-30	68	270	$ 229,500.00	3	3	2016	30	9	2033 to 2039	2046
41230	Centreville Road	Devil Lake Road	0.40km East of Devil Lak	Local	Rural	Surface treated	Class 4	400	6	2400	2022-04-30	70	270	$ 108,000.00	2	3	2016	30	6	2040 to 2046	2046
40810	Burnt Hills Road	Battersea Road	1.2km East of Battersea	Local	Rural	Surface treated	Class 4	1200	5.8	6960	2022-04-30	71	270	$ 324,000.00	2	3	2016	30	6	2040 to 2046	2046
40870	Burnt Hills Road	0.61km West of Carrying	0.49km East of Rideau R	Local	Rural	Surface treated	Class 4	1700	5.3	9010	2022-04-30	71	270	$ 459,000.00	2	3	2016	30	6	2040 to 2046	2046
41125	Canoe Lake Road	Westport Road	3.0km South of Westpor	Local	Rural	Surface treated	Class 4	3000	6	18000	2022-04-30	71	270	$ 810,000.00	2	3	2016	30	6	2040 to 2046	2046
46060	Stone Point Road	North End of Road	Hitchcock Drive	Local	Rural	Surface treated	Class 6	1150	6.7	7705	2022-04-30	75	270	$ 310,500.00	2	3	2016	30	6	2040 to 2046	2046
42325	Freeman Road	1.05km West of Gould La	Gould Lake Road	Local	Rural	Surface treated	Class 5	1150	6.2	7130	2022-04-30	76	270	$ 310,500.00	2	3	2016	30	6	2040 to 2046	2046
40825	Burnt Hills Road	1.2km East of Battersea R	1.4km East of Battersea	Local	Rural	Surface treated	Class 4	200	6.5	1300	2022-04-30	79	270	$ 54,000.00	2	3	2016	30	6	2040 to 2046	2046
40855	Burnt Hills Road	5.0km East of Battersea R	0.61km West of Carrying	Local	Rural	Surface treated	Class 4	1000	5.8	5800	2022-04-30	80	270	$ 270,000.00	2	3	2016	30	6	2040 to 2046	2046
41245	Centreville Road	0.40km East of Devil Lake	0.80km East of Devil Lak	Local	Rural	Surface treated	Class 4	400	6	2400	2022-04-30	81	270	$ 108,000.00	2	3	2016	30	6	2040 to 2046	2046
46555	White Lake Road	West End of Road	Buck Bay Road	Local	Rural	Surface treated	Class 4	1100	6.7	7370	2022-04-30	83	270	$ 297,000.00	2	3	2016	30	6	2040 to 2046	2046
44110	Maple Hill Way	South End of Road	Hitchcock Drive	Local	Rural	Surface treated	Class 6	300	6.5	1950	2022-04-30	83	270	$ 81,000.00	2	3	2016	30	6	2040 to 2046	2046
40360	Bauder Road	Desert Lake Road	East End of Road	Local	Rural	Surface treated	Class 4	1200	4.2	5040	2022-04-30	84	270	$ 324,000.00	2	3	2016	30	6	2040 to 2046	2046
40840	Burnt Hills Road	1.4km East of Battersea R	1.8km East of Battersea	Local	Rural	Surface treated	Class 4	400	6.2	2480	2022-04-30	85	270	$ 108,000.00	1	3	2016	30	3	2047 to 2052	2046
42145	First Lake Road	Bellrock Mill Street	0.70km North of Bellrock	Local	Rural	Surface treated	Class 4	700	5.2	3640	2022-04-30	86	270	$ 189,000.00	1	3	2016	30	3	2047 to 2052	2046
42475	German Road	Long Swamp Road	0.20km South of Long Sv	Local	Rural	Surface treated	Class 4	200	5.3	1060	2022-04-30	90	270	$ 54,000.00	1	3	1997	30	3	2047 to 2052	2047
45805	Short Street	Bank Street	North End of Road	Local	Rural	Surface treated	Class 5	50	4.7	235	2022-04-30	91	270	$ 13,500.00	1	3	1997	30	3	2047 to 2052	2047
42895	Hinchinbrooke Road	0.99km North of Trousda	Moore Farm Lane	Local	Rural	Surface treated	Class 5	1400	6.4	8960	2022-04-30	93	270	$ 378,000.00	1	3	2021	30	3	2047 to 2052	2047
57785	Westport Road	Buck Bay Road	New Road	Arterial	Rural	Surface treated	Class 4	7700	6.6	50820	2022-04-30	62	450	$ 3,465,000.00	3	5	2018	30	15	2028 to 2032	2048
44800	Opinicon Road	Perth Road 10	4.40km East of Perth Ro	Local	Rural	Surface treated	Class 5	4400	6.5	28600	2022-04-30	73	270	$ 1,188,000.00	2	3	2018	30	6	2040 to 2046	2048
44815	Opinicon Road	4.40km East of Perth Roa	7.70km East of Perth Ro	Local	Rural	Surface treated	Class 5	3300	6.5	21450	2022-04-30	76	270	$ 891,000.00	2	3	2018	30	6	2040 to 2046	2048
44830	Opinicon Road	7.70km East of Perth Roa	Post Office Gate Lane	Local	Rural	Surface treated	Class 5	3950	6.5	25675	2022-04-30	76	270	$ 1,066,500.00	2	3	2018	30	6	2040 to 2046	2048
44860	Opinicon Road	1.70km East of Post Offic	4.65km East of Post Offi	Local	Rural	Surface treated	Class 5	2950	6.5	19175	2022-04-30	80	270	$ 796,500.00	2	3	2018	30	6	2040 to 2046	2048
44845	Opinicon Road	Post Office Gate Lane	1.70km East of Post Offi	Local	Rural	Surface treated	Class 5	1700	6.5	11050	2022-04-30	83	270	$ 459,000.00	2	3	2018	30	6	2040 to 2046	2048
40720	Buck Bay Road	0.3km North of Westport	White Lake Road	Local	Rural	Surface treated	Class 4	1700	5.7	9690	2022-04-30	88	270	$ 459,000.00	1	3	2018	30	3	2047 to 2052	2048
53185	Desert Lake Road	1.90km West of Bedford I	1.70km West of Bedford	Arterial	Rural	Surface treated	Class 5	200	6.2	1240	2022-04-30	80	450	$ 90,000.00	2	5	2019	30	10	2028 to 2032	2049
45580	Round Lake Road	3.50km East of Latimer Rd	4.10km East of Latimer R	Local	Rural	Surface treated	Class 4	600	6.3	3780	2022-04-30	81	270	$ 162,000.00	2	3	2019	30	6	2040 to 2046	2049
40075	Amey Road	West End of Road	Murvale Road	Local	Rural	Surface treated	Class 4	950	4.2	3990	2022-04-30	84	270	$ 256,500.00	2	3	2019	30	6	2040 to 2046	2049
45745	Scanlan Court	Scanlan Road	North End of Road	Local	Rural	Surface treated	Class 6	200	6.1	1220	2022-04-30	85	270	$ 54,000.00	1	3	2019	30	3	2047 to 2052	2049
41155	Carrying Place Road	South End of Road	1.0km South of Burnt Hi	Local	Rural	Surface treated	Class 4	4800	6	28800	2022-04-30	87	270	$ 1,296,000.00	1	3	2019	30	3	2047 to 2052	2049
46480	Watson Road	Petworth Road	Boyce Road	Local	Rural	Surface treated	Class 4	1400	6.4	8960	2022-04-30	88	270	$ 378,000.00	1	3	2019	30	3	2047 to 2052	2049
45760	Scanlan Road	West End of Road	0.50km West of Murvale	Local	Rural	Surface treated	Class 5	950	6.5	6175	2022-04-30	90	270	$ 256,500.00	1	3	2019	30	3	2047 to 2052	2049
45775	Scanlan Road	0.50km West of Murvale	Murvale Road	Local	Rural	Surface treated	Class 5	500	6	3000	2022-04-30	90	270	$ 135,000.00	1	3	2019	30	3	2047 to 2052	2049
45565	Round Lake Road	2.20km East of Latimer Rd	3.50km East of Latimer R	Local	Rural	Surface treated	Class 4	1300	6.1	7930	2022-04-30	93	270	$ 351,000.00	1	3	2019	30	3	2047 to 2052	2049

ID	Street	From	To	Classification	Roadside Environment	Surface Type	Maintenace Class	Length (m)	Width (m)	Pavement Area (m2)	Last Inspection Date	Inspection OCI	Cost $/m assumed	Replacement Value Estimate	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Install / Last Reconstruct Date	Useful Life	Risk	Timing of First Replacement (based on Risk)	Timing of First Replacement (based on Risk)
44650	North Shore Road	North Shore Crescent	Hewlett Packard Road	Local	Rural	Surface treated	Class 4	5800	6.3	36540	2022-04-30	67	270	$ 1,566,000.00	3	3	2020	30	9	2033 to 2039	2050
40735	Buck Bay Road	White Lake Road	2.6km North of White La	Local	Rural	Surface treated	Class 4	2650	6.7	17755	2022-04-30	73	270	$ 715,500.00	2	3	2020	30	6	2040 to 2046	2050
46030	Steele Road	South End of Road	Bradshaw Road	Local	Rural	Surface treated	Class 4	2200	5	11000	2022-04-30	80	270	$ 594,000.00	2	3	2020	30	6	2040 to 2046	2050
40750	Buck Bay Road	2.6km North of White Lak	Bob's Lake Road	Local	Rural	Surface treated	Class 4	3800	5.5	20900	2022-04-30	87	270	$ 1,026,000.00	1	3	2020	30	3	2047 to 2052	2050
41935	Deyos Road	Morey Lane	James Wilson Road	Local	Rural	Surface treated	Class 4	2500	4.5	11250	2022-04-30	73	270	$ 675,000.00	2	3	2021	30	6	2040 to 2046	2051
40765	Bunker Hill Road	Westport Road	James Wilson Road	Local	Rural	Surface treated	Class 4	2600	5	13000	2022-04-30	76	270	$ 702,000.00	2	3	2021	30	6	2040 to 2046	2051
41950	Deyos Road	Desert Lake Road	Morey Lane	Local	Rural	Surface treated	Class 4	1100	4	4400	2022-04-30	87	270	$ 297,000.00	1	3	2021	30	3	2047 to 2052	2051
41170	Carrying Place Road	1.0km South of Burnt Hills	Burnt Hills Road	Local	Rural	Surface treated	Class 4	1050	6	6300	2022-04-30	90	270	$ 283,500.00	1	3	2021	30	3	2047 to 2052	2051
42910	Hinchinbrooke Road	Moore Farm Lane	Desert Lake Road	Local	Rural	Surface treated	Class 5	4400	6.2	27280	2022-04-30	94	270	$ 1,188,000.00	1	3	2021	30	3	2047 to 2052	2051
58245	Westport Road	0.76km West of Bresee R	Bresee Road	Arterial	Rural	Surface treated	Class 4	1200	6.6	7920	2022-04-30	100	450	$ 540,000.00	1	5	2022	30	5	2040 to 2046	2052
58360	Westport Road	Bresee Road	Concession 12	Arterial	Rural	Surface treated	Class 4	1400	6.6	9240	2022-04-30	100	450	$ 630,000.00	1	5	2022	30	5	2040 to 2046	2052
58475	Westport Road	Concession 12	Devil Lake Road	Arterial	Rural	Surface treated	Class 4	1350	6.6	8910	2022-04-30	100	450	$ 607,500.00	1	5	2022	30	5	2040 to 2046	2052
44020	Lower Round Lake Road	Round Lake Road	Ernie Road	Local	Rural	Surface treated	Class 4	2100	6.6	13860	2022-04-30	100	270	$ 567,000.00	1	3	2022	30	3	2047 to 2052	2052
44035	Lower Round Lake Road	Ernie Road	East End of Road	Local	Rural	Surface treated	Class 4	1450	6.2	8990	2022-04-30	100	270	$ 391,500.00	1	3	2022	30	3	2047 to 2052	2052
														$ 266,467,700.00							

Bridges & Culverts (OSIM)

Site No.	Name	Bridge/ Culvert	Type	Road Class	Posted Speed	Year Constructed/ Rehabilitated	AGE (2022)	# of Spans	Total Length (m)	Width / Span (m)	Road Width (m)	Existing Surface Area (m2)	Historical Cost ($)	Replacement Cost ($000)	BCI	Health & Safety Risk	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement- Based on Risk	Timing of First Replacement (based on life cycle)	Timing of First Replacement (based on risk)	Timing of Second Replacement (life cycle)
63280	Fish Creek Bridge (B30)	Bridge	T-Beam	Local	80	1927	95	1	6.7	5.2	4.4	35	7,357	1,550,000	8.1		0%	5	4	1927	75	20	2024 to 2027		2023	2098
63360	Shales Road Culvert (B41)	Bridge	Frame, Inclined Legs	Local	80	1955	67	1	3.0	5.5	4.7	17	7,563	450,000	31.9		11%	5	4	1955	75	20	2024 to 2027		2025	2100
63290	Eagle Creek Culvert (B31)	Bridge	Rigid Frame, Vertical Legs	Local	80	1945	77	1	3.9	5.4	4.6	21	11,080	982,000	38.5		0%	4	4	1945	75	16	2024 to 2027		2025	2100
63460	Buck Bay Rd Bridge (N of White Lake) (B52)	Bridge	Rigid Frame, Vertical Legs	Local	80	2008	14	1	3.8	4.5	5.0	17	38,840	850,000	52.4		81%	3	4	2008	75	12	2028 to 2032		2030	2105
63350	Long Swamp Rd Bridge Closed (B39)	Bridge	I-beam or Girders	Local	80	1940	82	1	11.9	4.6	4.0	55	16,655	665,000	0.1		0%	5	4	1940	75	20	2024 to 2027		2031	2106
63370	Railton Road Bridge (B42)	Bridge	Rigid Frame, Vertical Legs	Local	50	1928	94	1	6.1	5.4	4.9	30	7,370	850,000	28.7		0%	5	4	1928	75	20	2024 to 2027		2033	2108
63210	Bedford Mills Road Culvert (B23)	Bridge	Rigid Frame, Vertical Legs	Local	80	1940	82	1	3.6	8.0	4.5	29	16,857	350,000	46.2		0%	3	4	1940	75	12	2028 to 2032		2035	2110
63270	Buck Bay Bridge (Green Bay Rd) (B29)	Bridge	Rigid Frame, Vertical Legs	Local	80	1965	57	1	6.7	9.1	4.5	61	21,164	645,000	70.2		24%	2	4	1965	75	8	based on life cycle	2076	2040	2115
63080	Sydenham Lake Bridge and Dam (B08)	Bridge	Rectangle Culvert	Collector	50	1978	44	2	8.0	12.2	6.8	98	157,069	1,115,000	71.2		41%	2	4	1978	75	8	based on life cycle	2076	2053	
63010	Battersea Bridge (B01)	Bridge	Rigid Frame, Vertical Legs	Arterial	50	1979	43	1	8.2	11.2	8.6	92	148,430	1,050,000	72.2		43%	2	5	1979	75	10	2028 to 2032		2054	
63330	First Lake Road Bridge (B37)	Bridge	Rigid Frame, Vertical Legs	Local	80	1995	27	1	8.3	10.0	6.4	83	279,066	950,000	74.6		64%	2	4	1995	75	8	based on life cycle	2070	2070	
63190	Bedford Mills Bridge (B21)	Bridge	T-Beam	Arterial	80	1997	25	1	19.1	9.9	8.8	189	117,766	2,125,000	67.5		67%	2	5	1997	75	10	2028 to 2032		2072	
63440	Opinicon Lake Bridge (B50)	Bridge	I-beam or Girders	Local	80	2001	21	1	12.0	5.7	5.3	68	8,578	850,000	28.4		72%	5	4	2001	75	20	2024 to 2027		2076	
63200	Sunbury Road Canal Overpass (B22) 50/50	Bridge	I-beam or Girders	Arterial	80	2005	17	3	74.7	11.7	9.0	874	1,132,096	5,000,000	73.7		77%	2	5	2005	75	10	2028 to 2032		2080	
63400	Mitchell Creek Bridge (B45)	Bridge	Earth Filled Arch	Local	10	2007	15	1	9.8	5.1	5.1	50	526,798	900,000	74.3		80%	2	4	2007	75	8	based on life cycle	2082	2082	
63070	Rutledge Road Bridge (B07)	Bridge	Rigid Frame, Vertical Legs	Collector	50	2008	14	1	6.3	14.2	13.3	89	251,377	980,000	65.0		81%	2	4	2008	75	8	based on life cycle	2083	2083	
63300	12th Concession Bridge (B32)	Bridge	Rigid Frame, Vertical Legs	Local	80	2009	13	1	4.0	6.4	5.6	26	115,000	350,000	75.0		83%	1	4	2009	75	4	based on life cycle	2084	2084	
63020	Loughborough Lake Bridge (B02)	Bridge	I-beam or Girders	Arterial	80	2010	12	3	43.6	12.5	9.9	545	1,500,000	6,280,000	74.6		84%	2	5	2010	75	10	2028 to 2032		2085	
63550	Maynard Structure (B48)	Bridge	I-beam or Girders	Local	80	2012	10	1	24.6	7.5	7.5	185	354,213	2,550,000	69.0		87%	2	4	2012	75	8	based on life cycle	2087	2087	
63380	Church Street Culvert (B43)	Bridge	Rigid Frame, Vertical Legs	Local	50	2013	9	1	6.0	8.0	7.6	48	11,130	275,000	29.4		88%	5	4	2013	75	20	2024 to 2027		2088	
63561	Petworth Bridge (B40)	Bridge	Through Truss	Arterial	80	2013	9	1	23.3	4.2	4.4	98	21,482	1,225,000	73.2		88%	2	5	2013	75	10	2028 to 2032		2088	
63540	Road 38 (Hardwood Creek Verona) Bridge	Bridge	I-beam or Girders	Arterial	60	2013	9	1	12.2	15.4	13.1	188	103,487	2,145,000	68.3		88%	2	5	2013	75	10	2028 to 2032		2088	
63160	High Falls Bridge Desert Lk Rd (B18)	Bridge	Rectangular Culvert	Collector	80	2014	8	2	10.5	9.0	5.2	95	876,000	1,100,000	75.0		89%	1	4	2014	75	4	based on life cycle	2089	2089	
63250	Buck Bay Road Bridge, N of Wesport Rd (B27)	Bridge	Rigid Frame, Vertical Legs	Local	80	2022	0	1	7.1	7.2	7.0	51	706,171	707,000	100.0		100%	1	4	2022	75	4	based on life cycle	2097	2097	
														$ 33,944,000												
63060	Burego Lane Culvert (B06)	Culvert	Round Culvert (Twin)	Local	80	1993	29	2	9.3	3.8	3.8	35	69678	78,000	0.3		42%	5	3	1993	50	15	2028 to 2032		2023	2073
63120	Bracken Culvert (B13)	Culvert	Arch Culvert	Arterial	80	1966	56	1	21.0	4.4	6.9	92	81215	527,200	38.1		25%	4	4	1966	75	16	2024 to 2027		2024	2099
63110	Murvale Creek Culvert (B12)	Culvert	Arch Culvert	Arterial	80	1993	29	1	29.6	3.7	7.1	108	139100	796,860	60.3		42%	2	4	1993	50	8	based on life cycle	2053	2025	2075
63130	Culvert Under Road 38 (B14)	Culvert	Rectangular Culvert	Arterial	80	1965	57	1	22.2	4.2	7.1	93	71606	480,000	68.8		24%	2	4	1965	75	8	based on life cycle	2075	2025	2100
63040	Buck Lake Culvert (B04)	Culvert	Round Culvert	Arterial	80	1970	52	1	17.2	3.2	7.0	55	43572	1,035,000	53.1		0%	3	4	1970	50	12	2028 to 2032		2026	2076
63510	Clair Road Culvert (B36)	Culvert	Rigid Frame, Vertical Legs	Local	80	1965	57	1	3.5	4.8	4.1	17	11195	230,000	25.5		0%	5	3	1965	50	15	2028 to 2032		2027	2077
63180	Devil Lake Culvert (B20)	Culvert	Round Culvert	Collector	60	1965	57	1	24.8	3.6	7.0	89	63754	1,092,500	54.7		0%	3	3	1965	50	9	based on life cycle	2050	2028	2078
63170	Road 38 Bridge (B19)	Culvert	Rigid Frame, Vertical Legs	Arterial	80	1996	26	1	28.1	3.7	11.0	104	60609	862,500	69.7		48%	2	4	1996	50	8	based on life cycle	2058	2029	2079
63340	Craig Creek Culvert (B38)	Culvert	Arch Culvert	Local	80	1998	24	1	22.0	4.7	5.3	103	191194	805,000	65.8		52%	2	3	1998	50	6	based on life cycle	2048	2031	2081
64003	Anderson Rd Culvert (03-CULV)	Culvert	Rigid Frame, Vertical Legs	Local	80	1962	60	1	3.0	6.0	5.4	18	11661	180,000	69.1		0%	2	3	1962	50	6	based on life cycle	2058	2034	2084
63410	Milburn Creek Culvert (B46)	Culvert	Arch Culvert	Local	80	1980	42	1	19.5	5.5	6.5	107	236337	435,000	75.0		16%	1	3	1980	50	3	based on life cycle	2061	2035	2085
63310	Colebrook Road Culvert (B33)	Culvert	Arch Culvert	Local	50	1980	42	1	19.9	3.7	7.3	74	94579	350,000	63.8		16%	2	3	1980	50	6	based on life cycle	2055	2045	2095
63320	Watson Road Culvert (B34)	Culvert	Arch Culvert	Local	80	1981	41	1	11.2	3.6	6.0	40	99885	180,000	63.8		18%	2	3	1981	50	6	based on life cycle	2055	2045	2095
63050	Sydenham Road Culvert Bridge (B05)	Culvert	Rigid Frame, Vertical Legs	Local	80	1980	42	1	22.2	4.3	4.3	95	192631	522,004	73.8		44%	2	3	1980	75	6	based on life cycle	2078	2055	
63140	Depot Creek Culvert (B16)	Culvert	Rectangular Culvert	Collector	80	1980	42	1	27.5	6.1	10.6	168	295812	950,000	72.1		44%	2	3	1980	75	6	based on life cycle	2077	2055	
63150	Bellrock Rd. Culvert (B17)	Culvert	Rectangular Culvert	Collector	80	1980	42	1	20.3	3.0	8.0	61	107360	440,000	74.1		44%	2	3	1980	75	6	based on life cycle	2079	2055	
63220	Massassauga Road Culvert (B24)	Culvert	Rigid Frame, Vertical Legs	Local	80	2015	7	1	12.0	4.5	4.5	54	239000	160,000	92.1		86%	1	3	2015	50	3	based on life cycle	2065	2065	2115
63390	Salmon Lake Rd Culvert / Otter Lake (B44)	Culvert	Round Culvert	Collector	80	2016	6	1	25.2	3.6	9.0	91	350000	525,000	88.7		88%	1	3	2016	50	3	based on life cycle	2066	2066	2116
63090	Little Long Lake Culvert (B10)	Culvert	Rigid Frame, Vertical Legs	Local	60	1992	30	1	4.8	15.4	7.5	74	44904	365,650	41.3		60%	4	3	1992	75	12	2028 to 2032		2067	
	Desert Lake Causeway (14-CULV)	Culvert	Arch Culverts (3)	Collector	60	2019	3	3	18.0	3.6	6.0	65	0	635,000	98.9		94%	1	3	2019	50	3	based on life cycle	2069	2069	2119
63560	Petworth Road Culvert (B35)	Culvert	Round Culvert (Twin)	Local	80	2020	2	2	22.2	3.6	6.5	80	0	450,000	98.9		96%	1	3	2020	50	3	based on life cycle	2070	2070	2120
														$ 11,099,714												

$ 45,043,714

Water Treatment and Storage Facilities

Type	Asset Description	Construction Year	Useful Life	Historical Construction Cost	2022 Replacement Cost*	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life (yrs)	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement (based on life cycle)	Timing of First Replacement	Timing of Second Replacement (Life Cycle)	Timing of Third Replacement (Life Cycle)	Tming of Fourth Replacement (Life Cycle)
WTP	Raw Water Intake (400mm)	2005	100	$227,000.00	$ 375,196.41	83%	1	5	2005	100	5	based on life cycle	2105	2105			
Storage	Elevated Water Storage Tower	2005	100	$996,000.00	$ 1,646,236.25	83%	1	4	2005	100	4	based on life cycle	2105	2105			
WTP	Treatment Plant	2005	50	$2,971,176.00	$ 4,910,901.22	66%	2	5	2005	50	10	2028 to 2032		2055	2105		
WTP	Plant Upgrades (UV & GAC contactors)	2010	25	$1,009,881.00	$ 1,439,848.83	52%	3	5	2010	25	15	2028 to 2032		2035	2060	2085	2110
TOTAL				$5,204,057.00	$8,372,182.71												

Water Main

Asset ID	Street Name	Intersection 1	Intersection 2	DIAMETER (mm)	LENGTH (m)	QUANTITY	UNIT PRICE ($)	CONST YEAR	USEFUL LIFE (YRS)	HISTORIC COST	2022 Replacement Cost (inflation accounted)	*Replacement Cost ($/unit)	2022 Replacement Cost	REMAINING LIFE (YRS)	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement-Based on life cycle	Timing of First Replacement
Water Main																							
95001	Point Rd	Wheatley	Water Plant	250	279.1		200	2005	90	$ 55,816.00	$ 92,255.34	491.73	$ 137,231.21	73	81%	1	5	2005	90	5	based on life cycle	2095	2095
95002	Wheatley St	George	Point	250	17.2		200	2005	90	$ 3,444.00	$ 5,692.41	491.73	$ 8,467.54	73	81%	1	5	2005	90	5	based on life cycle	2095	2095
95003	Wheatley St	Cross	Point	250	88.7		200	2005	90	$ 17,736.00	$ 29,314.91	491.73	$ 43,606.36	73	81%	1	5	2005	90	5	based on life cycle	2095	2095
95004	Wheatley St	Rutledge	Cross	250	265.0		200	2005	90	$ 53,002.00	$ 87,604.23	491.73	$ 130,312.61	73	81%	1	5	2005	90	5	based on life cycle	2095	2095
95005	Wheatley St	Rutledge	Cross	250	14.3		200	2005	90	$ 2,868.00	$ 4,740.37	491.73	$ 7,051.37	73	81%	1	5	2005	90	5	based on life cycle	2095	2095
95006	Rutledge Rd	Mill	Wheatley	250	154.6		200	2005	90	$ 30,914.00	$ 51,096.13	491.73	$ 76,006.27	73	81%	1	5	2005	90	5	based on life cycle	2095	2095
95007	Rutledge Rd	Mill	Wheatley	250	8.6		200	2005	90	$ 1,724.00	$ 2,849.51	491.73	$ 4,238.69	73	81%	1	5	2005	90	5	based on life cycle	2095	2095
95008	Stage Coach Rd	Rutledge	Water Tower	250	438.2		200	2005	90	$ 87,648.00	$ 144,868.79	491.73	$ 215,494.51	73	81%	1	5	2005	90	5	based on life cycle	2095	2095
95009	Water Tower Site	Stage Coach	Water Tower	250	5.1		200	2005	90	$ 1,018.00	$ 1,682.60	491.73	$ 2,502.89	73	81%	1	5	2005	90	5	based on life cycle	2095	2095
95010	Water Tower Site	Stage Coach	Water Tower	250	50.5		200	2005	90	$ 10,108.00	$ 16,706.98	491.73	$ 24,851.89	73	81%	1	5	2005	90	5	based on life cycle	2095	2095
95011	Stage Coach Rd	Water Tower Site	Campbell	200	124.0		190	2005	90	$ 23,561.90	$ 38,944.23	437.09	$ 54,203.63	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95012	Stage Coach Rd	Water Tower Site	Campbell	200	4.6		190	2005	90	$ 879.70	$ 1,454.01	437.09	$ 2,023.73	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95013	Morgan Dr	Rutledge	South End	200	199.9		190	2011	90	$ 37,979.10	$ 52,571.96	437.09	$ 87,370.08	79	88%	1	4	2011	90	4	based on life cycle	2101	2101
95014	Morgan Dr	Rutledge	South End	200	223.9		190	2011	90	$ 42,531.50	$ 58,873.54	437.09	$ 97,842.78	79	88%	1	4	2011	90	4	based on life cycle	2101	2101
95015	Morgan Dr	Rutledge	South End	200	2.0		190	2011	90	$ 378.10	$ 523.38	437.09	$ 869.81	79	88%	1	4	2011	90	4	based on life cycle	2101	2101
95016	Rutledge Rd	William	West End	200	226.6		190	2005	90	$ 43,055.90	$ 71,164.84	437.09	$ 99,049.15	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95017	Rutledge Rd	William	Morgan	200	64.6		190	2005	90	$ 12,272.10	$ 20,283.91	437.09	$ 28,231.69	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95018	Rutledge Rd	William	Morgan	200	3.5		190	2005	90	$ 666.90	$ 1,102.28	437.09	$ 1,534.19	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95019	Rutledge Rd	Morgan	Stage Coach	200	225.7		190	2005	90	$ 42,883.00	$ 70,879.07	437.09	$ 98,651.39	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95020	Rutledge Rd	Morgan	Stage Coach	200	7.4		190	2005	90	$ 1,396.50	$ 2,308.20	437.09	$ 3,212.62	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95021	William St	Rutledge	Church	200	11.7		190	2005	90	$ 2,221.10	$ 3,671.14	437.09	$ 5,109.59	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95022	William St	Rutledge	Church	200	40.6		190	2005	90	$ 7,721.60	$ 12,762.63	437.09	$ 17,763.37	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95023	William St	Rutledge	Church	200	12.5		190	2005	90	$ 2,380.70	$ 3,934.93	437.09	$ 5,476.75	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95024	Church St	William	Walker	200	360.5		190	2005	90	$ 68,489.30	$ 113,202.38	437.09	$ 157,558.12	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95025	Church St	William	Walker	200	12.2		190	2005	90	$ 2,316.10	$ 3,828.16	437.09	$ 5,328.14	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95026	Walker Rd	Rock Quarry Ln	Church	200	343.1		190	2005	90	$ 65,181.40	$ 107,734.92	437.09	$ 149,948.37	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95027	Portland Ave	Church	George	200	870.6		190	2005	90	$ 165,415.90	$ 273,407.28	437.09	$ 380,535.62	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95028	Portland Ave	Church	George	200	11.7		190	2005	90	$ 2,217.30	$ 3,664.86	437.09	$ 5,100.85	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95029	Portland Ave	Church	George	200	64.8		190	2005	90	$ 12,317.70	$ 20,359.28	437.09	$ 28,336.60	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95030	George St	Church	Brewery	200	25.4		190	2005	90	$ 4,827.90	$ 7,979.78	437.09	$ 11,106.48	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95031	George St	Brewery	Amelia	200	241.8		190	2005	90	$ 45,942.00	$ 75,935.13	437.09	$ 105,688.56	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95032	George St	Amelia	Mill	200	138.8		190	2005	90	$ 26,373.90	$ 43,592.04	437.09	$ 60,672.57	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95033	George St	Amelia	Mill	200	28.3		190	2005	90	$ 5,367.50	$ 8,871.66	437.09	$ 12,347.82	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95034	George St	Mill	Wheatley	200	136.0		190	2005	90	$ 25,830.50	$ 42,693.88	437.09	$ 59,422.49	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95035	George St	Wheatley	Portland	200	159.4		190	2005	90	$ 30,276.50	$ 50,042.44	437.09	$ 69,650.42	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95036	George St	Wheatley	Portland	200	36.9		190	2005	90	$ 7,016.70	$ 11,597.54	437.09	$ 16,141.76	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95037	George St	Wheatley	Portland	200	68.3		190	2005	90	$ 12,971.30	$ 21,439.58	437.09	$ 29,840.19	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95038	Bedford Rd	Portland	East End	200	447.5		190	2005	90	$ 85,023.10	$ 140,530.23	437.09	$ 195,593.76	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95039	Brewery Street	George	Amelia	200	161.8		190	2005	90	$ 30,749.60	$ 50,824.40	437.09	$ 70,738.78	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95040	Brewery Street	Amelia	Mill	200	94.5		190	2005	90	$ 17,956.90	$ 29,680.02	437.09	$ 41,309.45	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95041	Brewery Street	Amelia	Mill	200	8.1		190	2005	90	$ 1,539.00	$ 2,543.73	437.09	$ 3,540.44	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95045	Mill St	Rutledge	Brewery	200	14.8		190	2005	90	$ 2,817.70	$ 4,657.23	437.09	$ 6,482.06	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95046	Mill St	Rutledge	Brewery	200	92.9		190	2005	90	$ 17,647.20	$ 29,168.13	437.09	$ 40,596.99	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95047	Mill St	Brewery	Cross	200	165.4		190	2005	90	$ 31,427.90	$ 51,945.53	437.09	$ 72,299.19	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95048	Mill St	Cross	George	200	154.3		190	2005	90	$ 29,324.60	$ 48,469.10	437.09	$ 67,460.59	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95052	Rutledge Rd	Wheatley	Sailors Cove Ln	200	78.5		190	2005	90	$ 14,905.50	$ 24,636.52	437.09	$ 34,289.77	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95053	Rutledge Rd	Wheatley	Sailors Cove Ln	200	455.5		190	2005	90	$ 86,545.00	$ 143,045.70	437.09	$ 199,094.86	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95054	Wheatley St	Point	George	200	4.5		190	2005	90	$ 847.40	$ 1,400.62	437.09	$ 1,949.42	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95055	Wheatley St	Point	George	200	151.2		190	2005	90	$ 28,729.90	$ 47,486.15	437.09	$ 66,092.50	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95056	Wheatley St	Point	George	200	16.9		190	2005	90	$ 3,211.00	$ 5,307.29	437.09	$ 7,386.83	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95042	Amelia St	Brewery	George	150	8.0		180	2005	90	$ 1,441.80	$ 2,383.08	327.82	$ 2,625.82	73	81%	1	3	2005	90	3	based on life cycle	2095	2095
95043	Amelia St	Brewery	George	150	194.5		180	2005	90	$ 35,011.80	$ 57,869.17	327.82	$ 63,763.90	73	81%	1	3	2005	90	3	based on life cycle	2095	2095
95044	Amelia St	Brewery	George	150	5.4		180	2005	90	$ 979.20	$ 1,618.47	327.82	$ 1,783.33	73	81%	1	3	2005	90	3	based on life cycle	2095	2095
95049	Cross St	Mill	Wheatley	150	4.9		180	2005	90	$ 889.20	$ 1,469.71	327.82	$ 1,619.42	73	81%	1	3	2005	90	3	based on life cycle	2095	2095
95050	Cross St	Mill	Wheatley	150	124.1		180	2005	90	$ 22,339.80	$ 36,924.29	327.82	$ 40,685.50	73	81%	1	3	2005	90	3	based on life cycle	2095	2095
95051	Cross St	Mill	Wheatley	150	4.6		180	2005	90	$ 819.00	$ 1,353.68	327.82	$ 1,491.57	73	81%	1	3	2005	90	3	based on life cycle	2095	2095
Valves (Mainline Only)																							
97004	Rutledge	Stage-Coach	Rutledge	250		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4917.27	$ 4,917.27	33	66%	2	4	2005	50	8	based on life cycle	2055	2055
97030	Wheatley	Cross	Wheatley	250		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4917.27	$ 4,917.27	33	66%	2	4	2005	50	8	based on life cycle	2055	2055
97031	Wheatley	Rutledge	Wheatley	250		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4917.27	$ 4,917.27	33	66%	2	4	2005	50	8	based on life cycle	2055	2055
97032	Wheatley	Point	Wheatley	250		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4917.27	$ 4,917.27	33	66%	2	4	2005	50	8	based on life cycle	2055	2055
97036	Water Tower	Stage-Coach	Water Tower	250		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4917.27	$ 4,917.27	33	66%	2	4	2005	50	8	based on life cycle	2055	2055
97000	Rutledge	William	Rutledge	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97001	Rutledge	Morgan	Rutledge	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97002	Rutledge	Morgan	Rutledge	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97003	Rutledge	Stage-Coach	Rutledge	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97005	Rutledge	Wheatley	Rutledge	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97006	Portland	Church	Portland	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97007	Portland	Bedford	Portland	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97008	William	Rutlege	William	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97009	William	Church	William	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97010	Church	William	Church	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97011	Church	Portland	Church	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97012	William	Brewery	William	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97013	William	Brewery	William	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97014	William	Amelia	William	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97016	William	Mill	William	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97017	George	Mill	George	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97018	George	Wheatley	George	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97019	George	Bridge	George	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97020	George	Bridge	George	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97021	Bedford	Portland	Bedford	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97022	Brewery	Mill	Brewery	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97023	Brewery	Amelia	Brewery	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97025	Mill	Rutledge	Mill	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97026	Mill	Brewery	Mill	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97028	Mill	Cross	Mill	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97033	Wheatley	Point	Wheatley	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97034	Wheatley	George	Wheatley	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97035	Stage-Coach	Water Tower	Stage-Coach	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97037	Morgan Dr	Rutledge	Morgan	200		1	3000	2011	50	$ 3,000.00	$ 4,152.70	4370.91	$ 4,370.91	39	78%	2	3	2011	50	6	based on life cycle	2061	2061
97038	Morgan	Morgan	Halfway	200		1	3000	2011	50	$ 3,000.00	$ 4,152.70	4370.91	$ 4,370.91	39	78%	2	3	2011	50	6	based on life cycle	2061	2061

Asset ID	Street Name	Intersection 1	Intersection 2	DIAMETER (mm)	LENGTH (m)	QUANTITY	UNIT PRICE ($)	CONST YEAR	USEFUL LIFE (YRS)	HISTORIC COST	2022 Replacement Cost (inflation accounted)	*Replacement Cost ($/unit)	2022 Replacement Cost	REMAINING LIFE (YRS)	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement-Based on life cycle	Timing of First Replacement
97039	Morgan	Morgan	South End	200		1	3000	2011	50	$ 3,000.00	$ 4,152.70	4370.91	$ 4,370.91	39	78%	2	3	2011	50	6	based on life cycle	2061	2061
97241 (S41)	Morgan Drive	Morgan	Rutledge	150		1	3000	2011	50	$ 3,000.00	$ 4,152.70	3824.54	$ 3,824.54	39	78%	2	3	2011	50	6	based on life cycle	2061	2061
97242 (S42)	Morgan Drive	Morgan	Halfway	150		1	3000	2011	50	$ 3,000.00	$ 4,152.70	3824.54	$ 3,824.54	39	78%	2	3	2011	50	6	based on life cycle	2061	2061
97243 (S43)	Morgan Drive	Morgan	Southend	150		1	3000	2011	50	$ 3,000.00	$ 4,152.70	3824.54	$ 3,824.54	39	78%	2	3	2011	50	6	based on life cycle	2061	2061
97015	Amelia	William	Amelia	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97024	Amelia	Brewery	Amelia	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97027	Cross	Mill	Cross	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97029	Cross	Wheatley	Cross	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97201 (S1)	Point Rd	Point Road	Halfway	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97202 (S2)	Point Rd	Wheatley	Point	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97203 (S3)	Wheatley St	Cross	Wheatley	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97204 (S4)	Wheatley St	Wheatley	Halfway	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97205 (S5)	Rutledge Rd	Wheatley	Rutledge	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97206 (S6)	Rutledge Rd	Rutledge	Halfway	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97207 (S7)	Rutledge Rd	Rutledge	East End	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97208 (S8)	Rutledge Rd	Wheatley	Rutledge	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97209 (S9)	Stage Coach Rd	Rutledge	Stage-Coach	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97210 (S10)	Stage Coach Rd	Stage-Coach	Halfway	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97211 (S11)	Stage Coach Rd	Water Tower	Stage-Coach	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97212 (S12)	Stage Coach Rd	Stage-Coach	South End	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97213 (S13)	Rutledge Rd	Stage-Coach	Rutledge	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97214 (S14)	George St	George	Wheatley	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97215 (S15)	George St	Bridge	Wheatley	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97216 (S16)	George St	Portland	Bedford	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97217 (S17)	Bedford Rd	Bedford	Halfway	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97218 (S18)	Bedford Rd	Bedford	North End	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97220 (S20)	Portland Ave	Bedford	Portland	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97221 (S21)	Portland Ave	West	97220	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97222 (S22)	Portland Ave	West	97221	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97223 (S23)	Portland Ave	West	97222	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97224 (S24)	Portland Ave	East	97225	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97225 (S25)	Portland Ave	Church	Portland	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97226 (S26)	Sydenham Walker Rd	Church	Walker	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97227 (S27)	Sydenham Walker Rd	Walker	West End	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97228 (S28)	Sydenham Church St	Portland	Church	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97229 (S29)	Sydenham Church St	William	Church	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97230 (S30)	Sydenham Church St	Rutledge	William	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97231 (S31)	Sydenham William St	William	Brewery	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97232 (S32)	Sydenham William St	Brewery	William	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97233 (S33)	Sydenham William St	Amelia	William	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97234 (S34)	George St	Mill	George	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97235 (S35)	Sydenham Mill St	Cross	Mill	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97236 (S36)	Sydenham Mill St	Brewery	Mill	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97237 (S37)	Brewery St	Amelia	Brewery	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97238 (S38)	Amelia St	Brewery	Amelia	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97239 (S39)	Rutledge Rd	Morgan	Rutledge	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97240 (S40)	Rutledge Rd	Rutledge	West End	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97244 (S44)	Rutledge Rd	Stage-Coach	Rutledge	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
Services (CS)																							
98030	Rutledge Road			150		1	2000	2005	50	$ 2,000.00	$ 3,305.70	5734.16	$ 5,734.16	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98134	Sydenham William Street			100		1	2000	2005	50	$ 2,000.00	$ 3,305.70	1914.92	$ 1,914.92	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98067	Sydenham Walker Street			38		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,917.27	$ 4,917.27	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98267	Morgan Dr			38		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 4,917.27	$ 4,917.27	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98008	Rutledge Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98031	Rutledge Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98032	Rutledge Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98033	Rutledge Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98039	Rutledge Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98041	Rutledge Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98043	Rutledge Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98044	Rutledge Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98046	Rutledge Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98048	Rutledge Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98057	Sydenham Church Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98059	Sydenham Church Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98066	Sydenham Walker Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98068	Sydenham Walker Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98069	Sydenham Walker Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98070	Morgan Dr			25		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 4,370.91	$ 4,370.91	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98071	Morgan Dr			25		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 4,370.91	$ 4,370.91	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98072	Morgan Dr			25		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 4,370.91	$ 4,370.91	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98073	Morgan Dr			25		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 4,370.91	$ 4,370.91	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98074	Morgan Dr			25		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 4,370.91	$ 4,370.91	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98075	Stage Coach Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98076	Stage Coach Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98077	Stage Coach Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98078	Stage Coach Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98079	Stage Coach Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98080	Stage Coach Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98081	Stage Coach Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98091	Stage Coach Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98095	Stage Coach Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98102	Portland Avenue			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98122	Bedford Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98143	George Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98152	George Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98223	Sydenham Mill Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98227	Sydenham Cross Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98231	Wheatley Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98251	Sydenham Willaim St			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98253	George Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98261	Bedford Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98264	Portland Avenue			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98267	Portland Avenue			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98000	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055

Asset ID	Street Name	Intersection 1	Intersection 2	DIAMETER (mm)	LENGTH (m)	QUANTITY	UNIT PRICE ($)	CONST YEAR	USEFUL LIFE (YRS)	HISTORIC COST	2022 Replacement Cost (inflation accounted)	*Replacement Cost ($/unit)	2022 Replacement Cost	REMAINING LIFE (YRS)	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement-Based on life cycle	Timing of First Replacement
98001	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98002	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98003	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98004	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98005	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98006	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98007	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98009	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98010	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98011	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98012	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98013	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98014	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98015	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98016	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98017	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98018	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98019	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98020	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98021	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98022	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98023	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98024	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98025	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98026	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98027	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98028	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98029	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98034	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98035	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98036	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98037	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98038	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98040	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98042	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98045	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98047	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98049	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98050	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98051	Sydenham Church Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98052	Sydenham Church Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98053	Sydenham Church Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98054	Sydenham Church Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98055	Sydenham Church Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98056	Sydenham Church Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98058	Sydenham Church Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98060	Sydenham Church Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98061	Sydenham Walker Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98062	Sydenham Walker Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98063	Sydenham Walker Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98064	Sydenham Walker Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98065	Sydenham Walker Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98082	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98083	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98084	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98085	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98086	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98087	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98088	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98089	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98090	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98092	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98093	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98094	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98096	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98097	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98098	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98099	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98100	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98101	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98103	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98104	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98105	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98106	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98107	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98108	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98109	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98110	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98111	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98112	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98113	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98114	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98115	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98116	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98117	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98118	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98119	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98120	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98121	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98123	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98124	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98125	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98126	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98127	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98128	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98129	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98130	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98131	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98132	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98133	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055

Asset ID	Street Name	Intersection 1	Intersection 2	DIAMETER (mm)	LENGTH (m)	QUANTITY	UNIT PRICE ($)	CONST YEAR	USEFUL LIFE (YRS)	HISTORIC COST	2022 Replacement Cost (inflation accounted)	*Replacement Cost ($/unit)	2022 Replacement Cost	REMAINING LIFE (YRS)	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement-Based on life cycle	Timing of First Replacement
98135	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98136	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98137	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98138	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98139	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98140	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98141	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98142	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98144	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98145	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98146	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98147	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98148	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98149	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98150	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98151	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98153	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98154	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98155	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98156	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98157	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98158	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98159	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98160	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98161	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98162	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98163	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98164	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98165	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98166	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98167	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98168	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98169	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98170	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98171	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98172	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98173	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98174	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98175	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98176	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98177	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98178	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98179	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98180	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98181	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98182	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98183	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98184	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98185	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98186	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98187	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98188	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98189	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98190	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98191	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98192	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98193	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98194	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98195	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98196	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98197	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98198	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98199	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98200	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98201	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98202	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98203	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98204	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98205	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98206	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98207	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98208	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98209	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98210	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98211	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98212	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98213	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98214	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98215	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98216	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98217	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98218	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98219	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98220	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98221	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98222	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98224	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98225	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98226	Sydenham Cross Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98228	Sydenham Cross Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98229	Sydenham Cross Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98230	Sydenham Cross Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98232	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98233	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98234	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98235	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98236	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98237	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98238	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98239	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055

Asset ID	Street Name	Intersection 1	Intersection 2	DIAMETER (mm)	LENGTH (m)	QUANTITY	UNIT PRICE ($)	CONST YEAR	USEFUL LIFE (YRS)	HISTORIC COST	2022 Replacement Cost (inflation accounted)	*Replacement Cost ($/unit)	2022 Replacement Cost	REMAINING LIFE (YRS)	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement-Based on life cycle	Timing of First Replacement
98240	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98241	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98242	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98243	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98244	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98245	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98246	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98247	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98248	Point Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98249	Point Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98250	Point Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98252	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98254	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98255	Point Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98256	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98257	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98258	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98259	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98260	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98262	Sydenham Church Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98263	Sydenham Church Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98265	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98266	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98268	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98269	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98270	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98271	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98272	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98273	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98274	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98275	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98276	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98277	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98278	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98279	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98280	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98281	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98282	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98283	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98284	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98285	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98286	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
Hydrants [ID(tag)]																							
96001 (1)	Point Rd	Point Road	Halfway			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96002 (2)	Wheatley St	Wheatley	Point			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96003 (3)	Wheatley St	Cross	Wheatley			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96004 (4)	Wheatley St	Wheatley	Halfway			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96005 (5)	Rutledge Rd	Wheatley	Rutledge			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96006 (6)	Rutledge Rd	Rutledge	Halfway			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96007 (7)	Rutledge Rd	Rutledge	East End			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96008 (8)	Rutledge Rd	Wheatley	Rutledge			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96009 (9)	Stage Coach Rd	Rutledge	Stage-Coach			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96010 (10)	Stage Coach Rd	Stage-Coach	Halfway			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96011 (11)	Stage Coach Rd	Water Tower	Stage-Coach			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96012 (12)	Stage Coach Rd	Stage-Coach	South End			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96013 (13)	Rutledge Rd	Stage-Coach	Rutledge			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96014 (14)	George St	George	Wheatley			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96015 (15)	George St	Bridge	Wheatley			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96016 (16)	George St	Portland	Bedford			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96017 (17)	Bedford Rd	Bedford	Halfway			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96018 (18)	Bedford Rd	Bedford	North End			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96020 (20)	Portland Ave	Bedford	Portland			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96021 (21)	Portland Ave	Church	Bedford			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96022 (22)	Portland Ave	Church	Bedford			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96023 (23)	Portland Ave	Church	Bedford			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96024 (24)	Portland Ave	Church	Bedford			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96025 (25)	Portland Ave	Church	Portland			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96026 (26)	Sydenham Walker Rd	Church	Walker			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96027 (27)	Sydenham Walker Rd	Walker	West End			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96028 (28)	Sydenham Church St	Portland	Church			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96029 (29)	Sydenham Church St	William	Church			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96030 (30)	Sydenham Church St	Rutledge	William			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96031 (31)	Sydenham William St	William	Brewery			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96032 (32)	Sydenham William St	Brewery	William			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96033 (33)	Sydenham William St	Amelia	William			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96034 (34)	George St	Mill	George			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96035 (35)	Sydenham Mill St	Cross	Mill			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96036 (36)	Sydenham Mill St	Brewery	Mill			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96037 (37)	Brewery St	Amelia	Brewery			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96038 (38)	Amelia St	Brewery	Amelia			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96039 (39)	Rutledge Rd	Morgan	Rutledge			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96040 (40)	Rutledge Rd	Rutledge	West End			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96041 (41)	Morgan Dr	Morgan	Rutledge			1	5000	2011	60	$ 5,000.00	$ 6,921.17	$ 8,195.45	$ 8,195.45	50	83%	1	4	2011	60	4	based on life cycle	2071	2071
96042 (42)	Morgan Dr	Morgan	Halfway			1	5000	2011	60	$ 5,000.00	$ 6,921.17	$ 8,195.45	$ 8,195.45	50	83%	1	4	2011	60	4	based on life cycle	2071	2071
96043 (43)	Morgan Dr	Morgan	Southend			1	5000	2011	60	$ 5,000.00	$ 6,921.17	$ 8,195.45	$ 8,195.45	50	83%	1	4	2011	60	4	based on life cycle	2071	2071
96044 (44)	Rutledge Rd	Stage-Coach	Rutledge			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
Summary													$ 4,847,115.69										

Storm Sewers

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
PIPES																					
93504		Hartington- Road 38	Hartington	CSP	750	14.3	1973			$337.00	$690.00	$ 9,867	2%	5	4	1973	50	20	2024 to 2028	2023	2073
93509		Hartington- Road 38	Hartington	CSP	750	13.9	1973			$337.00	$690.00	$ 9,591	2%	5	4	1973	50	20	2024 to 2028	2023	2073
93510		Hartington- Road 38	Hartington	CSP	450	8.5	1973			$312.00	$450.00	$ 3,825	2%	5	3	1973	50	15	2029 to 2033	2023	2073
93511		Hartington- Road 38	Hartington	CSP	450	15.0	1973			$312.00	$450.00	$ 6,750	2%	5	3	1973	50	15	2029 to 2033	2023	2073
93512		Hartington- Road 38	Hartington	CSP	450	22.3	1973			$312.00	$450.00	$ 10,035	2%	5	3	1973	50	15	2029 to 2033	2023	2073
93513		Hartington- Road 38	Hartington	CSP	450	17.9	1973			$312.00	$450.00	$ 8,055	2%	5	3	1973	50	15	2029 to 2033	2023	2073
93524		Hartington- Boyce Road	Hartington	CSP	450	10.0	1973			$312.00	$450.00	$ 4,500	2%	5	3	1973	50	15	2029 to 2033	2023	2073
93501		Hartington- Boyce Road	Hartington	CSP	525	12.1	1973			$328.00	$470.00	$ 5,687	2%	5	3	1973	50	15	2029 to 2033	2023	2073
93500		Hartington- Boyce Road	Hartington	CSP	600	34.1	1973			$332.00	$530.00	$ 18,073	2%	5	3	1973	50	15	2029 to 2033	2023	2073
93502		Hartington- Boyce Road	Hartington	CSP	600	46.5	1973			$332.00	$530.00	$ 24,645	2%	5	3	1973	50	15	2029 to 2033	2023	2073
93503		Hartington- Boyce Road	Hartington	CSP	600	24.8	1973			$332.00	$530.00	$ 13,144	2%	5	3	1973	50	15	2029 to 2033	2023	2073
93506		Hartington- Road 38	Hartington	CSP	300	26.0	1973			$291.00	$350.00	$ 9,100	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93507		Hartington- Road 38	Hartington	CSP	300	31.5	1973			$291.00	$350.00	$ 11,025	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93517		Hartington- Holleford Rd	Hartington	CSP	375	11.9	1973			$295.00	$420.00	$ 4,998	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93518		Hartington- Holleford Rd	Hartington	CSP	375	24.4	1973			$295.00	$420.00	$ 10,248	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93519		Hartington- Holleford Rd	Hartington	CSP	375	3.1	1973			$295.00	$420.00	$ 1,302	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93520		Hartington- Holleford Rd	Hartington	CSP	375	91.0	1973			$295.00	$420.00	$ 38,220	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93521		Hartington- Holleford Rd	Hartington	CSP	375	42.8	1973			$295.00	$420.00	$ 17,976	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93522		Hartington- Holleford Rd	Hartington	CSP	375	8.2	1973			$295.00	$420.00	$ 3,444	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93523		Hartington- Holleford Rd	Hartington	CSP	375	14.5	1973			$295.00	$420.00	$ 6,090	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93525		Hartington- Boyce Road	Hartington	CSP	375	26.3	1973			$295.00	$420.00	$ 11,046	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93526		Hartington- Boyce Road	Hartington	CSP	375	12.3	1973			$295.00	$420.00	$ 5,166	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93527		Hartington- Boyce Road	Hartington	CSP	375	23.1	1973			$295.00	$420.00	$ 9,702	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93528		Hartington- Boyce Road	Hartington	CSP	375	11.2	1973			$295.00	$420.00	$ 4,704	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93529		Hartington- Boyce Road	Hartington	CSP	375	17.0	1973			$295.00	$420.00	$ 7,140	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93530		Hartington- Boyce Road	Hartington	CSP	375	47.7	1973			$295.00	$420.00	$ 20,017	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93248		Verona- Road 38	Verona	CSP	300	8.5	1975			$291.00	$350.00	$ 2,975	6%	5	2	1975	50	10	2029 to 2033	2025	2075
93736		Harrowsmith- Kingston Rd	Harrowsmith	CSP	750	39.7	1985			$337.00	$690.00	$ 27,393	26%	4	4	1985	50	16	2024 to 2028	2035	2085
93732		Harrowsmith- Notre Dame St	Harrowsmith	CSP	450	25.4	1985			$312.00	$450.00	$ 11,430	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93733		Harrowsmith- Notre Dame St	Harrowsmith	CSP	450	1.1	1985			$312.00	$450.00	$ 495	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93734		Harrowsmith- Notre Dame St	Harrowsmith	CSP	450	30.2	1985			$312.00	$450.00	$ 13,590	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93735		Harrowsmith- Maria St	Harrowsmith	CSP	450	8.0	1985			$312.00	$450.00	$ 3,600	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93737		Harrowsmith-Rutledge Rd	Harrowsmith	CSP	450	8.6	1985			$312.00	$450.00	$ 3,870	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93738		Harrowsmith-Rutledge Rd	Harrowsmith	CSP	450	104.0	1985			$312.00	$450.00	$ 46,800	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93740		Harrowsmith- Notre Dame St	Harrowsmith	CSP	450	10.9	1985			$312.00	$450.00	$ 4,905	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93741		Harrowsmith- William St	Harrowsmith	CSP	450	54.4	1985			$312.00	$450.00	$ 24,480	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93742		Harrowsmith- William St	Harrowsmith	CSP	450	7.8	1985			$312.00	$450.00	$ 3,510	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93702		Harrowsmith- Kingston Rd	Harrowsmith	CSP	500	6.2	1985			$328.00	$470.00	$ 2,914	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93739		Harrowsmith-Rutledge Rd	Harrowsmith	CSP	600	7.4	1985			$332.00	$530.00	$ 3,922	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93701		Harrowsmith- Kingston Rd	Harrowsmith	CSP	300	11.1	1985			$291.00	$350.00	$ 3,885	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93712		Road 38	Harrowsmith	CSP	300	13.1	1985			$291.00	$350.00	$ 4,585	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93714		Road38	Harrowsmith	CSP	300	12.8	1985			$291.00	$350.00	$ 4,480	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93716		Road38	Harrowsmith	CSP	300	12.8	1985			$291.00	$350.00	$ 4,480	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93718		Road38	Harrowsmith	CSP	300	13.6	1985			$291.00	$350.00	$ 4,760	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93725		Harrowsmith- Colebrook Rd	Harrowsmith	CSP	300	17.2	1985			$291.00	$350.00	$ 6,020	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93703		Harrowsmith- Kingston Rd	Harrowsmith	CSP	350	17.5	1985			$295.00	$420.00	$ 7,350	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93723		Harrowsmith- Colebrook Rd	Harrowsmith	CSP	400	24.0	1985			$312.00	$450.00	$ 10,800	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93724		Harrowsmith- Colebrook Rd	Harrowsmith	CSP	400	9.2	1985			$312.00	$450.00	$ 4,140	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93727		Harrowsmith- Colebrook Rd	Harrowsmith	CSP	400	40.8	1985			$312.00	$450.00	$ 18,360	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93728		Harrowsmith- Notre Dame St	Harrowsmith	CSP	400	3.0	1985			$312.00	$450.00	$ 1,350	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93729		Harrowsmith- Notre Dame St	Harrowsmith	CSP	400	93.9	1985			$312.00	$450.00	$ 42,255	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93730		Harrowsmith- Notre Dame St	Harrowsmith	CSP	400	1.4	1985			$312.00	$450.00	$ 630	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93731		Harrowsmith- Notre Dame St	Harrowsmith	CSP	400	10.2	1985			$312.00	$450.00	$ 4,590	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93726		Harrowsmith- Colebrook Rd	Harrowsmith	CSP	200	2.3	1985			$291.00	$320.00	$ 736	26%	4	1	1985	50	4	2058 to 2080	2035	2085
93719		Road38	Harrowsmith	CSP	250	9.0	1985			$291.00	$350.00	$ 3,150	26%	4	1	1985	50	4	2058 to 2080	2035	2085
93974		Sydenham- Wheatley St	Sydenham	CSP	450	109.7	1986			$312.00	$450.00	$ 49,365	28%	4	3	1986	50	12	2029 to 2033	2036	2086
93976		Sydenham- Wheatley St	Sydenham	CSP	450	78.7	1986			$312.00	$450.00	$ 35,415	28%	4	3	1986	50	12	2029 to 2033	2036	2086
93978		Sydenham- Wheatley St	Sydenham	CSP	450	85.2	1986			$312.00	$450.00	$ 38,340	28%	4	3	1986	50	12	2029 to 2033	2036	2086
93980		Sydenham- Wheatley St	Sydenham	CSP	450	61.2	1986			$312.00	$450.00	$ 27,540	28%	4	3	1986	50	12	2029 to 2033	2036	2086
93997		Sydenham- Point Rd	Sydenham	CSP	450	67.4	1986			$312.00	$450.00	$ 30,330	28%	4	3	1986	50	12	2029 to 2033	2036	2086
93998		Sydenham- Point Rd	Sydenham	CSP	450	55.7	1986			$312.00	$450.00	$ 25,065	28%	4	3	1986	50	12	2029 to 2033	2036	2086
94001		Sydenham- George St	Sydenham	CSP	450	17.2	1986			$312.00	$450.00	$ 7,740	28%	4	3	1986	50	12	2029 to 2033	2036	2086
93942		Sydenham- Sydenham William St	Sydenham	CSP	450	7.2	1986			$312.00	$450.00	$ 3,240	28%	4	3	1986	50	12	2029 to 2033	2036	2086
93966		Sydenham- Sydenham Mill St	Sydenham	CSP	450	33.9	1986			$312.00	$450.00	$ 15,255	28%	4	3	1986	50	12	2029 to 2033	2036	2086
93982		Sydenham- Wheatley St	Sydenham	CSP	450	52.7	1986			$312.00	$450.00	$ 23,715	28%	4	3	1986	50	12	2029 to 2033	2036	2086
93916		Sydenham- Stage Coach Rd	Sydenham	CSP	300	7.5	1986			$291.00	$350.00	$ 2,625	28%	4	2	1986	50	8	2034 to 2057	2036	2086
93973		Sydenham- Wheatley St	Sydenham	CSP	300	3.3	1986			$291.00	$350.00	$ 1,155	28%	4	2	1986	50	8	2034 to 2057	2036	2086
93975		Sydenham- Wheatley St	Sydenham	CSP	300	8.2	1986			$291.00	$350.00	$ 2,870	28%	4	2	1986	50	8	2034 to 2057	2036	2086
93979		Sydenham- Wheatley St	Sydenham	CSP	300	8.4	1986			$291.00	$350.00	$ 2,940	28%	4	2	1986	50	8	2034 to 2057	2036	2086
93981		Sydenham- Wheatley St	Sydenham	CSP	300	7.8	1986			$291.00	$350.00	$ 2,730	28%	4	2	1986	50	8	2034 to 2057	2036	2086
93987		Sydenham- Wheatley St	Sydenham	CSP	300	5.5	1986			$291.00	$350.00	$ 1,925	28%	4	2	1986	50	8	2034 to 2057	2036	2086

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
94002		Sydenham- George St	Sydenham	CSP	300	7.6	1986			$291.00	$350.00	$ 2,660	28%	4	2	1986	50	8	2034 to 2057	2036	2086
94409		Inverary- Perth Rd 10	Inverary	CSP	500	95.4	1993			$328.00	$470.00	$ 44,838	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94410		Inverary- Perth Rd 10	Inverary	CSP	500	40.0	1993			$328.00	$470.00	$ 18,800	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94411		Inverary- Perth Rd 10	Inverary	CSP	500	6.9	1993			$328.00	$470.00	$ 3,243	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94412		Inverary- Perth Rd 10	Inverary	CSP	500	22.5	1993			$328.00	$470.00	$ 10,575	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94400		Inverary- Perth Rd 10	Inverary	CSP	600	27.4	1993			$332.00	$530.00	$ 14,522	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94401		Inverary- Perth Rd 10	Inverary	CSP	600	8.3	1993			$332.00	$530.00	$ 4,399	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94402		Inverary- Perth Rd 10	Inverary	CSP	600	85.7	1993			$332.00	$530.00	$ 45,421	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94403		Inverary- Perth Rd 10	Inverary	CSP	600	8.7	1993			$332.00	$530.00	$ 4,611	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94404		Inverary- Perth Rd 10	Inverary	CSP	600	90.3	1993			$332.00	$530.00	$ 47,859	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94405		Inverary- Perth Rd 10	Inverary	CSP	600	8.2	1993			$332.00	$530.00	$ 4,346	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94406		Inverary- Perth Rd 10	Inverary	CSP	600	57.1	1993			$332.00	$530.00	$ 30,263	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94407		Inverary- Perth Rd 10	Inverary	CSP	600	8.0	1993			$332.00	$530.00	$ 4,240	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94408		Inverary- Perth Rd 10	Inverary	CSP	600	7.1	1993			$332.00	$530.00	$ 3,763	42%	3	3	1993	50	9	2034 to 2057	2043	2093
93505		Hartington- Road 38	Hartington	Concrete	450	83.6	1973			$312.00	$450.00	$ 37,620	39%	3	3	1973	80	9	2034 to 2057	2053	
93514		Hartington- Road 38	Hartington	Concrete	450	36.0	1973			$312.00	$450.00	$ 16,200	39%	3	3	1973	80	9	2034 to 2057	2053	
93516		Hartington- Holleford Rd	Hartington	HDPE	300	9.5	1973			$291.00	$350.00	$ 3,325	39%	3	2	1973	80	6	2058 to 2080	2053	
93515		Hartington- Road 38	Hartington	Concrete	250	15.3	1973			$291.00	$350.00	$ 5,355	39%	3	1	1973	80	3	2081 to 2084	2053	
94819		Battersea- Battersea Rd	Battersea	CSP	500	7.9	2004			$328.00	$470.00	$ 3,713	64%	2	3	2004	50	6	2058 to 2080	2054	2104
94820		Battersea- Battersea Rd	Battersea	CSP	500	20.2	2004			$328.00	$470.00	$ 9,494	64%	2	3	2004	50	6	2058 to 2080	2054	2104
94821		Battersea- Battersea Rd	Battersea	CSP	500	19.7	2004			$328.00	$470.00	$ 9,259	64%	2	3	2004	50	6	2058 to 2080	2054	2104
94802		Battersea- Battersea Rd	Battersea	CSP	500	5.0	2004			$328.00	$470.00	$ 2,350	64%	2	3	2004	50	6	2058 to 2080	2054	2104
94814		Battersea- Battersea Rd	Battersea	CSP	400	24.1	2004			$312.00	$450.00	$ 10,845	64%	2	2	2004	50	4	2058 to 2080	2054	2104
94822		Battersea- Battersea Rd	Battersea	CSP	400	111.7	2004			$312.00	$450.00	$ 50,265	64%	2	2	2004	50	4	2058 to 2080	2054	2104
94804		Battersea- Battersea Rd	Battersea	CSP	400	105.3	2004			$312.00	$450.00	$ 47,385	64%	2	2	2004	50	4	2058 to 2080	2054	2104
94805		Battersea- Battersea Rd	Battersea	CSP	400	9.1	2004			$312.00	$450.00	$ 4,095	64%	2	2	2004	50	4	2058 to 2080	2054	2104
94806		Battersea- Battersea Rd	Battersea	CSP	400	107.3	2004			$312.00	$450.00	$ 48,285	64%	2	2	2004	50	4	2058 to 2080	2054	2104
94815		Battersea- Battersea Rd	Battersea	CSP	400	35.4	2004			$312.00	$450.00	$ 15,930	64%	2	2	2004	50	4	2058 to 2080	2054	2104
94816		Battersea- Battersea Rd	Battersea	CSP	400	8.4	2004			$312.00	$450.00	$ 3,780	64%	2	2	2004	50	4	2058 to 2080	2054	2104
94823		Battersea- Battersea Rd	Battersea	CSP	400	37.0	2004			$312.00	$450.00	$ 16,650	64%	2	2	2004	50	4	2058 to 2080	2054	2104
94824		Battersea- Battersea Rd	Battersea	CSP	400	8.3	2004			$312.00	$450.00	$ 3,735	64%	2	2	2004	50	4	2058 to 2080	2054	2104
93213		Verona- Water St	Verona	HDPE	750	57.8	1975			$337.00	$690.00	$ 39,882	41%	3	4	1975	80	12	2029 to 2033	2055	
93215		Verona- Water St	Verona	HDPE	750	73.5	1975			$337.00	$690.00	$ 50,715	41%	3	4	1975	80	12	2029 to 2033	2055	
93237		Verona- Road 38	Verona	HDPE	750	7.4	1975			$337.00	$690.00	$ 5,106	41%	3	4	1975	80	12	2029 to 2033	2055	
93212		Verona- Water St	Verona	Concrete	900	40.4	1975			$337.00	$870.00	$ 35,148	41%	3	4	1975	80	12	2029 to 2033	2055	
93236		Verona- Road 38	Verona	Concrete	900	44.2	1975			$337.00	$870.00	$ 38,454	41%	3	4	1975	80	12	2029 to 2033	2055	
93234		Verona- Road 38	Verona	HDPE	450	36.0	1975			$312.00	$450.00	$ 16,200	41%	3	3	1975	80	9	2034 to 2057	2055	
93204	55485	Verona- Road 38	Verona	HDPE	525	58.7	1975			$328.00	$470.00	$ 27,589	41%	3	3	1975	80	9	2034 to 2057	2055	
93206	55485	Verona- Road 38	Verona	HDPE	525	100.1	1975			$328.00	$470.00	$ 47,047	41%	3	3	1975	80	9	2034 to 2057	2055	
93216		Verona- Road 38	Verona	HDPE	525	64.8	1975			$328.00	$470.00	$ 30,456	41%	3	3	1975	80	9	2034 to 2057	2055	
93229		Verona- Road 38	Verona	HDPE	525	44.6	1975			$328.00	$470.00	$ 20,962	41%	3	3	1975	80	9	2034 to 2057	2055	
93232		Verona- Road 38	Verona	HDPE	525	79.7	1975			$328.00	$470.00	$ 37,459	41%	3	3	1975	80	9	2034 to 2057	2055	
93239		Verona- Road 38	Verona	HDPE	525	9.0	1975			$328.00	$470.00	$ 4,230	41%	3	3	1975	80	9	2034 to 2057	2055	
93200	55485	Verona- Road 38	Verona	HDPE	600	5.6	1975			$332.00	$530.00	$ 2,968	41%	3	3	1975	80	9	2034 to 2057	2055	
93201	55485	Verona- Road 38	Verona	HDPE	600	41.4	1975			$332.00	$530.00	$ 21,942	41%	3	3	1975	80	9	2034 to 2057	2055	
93224		Verona- Road 38	Verona	HDPE	600	9.7	1975			$332.00	$530.00	$ 5,141	41%	3	3	1975	80	9	2034 to 2057	2055	
93226		Verona- Road 38	Verona	HDPE	600	42.0	1975			$332.00	$530.00	$ 22,260	41%	3	3	1975	80	9	2034 to 2057	2055	
93228		Verona- Road 38	Verona	HDPE	600	43.6	1975			$332.00	$530.00	$ 23,108	41%	3	3	1975	80	9	2034 to 2057	2055	
93238		Verona- Road 38	Verona	HDPE	600	41.0	1975			$332.00	$530.00	$ 21,730	41%	3	3	1975	80	9	2034 to 2057	2055	
93250		Verona- Road 38	Verona	HDPE	600	44.7	1975			$332.00	$530.00	$ 23,691	41%	3	3	1975	80	9	2034 to 2057	2055	
93244		Verona- Road 38	Verona	Concrete	300	5.4	1975			$291.00	$350.00	$ 1,890	41%	3	2	1975	80	6	2058 to 2080	2055	
93252		Verona- Road 38	Verona	Concrete	300	19.4	1975			$291.00	$350.00	$ 6,790	41%	3	2	1975	80	6	2058 to 2080	2055	
93253		Verona- Road 38	Verona	Concrete	300	16.1	1975			$291.00	$350.00	$ 5,635	41%	3	2	1975	80	6	2058 to 2080	2055	
93202	55485	Verona- Road 38	Verona	HDPE	300	12.2	1975			$291.00	$350.00	$ 4,270	41%	3	2	1975	80	6	2058 to 2080	2055	
93203	45700	Verona Sand Rd	Verona	HDPE	300	10.0	1975			$291.00	$350.00	$ 3,500	41%	3	2	1975	80	6	2058 to 2080	2055	
93205	55485	Verona- Road 38	Verona	HDPE	300	8.1	1975			$291.00	$350.00	$ 2,835	41%	3	2	1975	80	6	2058 to 2080	2055	
93207	55485	Verona- Road 38	Verona	HDPE	300	8.2	1975			$291.00	$350.00	$ 2,870	41%	3	2	1975	80	6	2058 to 2080	2055	
93208	46360	Verona- Walker St	Verona	HDPE	300	7.3	1975			$291.00	$350.00	$ 2,555	41%	3	2	1975	80	6	2058 to 2080	2055	
93209	46360	Verona- Walker St	Verona	HDPE	300	7.9	1975			$291.00	$350.00	$ 2,765	41%	3	2	1975	80	6	2058 to 2080	2055	
93211	55485	Verona- Road 38	Verona	HDPE	300	8.1	1975			$291.00	$350.00	$ 2,835	41%	3	2	1975	80	6	2058 to 2080	2055	
93214		Verona- Water St	Verona	HDPE	300	5.9	1975			$291.00	$350.00	$ 2,065	41%	3	2	1975	80	6	2058 to 2080	2055	
93218		Verona- Road 38	Verona	HDPE	300	86.6	1975			$291.00	$350.00	$ 30,310	41%	3	2	1975	80	6	2058 to 2080	2055	
93219		Verona- Road 38	Verona	HDPE	300	3.7	1975			$291.00	$350.00	$ 1,295	41%	3	2	1975	80	6	2058 to 2080	2055	
93220		Verona- Genge St	Verona	HDPE	300	7.5	1975			$291.00	$350.00	$ 2,625	41%	3	2	1975	80	6	2058 to 2080	2055	
93221		Verona- Road 38	Verona	HDPE	300	12.5	1975			$291.00	$350.00	$ 4,375	41%	3	2	1975	80	6	2058 to 2080	2055	
93222		Verona- Bank St	Verona	HDPE	300	8.0	1975			$291.00	$350.00	$ 2,800	41%	3	2	1975	80	6	2058 to 2080	2055	
93223		Verona- Road 38	Verona	HDPE	300	3.9	1975			$291.00	$350.00	$ 1,365	41%	3	2	1975	80	6	2058 to 2080	2055	
93225		Verona- Road 38	Verona	HDPE	300	8.4	1975			$291.00	$350.00	$ 2,940	41%	3	2	1975	80	6	2058 to 2080	2055	
93227		Verona- Road 38	Verona	HDPE	300	8.3	1975			$291.00	$350.00	$ 2,905	41%	3	2	1975	80	6	2058 to 2080	2055	
93230		Verona- Road 38	Verona	HDPE	300	3.0	1975			$291.00	$350.00	$ 1,050	41%	3	2	1975	80	6	2058 to 2080	2055	
93231		Verona- Road 38	Verona	HDPE	300	8.6	1975			$291.00	$350.00	$ 3,010	41%	3	2	1975	80	6	2058 to 2080	2055	
93233		Verona- Road 38	Verona	HDPE	300	8.3	1975			$291.00	$350.00	$ 2,905	41%	3	2	1975	80	6	2058 to 2080	2055	
93235		Verona- Road 38	Verona	HDPE	300	5.6	1975			$291.00	$350.00	$ 1,960	41%	3	2	1975	80	6	2058 to 2080	2055	
93240		Verona- Road 38	Verona	HDPE	300	7.4	1975			$291.00	$350.00	$ 2,590	41%	3	2	1975	80	6	2058 to 2080	2055	

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
93243		Verona- Road 38	Verona	HDPE	300	7.3	1975			$291.00	$350.00	$ 2,555	41%	3	2	1975	80	6	2058 to 2080	2055	
93246		Verona- Road 38	Verona	HDPE	300	3.3	1975			$291.00	$350.00	$ 1,155	41%	3	2	1975	80	6	2058 to 2080	2055	
93247		Verona- Road 38	Verona	HDPE	300	9.2	1975			$291.00	$350.00	$ 3,220	41%	3	2	1975	80	6	2058 to 2080	2055	
93251		Verona- Road 38	Verona	HDPE	300	9.0	1975			$291.00	$350.00	$ 3,150	41%	3	2	1975	80	6	2058 to 2080	2055	
93255		Verona- Road 38	Verona	HDPE	300	8.6	1975			$291.00	$350.00	$ 3,010	41%	3	2	1975	80	6	2058 to 2080	2055	
93256		Verona- Road 38	Verona	HDPE	300	11.9	1975			$291.00	$350.00	$ 4,165	41%	3	2	1975	80	6	2058 to 2080	2055	
93258		Verona- Road 38	Verona	HDPE	300	9.2	1975			$291.00	$350.00	$ 3,220	41%	3	2	1975	80	6	2058 to 2080	2055	
93259		Verona- Road 38	Verona	HDPE	300	6.1	1975			$291.00	$350.00	$ 2,135	41%	3	2	1975	80	6	2058 to 2080	2055	
93261		Verona- Road 38	Verona	HDPE	300	15.7	1975			$291.00	$350.00	$ 5,495	41%	3	2	1975	80	6	2058 to 2080	2055	
93262		Verona- Road 38	Verona	HDPE	300	18.1	1975			$291.00	$350.00	$ 6,335	41%	3	2	1975	80	6	2058 to 2080	2055	
93263		Verona- Road 38	Verona	HDPE	300	8.2	1975			$291.00	$350.00	$ 2,870	41%	3	2	1975	80	6	2058 to 2080	2055	
93264		Verona- Road 38	Verona	HDPE	300	8.1	1975			$291.00	$350.00	$ 2,835	41%	3	2	1975	80	6	2058 to 2080	2055	
93265		Verona- Road 38	Verona	PVC	300	35.6	1975			$291.00	$350.00	$ 12,460	41%	3	2	1975	80	6	2058 to 2080	2055	
93210	55485	Verona- Road 38	Verona	HDPE	375	50.0	1975			$295.00	$420.00	$ 21,000	41%	3	2	1975	80	6	2058 to 2080	2055	
93217		Verona- Road 38	Verona	HDPE	375	8.4	1975			$295.00	$420.00	$ 3,528	41%	3	2	1975	80	6	2058 to 2080	2055	
93241		Verona- Road 38	Verona	HDPE	375	22.8	1975			$295.00	$420.00	$ 9,576	41%	3	2	1975	80	6	2058 to 2080	2055	
93242		Verona- Road 38	Verona	HDPE	375	21.3	1975			$295.00	$420.00	$ 8,946	41%	3	2	1975	80	6	2058 to 2080	2055	
93245		Verona- Road 38	Verona	HDPE	375	45.4	1975			$295.00	$420.00	$ 19,068	41%	3	2	1975	80	6	2058 to 2080	2055	
93254		Verona- Road 38	Verona	HDPE	375	35.8	1975			$295.00	$420.00	$ 15,036	41%	3	2	1975	80	6	2058 to 2080	2055	
93257		Verona- Road 38	Verona	HDPE	375	43.3	1975			$295.00	$420.00	$ 18,186	41%	3	2	1975	80	6	2058 to 2080	2055	
93260		Verona- Road 38	Verona	HDPE	375	40.9	1975			$295.00	$420.00	$ 17,178	41%	3	2	1975	80	6	2058 to 2080	2055	
93249		Verona- Road 38	Verona	PVC	375	10.7	1975			$295.00	$420.00	$ 4,494	41%	3	2	1975	80	6	2058 to 2080	2055	
94229		Perth Road- Perth Rd 10	Perth Road Village	CSP	500	12.2	2012			$328.00	$470.00	$ 5,734	80%	1	3	2012	50	3	2081 to 2084	2062	2112
94230		Perth Road- Perth Rd 10	Perth Road Village	CSP	500	4.4	2012			$328.00	$470.00	$ 2,068	80%	1	3	2012	50	3	2081 to 2084	2062	2112
94231		Shales/Opp- Shales Rd	Perth Road Village	CSP	500	15.0	2012			$328.00	$470.00	$ 7,050	80%	1	3	2012	50	3	2081 to 2084	2062	2112
94232		Shales/Opp- Shales Rd	Perth Road Village	CSP	500	3.4	2012			$328.00	$470.00	$ 1,598	80%	1	3	2012	50	3	2081 to 2084	2062	2112
94233		Shales/Opp- Opinicon Rd	Perth Road Village	CSP	500	13.0	2012			$328.00	$470.00	$ 6,110	80%	1	3	2012	50	3	2081 to 2084	2062	2112
94234		Shales/Opp- Opinicon Rd	Perth Road Village	CSP	500	16.3	2012			$328.00	$470.00	$ 7,661	80%	1	3	2012	50	3	2081 to 2084	2062	2112
94235		Shales/Opp- Opinicon Rd	Perth Road Village	CSP	500	55.5	2012			$328.00	$470.00	$ 26,085	80%	1	3	2012	50	3	2081 to 2084	2062	2112
94228		Perth Road- Perth Rd 10	Perth Road Village	CSP	600	17.0	2012			$332.00	$530.00	$ 9,010	80%	1	3	2012	50	3	2081 to 2084	2062	2112
94833		Batersea- Wellington St	Battersea	CSP	300	21.9	2013			$291.00	$350.00	$ 7,665	82%	1	2	2013	50	2	2081 to 2084	2063	2113
93713		Road38	Harrowsmith	Concrete	500	81.2	1985			$328.00	$470.00	$ 38,164	54%	3	3	1985	80	9	2034 to 2057	2065	
93715		Road38	Harrowsmith	Concrete	500	75.6	1985			$328.00	$470.00	$ 35,532	54%	3	3	1985	80	9	2034 to 2057	2065	
93717		Road38	Harrowsmith	Concrete	500	67.5	1985			$328.00	$470.00	$ 31,725	54%	3	3	1985	80	9	2034 to 2057	2065	
93720		Road38	Harrowsmith	Concrete	500	39.0	1985			$328.00	$470.00	$ 18,330	54%	3	3	1985	80	9	2034 to 2057	2065	
93721		Road38	Harrowsmith	Concrete	300	18.9	1985			$291.00	$350.00	$ 6,615	54%	3	2	1985	80	6	2058 to 2080	2065	
93722		Road38	Harrowsmith	Concrete	300	16.1	1985			$291.00	$350.00	$ 5,635	54%	3	2	1985	80	6	2058 to 2080	2065	
93915		Sydenham- Stage Coach Rd	Sydenham	HDPE	450	46.4	1986			$312.00	$450.00	$ 20,880	55%	3	3	1986	80	9	2034 to 2057	2066	
93917		Sydenham- Stage Coach Rd	Sydenham	HDPE	450	65.2	1986			$312.00	$450.00	$ 29,340	55%	3	3	1986	80	9	2034 to 2057	2066	
93971		Sydenham- Wheatley St	Sydenham	HDPE	450	6.7	1986			$312.00	$450.00	$ 3,015	55%	3	3	1986	80	9	2034 to 2057	2066	
93999		Sydenham- Point Rd	Sydenham	HDPE	450	21.7	1986			$312.00	$450.00	$ 9,765	55%	3	3	1986	80	9	2034 to 2057	2066	
93956		Sydenham- George St	Sydenham	HDPE	450	9.5	1986			$312.00	$450.00	$ 4,275	55%	3	3	1986	80	9	2034 to 2057	2066	
93960		Sydenham- Sydenham Mill St	Sydenham	HDPE	450	71.5	1986			$312.00	$450.00	$ 32,175	55%	3	3	1986	80	9	2034 to 2057	2066	
93964		Sydenham- Sydenham Mill St	Sydenham	HDPE	450	36.3	1986			$312.00	$450.00	$ 16,335	55%	3	3	1986	80	9	2034 to 2057	2066	
93938		Sydenham- Sydenham William St	Sydenham	HDPE	525	21.2	1986			$328.00	$470.00	$ 9,964	55%	3	3	1986	80	9	2034 to 2057	2066	
93957		Sydenham- Sydenham Mill St	Sydenham	HDPE	525	25.4	1986			$328.00	$470.00	$ 11,938	55%	3	3	1986	80	9	2034 to 2057	2066	
93958		Sydenham- Sydenham Mill St	Sydenham	HDPE	525	66.0	1986			$328.00	$470.00	$ 31,020	55%	3	3	1986	80	9	2034 to 2057	2066	
93962		Sydenham- Sydenham Mill St	Sydenham	PVC	525	74.6	1986			$328.00	$470.00	$ 35,062	55%	3	3	1986	80	9	2034 to 2057	2066	
93989		Sydenham- Wheatley St	Sydenham	HDPE	600	19.6	1986			$332.00	$530.00	$ 10,388	55%	3	3	1986	80	9	2034 to 2057	2066	
93937		Sydenham- Sydenham William St	Sydenham	HDPE	600	23.6	1986			$332.00	$530.00	$ 12,508	55%	3	3	1986	80	9	2034 to 2057	2066	
93949		Sydenham- George St (Bank Outlet)	Sydenham	PVC	600	62.6	1986			$332.00	$530.00	$ 33,178	55%	3	3	1986	80	9	2034 to 2057	2066	
93984		Sydenham- Wheatley St	Sydenham	PVC	600	59.6	1986			$332.00	$530.00	$ 31,588	55%	3	3	1986	80	9	2034 to 2057	2066	
94000		Sydenham- Point Rd	Sydenham	PVC	600	21.7	1986			$332.00	$530.00	$ 11,501	55%	3	3	1986	80	9	2034 to 2057	2066	
93945		Sydenham- Amelia St	Sydenham	HDPE	300	3.6	1986			$291.00	$350.00	$ 1,260	55%	3	2	1986	80	6	2058 to 2080	2066	
93967		Sydenham- Sydenham Mill St	Sydenham	HDPE	300	13.0	1986			$291.00	$350.00	$ 4,550	55%	3	2	1986	80	6	2058 to 2080	2066	
93972		Sydenham- Wheatley St	Sydenham	HDPE	300	11.1	1986			$291.00	$350.00	$ 3,885	55%	3	2	1986	80	6	2058 to 2080	2066	
93977		Sydenham- Wheatley St	Sydenham	HDPE	300	10.9	1986			$291.00	$350.00	$ 3,815	55%	3	2	1986	80	6	2058 to 2080	2066	
93988		Sydenham- Wheatley St	Sydenham	HDPE	300	2.0	1986			$291.00	$350.00	$ 700	55%	3	2	1986	80	6	2058 to 2080	2066	
93925		Sydenham- Sydenham William St	Sydenham	HDPE	300	6.7	1986			$291.00	$350.00	$ 2,345	55%	3	2	1986	80	6	2058 to 2080	2066	
93943		Sydenham- Sydenham William St	Sydenham	HDPE	300	6.3	1986			$291.00	$350.00	$ 2,205	55%	3	2	1986	80	6	2058 to 2080	2066	
93944		Sydenham- Sydenham William St	Sydenham	HDPE	300	3.7	1986			$291.00	$350.00	$ 1,295	55%	3	2	1986	80	6	2058 to 2080	2066	
93952		Sydenham- Sydenham William St	Sydenham	PVC	300	37.1	1986			$291.00	$350.00	$ 12,985	55%	3	2	1986	80	6	2058 to 2080	2066	
93953		Sydenham- Sydenham William St	Sydenham	PVC	300	8.0	1986			$291.00	$350.00	$ 2,800	55%	3	2	1986	80	6	2058 to 2080	2066	
93954		Sydenham- Sydenham William St	Sydenham	PVC	300	54.5	1986			$291.00	$350.00	$ 19,075	55%	3	2	1986	80	6	2058 to 2080	2066	
93918		Sydenham- Stage Coach Rd	Sydenham	PVC	300	8.2	1986			$291.00	$350.00	$ 2,870	55%	3	2	1986	80	6	2058 to 2080	2066	
93968		Sydenham- Sydenham Mill St	Sydenham	PVC	300	7.8	1986			$291.00	$350.00	$ 2,730	55%	3	2	1986	80	6	2058 to 2080	2066	
93969		Sydenham- Sydenham Mill St	Sydenham	PVC	300	44.8	1986			$291.00	$350.00	$ 15,680	55%	3	2	1986	80	6	2058 to 2080	2066	
93983		Sydenham- Wheatley St	Sydenham	PVC	300	3.2	1986			$291.00	$350.00	$ 1,120	55%	3	2	1986	80	6	2058 to 2080	2066	
93985		Sydenham- Wheatley St	Sydenham	PVC	300	4.2	1986			$291.00	$350.00	$ 1,470	55%	3	2	1986	80	6	2058 to 2080	2066	
93986		Sydenham- Wheatley St	Sydenham	PVC	300	7.9	1986			$291.00	$350.00	$ 2,765	55%	3	2	1986	80	6	2058 to 2080	2066	
93950		Sydenham- George St	Sydenham	PVC	300	124.3	1986			$291.00	$350.00	$ 43,505	55%	3	2	1986	80	6	2058 to 2080	2066	
93951		Sydenham- George St	Sydenham	PVC	300	7.5	1986			$291.00	$350.00	$ 2,625	55%	3	2	1986	80	6	2058 to 2080	2066	
93955		Sydenham- Sydenham William St	Sydenham	PVC	300	6.8	1986			$291.00	$350.00	$ 2,380	55%	3	2	1986	80	6	2058 to 2080	2066	
93959		Sydenham- Sydenham Mill St	Sydenham	PVC	300	7.8	1986			$291.00	$350.00	$ 2,730	55%	3	2	1986	80	6	2058 to 2080	2066	

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
93961		Sydenham- Sydenham Mill St	Sydenham	PVC	300	7.5	1986			$291.00	$350.00	$ 2,625	55%	3	2	1986	80	6	2058 to 2080	2066	
93963		Sydenham- Sydenham Mill St	Sydenham	PVC	300	7.5	1986			$291.00	$350.00	$ 2,625	55%	3	2	1986	80	6	2058 to 2080	2066	
93965		Sydenham- Sydenham Mill St	Sydenham	PVC	300	13.4	1986			$291.00	$350.00	$ 4,690	55%	3	2	1986	80	6	2058 to 2080	2066	
93923		Sydenham- Sydenham Church St	Sydenham	HDPE	375	9.2	1986			$295.00	$420.00	$ 3,864	55%	3	2	1986	80	6	2058 to 2080	2066	
93931		Sydenham- Brewery St	Sydenham	HDPE	375	77.3	1986			$295.00	$420.00	$ 32,466	55%	3	2	1986	80	6	2058 to 2080	2066	
93932		Sydenham- Brewery St	Sydenham	HDPE	375	6.7	1986			$295.00	$420.00	$ 2,814	55%	3	2	1986	80	6	2058 to 2080	2066	
93947		Sydenham- Amelia St	Sydenham	HDPE	375	9.8	1986			$295.00	$420.00	$ 4,116	55%	3	2	1986	80	6	2058 to 2080	2066	
93919		Sydenham- Stage Coach Rd	Sydenham	HDPE	375	113.6	1986			$295.00	$420.00	$ 47,712	55%	3	2	1986	80	6	2058 to 2080	2066	
93933		Sydenham- Brewery St	Sydenham	HDPE	375	2.3	1986			$295.00	$420.00	$ 966	55%	3	2	1986	80	6	2058 to 2080	2066	
93922		Sydenham- Sydenham Church St	Sydenham	HDPE	375	9.3	1986			$295.00	$420.00	$ 3,906	55%	3	2	1986	80	6	2058 to 2080	2066	
93924		Sydenham- Sydenham William St	Sydenham	HDPE	375	10.3	1986			$295.00	$420.00	$ 4,326	55%	3	2	1986	80	6	2058 to 2080	2066	
93926		Sydenham- Sydenham William St	Sydenham	HDPE	375	2.3	1986			$295.00	$420.00	$ 966	55%	3	2	1986	80	6	2058 to 2080	2066	
93927		Sydenham- Sydenham William St	Sydenham	HDPE	375	67.5	1986			$295.00	$420.00	$ 28,350	55%	3	2	1986	80	6	2058 to 2080	2066	
93928		Sydenham- Sydenham William St	Sydenham	HDPE	375	19.8	1986			$295.00	$420.00	$ 8,316	55%	3	2	1986	80	6	2058 to 2080	2066	
93929		Sydenham- Sydenham William St	Sydenham	HDPE	375	11.7	1986			$295.00	$420.00	$ 4,914	55%	3	2	1986	80	6	2058 to 2080	2066	
93930		Sydenham- Brewery St	Sydenham	HDPE	375	1.9	1986			$295.00	$420.00	$ 798	55%	3	2	1986	80	6	2058 to 2080	2066	
93934		Sydenham- Brewery St	Sydenham	HDPE	375	100.8	1986			$295.00	$420.00	$ 42,336	55%	3	2	1986	80	6	2058 to 2080	2066	
93935		Sydenham- Brewery St	Sydenham	HDPE	375	6.8	1986			$295.00	$420.00	$ 2,856	55%	3	2	1986	80	6	2058 to 2080	2066	
93936		Sydenham- Brewery St	Sydenham	HDPE	375	12.5	1986			$295.00	$420.00	$ 5,250	55%	3	2	1986	80	6	2058 to 2080	2066	
93939		Sydenham- Sydenham William St	Sydenham	HDPE	375	16.8	1986			$295.00	$420.00	$ 7,056	55%	3	2	1986	80	6	2058 to 2080	2066	
93940		Sydenham- Sydenham William St	Sydenham	HDPE	375	42.4	1986			$295.00	$420.00	$ 17,808	55%	3	2	1986	80	6	2058 to 2080	2066	
93941		Sydenham- Sydenham William St	Sydenham	HDPE	375	8.5	1986			$295.00	$420.00	$ 3,570	55%	3	2	1986	80	6	2058 to 2080	2066	
93946		Sydenham- Amelia St	Sydenham	HDPE	375	79.8	1986			$295.00	$420.00	$ 33,516	55%	3	2	1986	80	6	2058 to 2080	2066	
93948		Sydenham- Amelia St	Sydenham	HDPE	375	17.2	1986			$295.00	$420.00	$ 7,224	55%	3	2	1986	80	6	2058 to 2080	2066	
93970		Sydenham- Sydenham Mill St	Sydenham	PVC	250	3.2	1986			$291.00	$350.00	$ 1,120	55%	3	1	1986	80	3	2081 to 2084	2066	
94413		Inverary- Latimer Rd	Inverary	PVC	300	15.8	1993			$291.00	$350.00	$ 5,530	64%	2	2	1993	80	4	2058 to 2080	2073	
94414		Inverary- Latimer Rd	Inverary	HDPE	375	11.6	1993			$295.00	$420.00	$ 4,872	64%	2	2	1993	80	4	2058 to 2080	2073	
94810		Battersea- Battersea Rd	Battersea	HDPE	650	3.9	2004			$337.00	$530.00	$ 2,067	78%	2	4	2004	80	8	2034 to 2057	2084	
94811		Battersea- Battersea Rd	Battersea	HDPE	650	7.2	2004			$337.00	$530.00	$ 3,816	78%	2	4	2004	80	8	2034 to 2057	2084	
94818		Battersea- Battersea Rd	Battersea	Concrete	500	14.8	2004			$328.00	$470.00	$ 6,956	78%	2	3	2004	80	6	2058 to 2080	2084	
94813		Battersea- Battersea Rd	Battersea	PVC	500	2.0	2004			$328.00	$470.00	$ 940	78%	2	3	2004	80	6	2058 to 2080	2084	
94800		Battersea- Battersea Rd	Battersea	HDPE	525	6.9	2004			$328.00	$470.00	$ 3,243	78%	2	3	2004	80	6	2058 to 2080	2084	
94801		Battersea- Battersea Rd	Battersea	HDPE	525	7.1	2004			$328.00	$470.00	$ 3,337	78%	2	3	2004	80	6	2058 to 2080	2084	
94812		Battersea- Battersea Rd	Battersea	PVC	600	14.0	2004			$332.00	$530.00	$ 7,420	78%	2	3	2004	80	6	2058 to 2080	2084	
94817		Battersea- Battersea Rd	Battersea	Concrete	300	17.8	2004			$291.00	$350.00	$ 6,230	78%	2	2	2004	80	4	2058 to 2080	2084	
94807		Battersea- Battersea Rd	Battersea	PVC	300	7.2	2004			$291.00	$350.00	$ 2,520	78%	2	2	2004	80	4	2058 to 2080	2084	
94809		Battersea- Battersea Rd	Battersea	HDPE	375	7.8	2004			$295.00	$420.00	$ 3,276	78%	2	2	2004	80	4	2058 to 2080	2084	
94808		Battersea- Battersea Rd	Battersea	PVC	400	107.0	2004			$312.00	$450.00	$ 48,150	78%	2	2	2004	80	4	2058 to 2080	2084	
94803		Battersea- Battersea Rd	Battersea	PVC	400	7.9	2004			$312.00	$450.00	$ 3,555	78%	2	2	2004	80	4	2058 to 2080	2084	
94204		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	525	19.4	2012			$328.00	$470.00	$ 9,118	88%	1	3	2012	80	3	2081 to 2084	2092	
94205		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	525	18.0	2012			$328.00	$470.00	$ 8,460	88%	1	3	2012	80	3	2081 to 2084	2092	
94206		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	525	7.0	2012			$328.00	$470.00	$ 3,290	88%	1	3	2012	80	3	2081 to 2084	2092	
94207		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	525	6.9	2012			$328.00	$470.00	$ 3,243	88%	1	3	2012	80	3	2081 to 2084	2092	
94209		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	525	17.7	2012			$328.00	$470.00	$ 8,319	88%	1	3	2012	80	3	2081 to 2084	2092	
94216		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	525	26.2	2012			$328.00	$470.00	$ 12,314	88%	1	3	2012	80	3	2081 to 2084	2092	
94217		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	525	34.6	2012			$328.00	$470.00	$ 16,262	88%	1	3	2012	80	3	2081 to 2084	2092	
94210		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	600	12.9	2012			$332.00	$530.00	$ 6,837	88%	1	3	2012	80	3	2081 to 2084	2092	
94212		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	600	35.3	2012			$332.00	$530.00	$ 18,709	88%	1	3	2012	80	3	2081 to 2084	2092	
94213		Perth Road- Perth Road	Perth Road Village	HDPE	600	22.9	2012			$332.00	$530.00	$ 12,137	88%	1	3	2012	80	3	2081 to 2084	2092	
94211		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	600	24.7	2012			$332.00	$530.00	$ 13,091	88%	1	3	2012	80	3	2081 to 2084	2092	
94200		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	300	12.3	2012			$291.00	$350.00	$ 4,305	88%	1	2	2012	80	2	2081 to 2084	2092	
94201		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	300	25.5	2012			$291.00	$350.00	$ 8,925	88%	1	2	2012	80	2	2081 to 2084	2092	
94203		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	300	5.7	2012			$291.00	$350.00	$ 1,995	88%	1	2	2012	80	2	2081 to 2084	2092	
94208		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	300	17.3	2012			$291.00	$350.00	$ 6,055	88%	1	2	2012	80	2	2081 to 2084	2092	
94227		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	300	9.0	2012			$291.00	$350.00	$ 3,150	88%	1	2	2012	80	2	2081 to 2084	2092	
94202		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	300	20.8	2012			$291.00	$350.00	$ 7,280	88%	1	2	2012	80	2	2081 to 2084	2092	
94214		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	300	29.3	2012			$291.00	$350.00	$ 10,255	88%	1	2	2012	80	2	2081 to 2084	2092	
94215		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	300	18.1	2012			$291.00	$350.00	$ 6,335	88%	1	2	2012	80	2	2081 to 2084	2092	
94224		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	375	23.2	2012			$295.00	$420.00	$ 9,744	88%	1	2	2012	80	2	2081 to 2084	2092	
94225		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	375	5.6	2012			$295.00	$420.00	$ 2,352	88%	1	2	2012	80	2	2081 to 2084	2092	
94226		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	375	8.6	2012			$295.00	$420.00	$ 3,612	88%	1	2	2012	80	2	2081 to 2084	2092	
94218		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	375	35.4	2012			$295.00	$420.00	$ 14,868	88%	1	2	2012	80	2	2081 to 2084	2092	
94219		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	375	58.2	2012			$295.00	$420.00	$ 24,444	88%	1	2	2012	80	2	2081 to 2084	2092	
94220		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	375	4.6	2012			$295.00	$420.00	$ 1,932	88%	1	2	2012	80	2	2081 to 2084	2092	
94221		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	375	9.4	2012			$295.00	$420.00	$ 3,948	88%	1	2	2012	80	2	2081 to 2084	2092	
94222		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	375	13.6	2012			$295.00	$420.00	$ 5,712	88%	1	2	2012	80	2	2081 to 2084	2092	
94223		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	375	13.5	2012			$295.00	$420.00	$ 5,670	88%	1	2	2012	80	2	2081 to 2084	2092	
94832		Batersea- Wellington St	Battersea	HDPE	525	6.0	2013			$328.00	$470.00	$ 2,820	89%	1	3	2013	80	3	2081 to 2084	2093	
94830		Batersea- Wellington St	Battersea	PVC	525	26.1	2013			$328.00	$470.00	$ 12,267	89%	1	3	2013	80	3	2081 to 2084	2093	
94831		Batersea- Wellington St	Battersea	PVC	525	7.4	2013			$328.00	$470.00	$ 3,478	89%	1	3	2013	80	3	2081 to 2084	2093	
94828		Batersea- Wellington St	Battersea	PVC	600	34.2	2013			$332.00	$530.00	$ 18,126	89%	1	3	2013	80	3	2081 to 2084	2093	
94838		Batersea- Water St	Battersea	HDPE	300	26.8	2013			$291.00	$350.00	$ 9,380	89%	1	2	2013	80	2	2081 to 2084	2093	
94835		Battersea- Battersea Cross St	Battersea	PVC	300	41.2	2013			$291.00	$350.00	$ 14,420	89%	1	2	2013	80	2	2081 to 2084	2093	
94837		Batersea- Wellington St	Battersea	PVC	300	7.5	2013			$291.00	$350.00	$ 2,625	89%	1	2	2013	80	2	2081 to 2084	2093	

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
94826		Battsea- Battersea Water St	Battersea	PVC	300	20.3	2013			$291.00	$350.00	$ 7,105	89%	1	2	2013	80	2	2081 to 2084	2093	
94827		Battsea- Battersea Water St	Battersea	PVC	300	7.5	2013			$291.00	$350.00	$ 2,625	89%	1	2	2013	80	2	2081 to 2084	2093	
94829		Batersea- Wellington St	Battersea	PVC	300	8.7	2013			$291.00	$350.00	$ 3,045	89%	1	2	2013	80	2	2081 to 2084	2093	
94836		Batersea- Wellington St	Battersea	PVC	300	13.8	2013			$291.00	$350.00	$ 4,830	89%	1	2	2013	80	2	2081 to 2084	2093	
94834		Batersea- Wellington St	Battersea	PVC	400	34.0	2013			$312.00	$450.00	$ 15,300	89%	1	2	2013	80	2	2081 to 2084	2093	
94825		Battsea- Battersea Water St	Battersea	PVC	400	8.3	2013			$312.00	$450.00	$ 3,735	89%	1	2	2013	80	2	2081 to 2084	2093	
93900		Sydenham- Rutledge Rd	Sydenham	HDPE	750	82.2	2014			$337.00	$690.00	$ 56,718	90%	1	4	2014	80	4	2058 to 2080	2094	
93908		Sydenham- Rutledge Rd	Sydenham	PVC	450	2.3	2014			$312.00	$450.00	$ 1,035	90%	1	3	2014	80	3	2081 to 2084	2094	
93901		Sydenham- Rutledge Rd	Sydenham	PVC	450	2.0	2014			$312.00	$450.00	$ 900	90%	1	3	2014	80	3	2081 to 2084	2094	
93911		Sydenham- Rutledge Rd	Sydenham	PVC	450	2.2	2014			$312.00	$450.00	$ 990	90%	1	3	2014	80	3	2081 to 2084	2094	
93903		Sydenham- Rutledge Rd	Sydenham	PVC	450	2.8	2014			$312.00	$450.00	$ 1,260	90%	1	3	2014	80	3	2081 to 2084	2094	
93992		Sydenham- Rutledge Rd	Sydenham	HDPE	525	45.7	2014			$328.00	$470.00	$ 21,479	90%	1	3	2014	80	3	2081 to 2084	2094	
93991		Sydenham- Rutledge Rd	Sydenham	HDPE	600	16.5	2014			$332.00	$530.00	$ 8,745	90%	1	3	2014	80	3	2081 to 2084	2094	
93905		Sydenham- Rutledge Rd	Sydenham	PVC	600	75.6	2014			$332.00	$530.00	$ 40,068	90%	1	3	2014	80	3	2081 to 2084	2094	
93910		Sydenham- Rutledge Rd	Sydenham	PVC	600	97.2	2014			$332.00	$530.00	$ 51,516	90%	1	3	2014	80	3	2081 to 2084	2094	
93913		Sydenham- Rutledge Rd	Sydenham	PVC	600	91.6	2014			$332.00	$530.00	$ 48,548	90%	1	3	2014	80	3	2081 to 2084	2094	
93914		Sydenham- Rutledge Rd	Sydenham	PVC	600	14.6	2014			$332.00	$530.00	$ 7,738	90%	1	3	2014	80	3	2081 to 2084	2094	
93920		Sydenham- Rutledge Rd	Sydenham	HDPE	300	2.3	2014			$291.00	$350.00	$ 805	90%	1	2	2014	80	2	2081 to 2084	2094	
93990		Sydenham- Rutledge Rd	Sydenham	HDPE	300	2.0	2014			$291.00	$350.00	$ 700	90%	1	2	2014	80	2	2081 to 2084	2094	
93993		Sydenham- Rutledge Rd	Sydenham	HDPE	300	11.5	2014			$291.00	$350.00	$ 4,025	90%	1	2	2014	80	2	2081 to 2084	2094	
93995		Sydenham- Rutledge Rd	Sydenham	HDPE	300	31.9	2014			$291.00	$350.00	$ 11,165	90%	1	2	2014	80	2	2081 to 2084	2094	
93996		Sydenham- Rutledge Rd	Sydenham	HDPE	300	7.6	2014			$291.00	$350.00	$ 2,660	90%	1	2	2014	80	2	2081 to 2084	2094	
93921		Sydenham- Rutledge Rd	Sydenham	HDPE	300	126.0	2014			$291.00	$350.00	$ 44,100	90%	1	2	2014	80	2	2081 to 2084	2094	
93907		Sydenham- Rutledge Rd	Sydenham	PVC	300	19.9	2014			$291.00	$350.00	$ 6,965	90%	1	2	2014	80	2	2081 to 2084	2094	
93902		Sydenham- Rutledge Rd	Sydenham	PVC	300	8.1	2014			$291.00	$350.00	$ 2,835	90%	1	2	2014	80	2	2081 to 2084	2094	
93904		Sydenham- Rutledge Rd	Sydenham	PVC	300	8.1	2014			$291.00	$350.00	$ 2,835	90%	1	2	2014	80	2	2081 to 2084	2094	
93906		Sydenham- Rutledge Rd	Sydenham	PVC	300	4.1	2014			$291.00	$350.00	$ 1,435	90%	1	2	2014	80	2	2081 to 2084	2094	
93909		Sydenham- Rutledge Rd	Sydenham	PVC	300	7.9	2014			$291.00	$350.00	$ 2,765	90%	1	2	2014	80	2	2081 to 2084	2094	
93912		Sydenham- Rutledge Rd	Sydenham	PVC	300	7.9	2014			$291.00	$350.00	$ 2,765	90%	1	2	2014	80	2	2081 to 2084	2094	
93994		Sydenham- Rutledge Rd	Sydenham	HDPE	375	47.5	2014			$295.00	$420.00	$ 19,950	90%	1	2	2014	80	2	2081 to 2084	2094	
93000	44065	Bellrock- Main St	Bellrock	HDPE	450	4.4	2015			$312.00	$450.00	$ 1,980	91%	1	3	2015	80	3	2081 to 2084	2095	
93007	44065	Bellrock- Main St	Bellrock	HDPE	450	41.1	2015			$312.00	$450.00	$ 18,495	91%	1	3	2015	80	3	2081 to 2084	2095	
93003	44065	Bellrock- Main St	Bellrock	HDPE	525	93.9	2015			$328.00	$470.00	$ 44,133	91%	1	3	2015	80	3	2081 to 2084	2095	
93005	44065	Bellrock- Main St	Bellrock	HDPE	300	6.6	2015			$291.00	$350.00	$ 2,310	91%	1	2	2015	80	2	2081 to 2084	2095	
93015	40435	Bellrock- Bellrock Mill St	Bellrock	HDPE	300	11.7	2015			$291.00	$350.00	$ 4,095	91%	1	2	2015	80	2	2081 to 2084	2095	
93016	40435	Bellrock- Bellrock Mill St	Bellrock	HDPE	300	20.5	2015			$291.00	$350.00	$ 7,175	91%	1	2	2015	80	2	2081 to 2084	2095	
93017	40435	Bellrock- Bellrock Mill St	Bellrock	HDPE	300	25.5	2015			$291.00	$350.00	$ 8,925	91%	1	2	2015	80	2	2081 to 2084	2095	
93018	40435	Bellrock- Bellrock Mill St	Bellrock	PVC	300	5.8	2015			$291.00	$350.00	$ 2,030	91%	1	2	2015	80	2	2081 to 2084	2095	
93001	44065	Bellrock- Main St	Bellrock	HDPE	375	10.1	2015			$295.00	$420.00	$ 4,242	91%	1	2	2015	80	2	2081 to 2084	2095	
93002	44065	Bellrock- Main St	Bellrock	HDPE	375	0.9	2015			$295.00	$420.00	$ 378	91%	1	2	2015	80	2	2081 to 2084	2095	
93004	44065	Bellrock- Main St	Bellrock	HDPE	375	5.9	2015			$295.00	$420.00	$ 2,478	91%	1	2	2015	80	2	2081 to 2084	2095	
93006	44065	Bellrock- Main St	Bellrock	HDPE	375	87.6	2015			$295.00	$420.00	$ 36,792	91%	1	2	2015	80	2	2081 to 2084	2095	
93008	44065	Bellrock- Main St	Bellrock	HDPE	375	3.2	2015			$295.00	$420.00	$ 1,344	91%	1	2	2015	80	2	2081 to 2084	2095	
93009	44065	Bellrock- Main St	Bellrock	HDPE	375	6.1	2015			$295.00	$420.00	$ 2,562	91%	1	2	2015	80	2	2081 to 2084	2095	
93010	44065	Bellrock- Main St	Bellrock	HDPE	375	8.6	2015			$295.00	$420.00	$ 3,612	91%	1	2	2015	80	2	2081 to 2084	2095	
93011	44065	Bellrock- Main St	Bellrock	HDPE	375	25.6	2015			$295.00	$420.00	$ 10,752	91%	1	2	2015	80	2	2081 to 2084	2095	
93012	44065	Bellrock- Main St	Bellrock	HDPE	375	4.8	2015			$295.00	$420.00	$ 2,016	91%	1	2	2015	80	2	2081 to 2084	2095	
93013	44065	Bellrock- Main St	Bellrock	HDPE	375	9.6	2015			$295.00	$420.00	$ 4,032	91%	1	2	2015	80	2	2081 to 2084	2095	
93014	44065	Bellrock- Main St	Bellrock	HDPE	375	8.4	2015			$295.00	$420.00	$ 3,528	91%	1	2	2015	80	2	2081 to 2084	2095	
93019	40435	Bellrock- Bellrock Mill St	Bellrock	PVC	250	6.4	2015			$291.00	$350.00	$ 2,240	91%	1	1	2015	80	1	2084	2095	
93700		Harrowsmith- Kingston Rd	Harrowsmith	HDPE	300	18.0	2017			$291.00	$350.00	$ 6,300	94%	1	2	2017	80	2	2081 to 2084	2097	
93748		Robinson Road	Harrowsmith	HDPE	300	25.5	2017			$291.00	$350.00	$ 8,925	94%	1	2	2017	80	2	2081 to 2084	2097	
93749		Robinson Road	Harrowsmith	HDPE	300	7.5	2017			$291.00	$350.00	$ 2,625	94%	1	2	2017	80	2	2081 to 2084	2097	
93750		Robinson Road	Harrowsmith	HDPE	300	19.2	2017			$291.00	$350.00	$ 6,720	94%	1	2	2017	80	2	2081 to 2084	2097	
94030		Sydenham- Portland Ave	Sydenham	HDPE	1050	8.3	2018			$337.00	$975.00	$ 8,093	95%	1	5	2018	80	5	2058 to 2080	2098	
94039		Sydenham- Portland Ave	Sydenham	HDPE	1050	5.7	2018			$337.00	$975.00	$ 5,558	95%	1	5	2018	80	5	2058 to 2080	2098	
94041		Sydenham- Portland Ave	Sydenham	HDPE	1050	12.1	2018			$337.00	$975.00	$ 11,798	95%	1	5	2018	80	5	2058 to 2080	2098	
94042		Sydenham- Portland Ave	Sydenham	HDPE	1050	26.9	2018			$337.00	$975.00	$ 26,228	95%	1	5	2018	80	5	2058 to 2080	2098	
94043		Sydenham- Portland Ave	Sydenham	HDPE	1050	38.4	2018			$337.00	$975.00	$ 37,440	95%	1	5	2018	80	5	2058 to 2080	2098	
93711		Road38	Harrowsmith	Concrete	500	44.6	2018			$328.00	$470.00	$ 20,962	95%	1	3	2018	80	3	2081 to 2084	2098	
94016		Sydenham- Bedford Rd	Sydenham	HDPE	525	8.6	2018			$328.00	$470.00	$ 4,042	95%	1	3	2018	80	3	2081 to 2084	2098	
94017		Sydenham- Bedford Rd	Sydenham	HDPE	525	53.3	2018			$328.00	$470.00	$ 25,051	95%	1	3	2018	80	3	2081 to 2084	2098	
93706		Road38	Harrowsmith	HDPE	600	33.3	2018			$332.00	$530.00	$ 17,649	95%	1	3	2018	80	3	2081 to 2084	2098	
93710		Road38	Harrowsmith	HDPE	600	26.7	2018			$332.00	$530.00	$ 14,151	95%	1	3	2018	80	3	2081 to 2084	2098	
94019		Sydenham- Bedford Rd	Sydenham	HDPE	600	20.8	2018			$332.00	$530.00	$ 11,024	95%	1	3	2018	80	3	2081 to 2084	2098	
94021		Sydenham- Bedford Rd	Sydenham	HDPE	600	74.4	2018			$332.00	$530.00	$ 39,432	95%	1	3	2018	80	3	2081 to 2084	2098	
94023		Sydenham- Bedford Rd	Sydenham	HDPE	600	131.6	2018			$332.00	$530.00	$ 69,748	95%	1	3	2018	80	3	2081 to 2084	2098	
94029		Sydenham- Bedford Rd	Sydenham	HDPE	600	69.8	2018			$332.00	$530.00	$ 36,994	95%	1	3	2018	80	3	2081 to 2084	2098	
93743		Harrowsmith- Road 38	Harrowsmith	HDPE	300	14.5	2018			$291.00	$350.00	$ 5,075	95%	1	2	2018	80	2	2081 to 2084	2098	
93704		Road38	Harrowsmith	HDPE	300	13.0	2018			$291.00	$350.00	$ 4,550	95%	1	2	2018	80	2	2081 to 2084	2098	
93705		Road38	Harrowsmith	HDPE	300	2.4	2018			$291.00	$350.00	$ 840	95%	1	2	2018	80	2	2081 to 2084	2098	
93707		Road38	Harrowsmith	HDPE	300	3.4	2018			$291.00	$350.00	$ 1,190	95%	1	2	2018	80	2	2081 to 2084	2098	
93708		Road38	Harrowsmith	HDPE	300	11.1	2018			$291.00	$350.00	$ 3,885	95%	1	2	2018	80	2	2081 to 2084	2098	
93709		Road38	Harrowsmith	HDPE	300	9.6	2018			$291.00	$350.00	$ 3,360	95%	1	2	2018	80	2	2081 to 2084	2098	

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
93744		Road38	Harrowsmith	HDPE	300	44.6	2018			$291.00	$350.00	$ 15,610	95%	1	2	2018	80	2	2081 to 2084	2098	
93745		Road38	Harrowsmith	HDPE	300	50.5	2018			$291.00	$350.00	$ 17,675	95%	1	2	2018	80	2	2081 to 2084	2098	
93746		Road38	Harrowsmith	HDPE	300	8.5	2018			$291.00	$350.00	$ 2,975	95%	1	2	2018	80	2	2081 to 2084	2098	
93747		Road38	Harrowsmith	HDPE	300	22.5	2018			$291.00	$350.00	$ 7,875	95%	1	2	2018	80	2	2081 to 2084	2098	
93751		Road38	Harrowsmith	HDPE	300	8.2	2018			$291.00	$350.00	$ 2,870	95%	1	2	2018	80	2	2081 to 2084	2098	
94018		Sydenham- Bedford Rd	Sydenham	PVC	300	2.5	2018			$291.00	$350.00	$ 875	95%	1	2	2018	80	2	2081 to 2084	2098	
94022		Sydenham- Bedford Rd	Sydenham	PVC	300	1.0	2018			$291.00	$350.00	$ 350	95%	1	2	2018	80	2	2081 to 2084	2098	
94006		Sydenham- Bedford Rd	Sydenham	HDPE	375	11.8	2018			$295.00	$420.00	$ 4,956	95%	1	2	2018	80	2	2081 to 2084	2098	
94010		Sydenham- Bedford Rd	Sydenham	HDPE	375	15.7	2018			$295.00	$420.00	$ 6,594	95%	1	2	2018	80	2	2081 to 2084	2098	
94028		Sydenham- Bedford Rd	Sydenham	HDPE	375	9.3	2018			$295.00	$420.00	$ 3,885	95%	1	2	2018	80	2	2081 to 2084	2098	
94032		Sydenham- Portland Ave	Sydenham	HDPE	375	56.0	2018			$295.00	$420.00	$ 23,520	95%	1	2	2018	80	2	2081 to 2084	2098	
94038		Sydenham- Portland Ave	Sydenham	HDPE	375	74.0	2018			$295.00	$420.00	$ 31,080	95%	1	2	2018	80	2	2081 to 2084	2098	
94044		Sydenham- Sydenham William St	Sydenham	HDPE	375	33.9	2018			$295.00	$420.00	$ 14,238	95%	1	2	2018	80	2	2081 to 2084	2098	
94045		Sydenham- Sydenham William St	Sydenham	HDPE	375	24.7	2018			$295.00	$420.00	$ 10,374	95%	1	2	2018	80	2	2081 to 2084	2098	
94035		Sydenham- Portland Ave	Sydenham	HDPE	375	60.8	2018			$295.00	$420.00	$ 25,536	95%	1	2	2018	80	2	2081 to 2084	2098	
94040		Sydenham- Portland Ave	Sydenham	HDPE	375	35.0	2018			$295.00	$420.00	$ 14,700	95%	1	2	2018	80	2	2081 to 2084	2098	
93752		Road38	Harrowsmith	HDPE	200	9.2	2018			$291.00	$320.00	$ 2,944	95%	1	1	2018	80	1	2084	2098	
93753		Road38	Harrowsmith	HDPE	200	9.2	2018			$291.00	$320.00	$ 2,944	95%	1	1	2018	80	1	2084	2098	
94008		Sydenham- Bedford Rd	Sydenham	HDPE	200	10.0	2018			$291.00	$320.00	$ 3,200	95%	1	1	2018	80	1	2084	2098	
94009		Sydenham- Bedford Rd	Sydenham	HDPE	200	5.9	2018			$291.00	$320.00	$ 1,888	95%	1	1	2018	80	1	2084	2098	
94014		Sydenham- Bedford Rd	Sydenham	HDPE	200	8.8	2018			$291.00	$320.00	$ 2,816	95%	1	1	2018	80	1	2084	2098	
94015		Sydenham- Bedford Rd	Sydenham	HDPE	200	67.1	2018			$291.00	$320.00	$ 21,472	95%	1	1	2018	80	1	2084	2098	
94025		Sydenham- Bedford Rd	Sydenham	HDPE	200	6.1	2018			$291.00	$320.00	$ 1,952	95%	1	1	2018	80	1	2084	2098	
94026		Sydenham- Bedford Rd	Sydenham	HDPE	200	2.2	2018			$291.00	$320.00	$ 704	95%	1	1	2018	80	1	2084	2098	
94027		Sydenham- Bedford Rd	Sydenham	HDPE	200	36.6	2018			$291.00	$320.00	$ 11,712	95%	1	1	2018	80	1	2084	2098	
94031		Sydenham- Portland Ave	Sydenham	HDPE	200	7.4	2018			$291.00	$320.00	$ 2,368	95%	1	1	2018	80	1	2084	2098	
94033		Sydenham- Portland Ave	Sydenham	HDPE	200	2.9	2018			$291.00	$320.00	$ 928	95%	1	1	2018	80	1	2084	2098	
94034		Sydenham- Portland Ave	Sydenham	HDPE	200	2.8	2018			$291.00	$320.00	$ 896	95%	1	1	2018	80	1	2084	2098	
94036		Sydenham- Portland Ave	Sydenham	HDPE	200	2.5	2018			$291.00	$320.00	$ 800	95%	1	1	2018	80	1	2084	2098	
94037		Sydenham- Portland Ave	Sydenham	HDPE	200	4.2	2018			$291.00	$320.00	$ 1,344	95%	1	1	2018	80	1	2084	2098	
94003		Sydenham- Bedford Rd	Sydenham	PVC	200	6.3	2018			$291.00	$320.00	$ 2,016	95%	1	1	2018	80	1	2084	2098	
94004		Sydenham- Bedford Rd	Sydenham	PVC	200	4.9	2018			$291.00	$320.00	$ 1,568	95%	1	1	2018	80	1	2084	2098	
94007		Sydenham- Bedford Rd	Sydenham	PVC	200	5.7	2018			$291.00	$320.00	$ 1,824	95%	1	1	2018	80	1	2084	2098	
94011		Sydenham- Bedford Rd	Sydenham	PVC	200	2.0	2018			$291.00	$320.00	$ 640	95%	1	1	2018	80	1	2084	2098	
94012		Sydenham- Bedford Rd	Sydenham	PVC	200	10.3	2018			$291.00	$320.00	$ 3,296	95%	1	1	2018	80	1	2084	2098	
94013		Sydenham- Bedford Rd	Sydenham	PVC	200	13.9	2018			$291.00	$320.00	$ 4,448	95%	1	1	2018	80	1	2084	2098	
94020		Sydenham- Bedford Rd	Sydenham	PVC	200	9.0	2018			$291.00	$320.00	$ 2,880	95%	1	1	2018	80	1	2084	2098	
94024		Sydenham- Bedford Rd	Sydenham	PVC	200	8.3	2018			$291.00	$320.00	$ 2,656	95%	1	1	2018	80	1	2084	2098	
94005		Sydenham- Bedford Rd	Sydenham	PVC	200	5.7	2018			$291.00	$320.00	$ 1,824	95%	1	1	2018	80	1	2084	2098	
94616		Sunbury- Battersea Rd	Sunbury	HDPE	525	21.3	2020			$328.00	$470.00	$ 10,011	98%	1	3	2020	80	3	2081 to 2084	2100	
94600		Sunbury- Battersea Rd	Sunbury	PVC	525	23.4	2020			$328.00	$470.00	$ 10,998	98%	1	3	2020	80	3	2081 to 2084	2100	
94601		Sunbury- Battersea Rd	Sunbury	PVC	525	8.1	2020			$328.00	$470.00	$ 3,807	98%	1	3	2020	80	3	2081 to 2084	2100	
94603		Sunbury- Battersea Rd	Sunbury	PVC	525	107.7	2020			$328.00	$470.00	$ 50,619	98%	1	3	2020	80	3	2081 to 2084	2100	
94619		Sunbury- Battersea Rd	Sunbury	HDPE	600	20.8	2020			$332.00	$530.00	$ 11,024	98%	1	3	2020	80	3	2081 to 2084	2100	
94613		Sunbury- Battersea Rd	Sunbury	PVC	600	4.6	2020			$332.00	$530.00	$ 2,438	98%	1	3	2020	80	3	2081 to 2084	2100	
94614		Sunbury- Battersea Rd	Sunbury	PVC	600	16	2020			$332.00	$530.00	$ 8,480	98%	1	3	2020	80	3	2081 to 2084	2100	
94615		Sunbury- Battersea Rd	Sunbury	PVC	600	21.5	2020			$332.00	$530.00	$ 11,395	98%	1	3	2020	80	3	2081 to 2084	2100	
94602		Sunbury- Battersea Rd	Sunbury	PVC	300	90.7	2020			$291.00	$350.00	$ 31,745	98%	1	2	2020	80	2	2081 to 2084	2100	
94604		Sunbury- Battersea Rd	Sunbury	PVC	300	7.7	2020			$291.00	$350.00	$ 2,695	98%	1	2	2020	80	2	2081 to 2084	2100	
94606		Sunbury- Battersea Rd	Sunbury	PVC	300	9.97	2020			$291.00	$350.00	$ 3,490	98%	1	2	2020	80	2	2081 to 2084	2100	
94608		Sunbury- Battersea Rd	Sunbury	PVC	300	9.18	2020			$291.00	$350.00	$ 3,213	98%	1	2	2020	80	2	2081 to 2084	2100	
94609		Sunbury- Battersea Rd	Sunbury	PVC	300	58.62	2020			$291.00	$350.00	$ 20,517	98%	1	2	2020	80	2	2081 to 2084	2100	
94610		Sunbury- Battersea Rd	Sunbury	PVC	300	8.96	2020			$291.00	$350.00	$ 3,136	98%	1	2	2020	80	2	2081 to 2084	2100	
94611		Sunbury- Battersea Rd	Sunbury	PVC	300	5.81	2020			$291.00	$350.00	$ 2,034	98%	1	2	2020	80	2	2081 to 2084	2100	
94612		Sunbury- Battersea Rd	Sunbury	PVC	300	5.81	2020			$291.00	$350.00	$ 2,034	98%	1	2	2020	80	2	2081 to 2084	2100	
94617		Sunbury- Battersea Rd	Sunbury	PVC	300	12.4	2020			$291.00	$350.00	$ 4,340	98%	1	2	2020	80	2	2081 to 2084	2100	
94618		Sunbury- Battersea Rd	Sunbury	PVC	300	12.6	2020			$291.00	$350.00	$ 4,410	98%	1	2	2020	80	2	2081 to 2084	2100	
94620		Sunbury- Battersea Rd	Sunbury	PVC	300	3	2020			$291.00	$350.00	$ 1,050	98%	1	2	2020	80	2	2081 to 2084	2100	
94605		Sunbury- Battersea Rd	Sunbury	PVC	375	73.67	2020			$295.00	$420.00	$ 30,941	98%	1	2	2020	80	2	2081 to 2084	2100	
94607		Sunbury- Battersea Rd	Sunbury	PVC	375	65.46	2020			$295.00	$420.00	$ 27,493	98%	1	2	2020	80	2	2081 to 2084	2100	
94621		Sunbury- Battersea Rd	Sunbury	HDPE	200	50	2020			$291.00	$320.00	$ 16,000	98%	1	1	2020	80	1	2084	2100	
PIPES TOTAL	302					10.7	km														
STRUCTURES																					
90502		Hartington- Road 38	Hartington	MH	1200		1973			$4,000.00	$6,200.00	$ 6,200.00	40%	3	3	1973	80	9	based on life cycle	2053	
90506		Hartington- Road 38	Hartington	MH	1200		1973			$4,000.00	$6,200.00	$ 6,200.00	40%	3	3	1973	80	9	based on life cycle	2053	
90503		Hartington- Road 38	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90504		Hartington- Road 38	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90505		Hartington- Road 38	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90507		Hartington- Road 38	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90508		Hartington- Road 38	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90509		Hartington- Road 38	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90510		Hartington- Road 38	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90514		Hartington- Holleford Rd	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90515		Hartington- Holleford Rd	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90516		Hartington- Holleford Rd	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
90517		Hartington- Boyce Rd	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90518		Hartington- Boyce Rd	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90519		Hartington- Boyce Rd	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90520		Hartington- Boyce Rd	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90521		Hartington- Boyce Rd	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90522		Hartington- Boyce Rd	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90500		Hartington- Boyce Rd	Hartington	DI	600 x 600		1973			$3,500.00	$5,400.00	$ 5,400.00	40%	3	1	1973	80	3	based on life cycle	2053	
90501		Hartington- Boyce Rd	Hartington	DI	600 x 600		1973			$3,500.00	$5,400.00	$ 5,400.00	40%	3	1	1973	80	3	based on life cycle	2053	
90511		Hartington- Road 38	Hartington	DI	600 x 600		1973			$3,500.00	$5,400.00	$ 5,400.00	40%	3	1	1973	80	3	based on life cycle	2053	
90512		Hartington- Holleford Rd	Hartington	DI	600 x 600		1973			$3,500.00	$5,400.00	$ 5,400.00	40%	3	1	1973	80	3	based on life cycle	2053	
90513		Hartington- Holleford Rd	Hartington	DI	600 x 600		1973			$3,500.00	$5,400.00	$ 5,400.00	40%	3	1	1973	80	3	based on life cycle	2053	
90201		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90204		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90206		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90210		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90216		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90218		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90224		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90226		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90228		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90229		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90232		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90234		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90238		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90239		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90241		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90242		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90245		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90250		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90254		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90257		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90260		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90212		Verona- Water St	Verona	MH	1200		1975			$4,000.00	$6,200.00	$ 6,200.00	43%	3	3	1975	80	9	based on life cycle	2055	
90213		Verona- Water St	Verona	MH	1200		1975			$4,000.00	$6,200.00	$ 6,200.00	43%	3	3	1975	80	9	based on life cycle	2055	
90215		Verona- Road 38	Verona	MH	1200		1975			$4,000.00	$6,200.00	$ 6,200.00	43%	3	3	1975	80	9	based on life cycle	2055	
90236		Verona- Road 38	Verona	MH	1200		1975			$4,000.00	$6,200.00	$ 6,200.00	43%	3	3	1975	80	9	based on life cycle	2055	
90202		Verona- Verona Sands Rd	Verona	DCB	1200 x 600		1975			$3,800.00	$5,800.00	$ 5,800.00	43%	3	2	1975	80	6	based on life cycle	2055	
90207		Verona- Road 38	Verona	DCB	1200 x 600		1975			$3,800.00	$5,800.00	$ 5,800.00	43%	3	2	1975	80	6	based on life cycle	2055	
90209		Verona- Walker St	Verona	DCB	1200 x 600		1975			$3,800.00	$5,800.00	$ 5,800.00	43%	3	2	1975	80	6	based on life cycle	2055	
90214		Verona- Water St	Verona	DCB	1200 x 600		1975			$3,800.00	$5,800.00	$ 5,800.00	43%	3	2	1975	80	6	based on life cycle	2055	
90219		Verona- Genge St	Verona	DCB	1200 x 600		1975			$3,800.00	$5,800.00	$ 5,800.00	43%	3	2	1975	80	6	based on life cycle	2055	
90220		Verona- Genge St	Verona	DCB	1200 x 600		1975			$3,800.00	$5,800.00	$ 5,800.00	43%	3	2	1975	80	6	based on life cycle	2055	
90225		Verona- Road 38	Verona	DCB	1200 x 600		1975			$3,800.00	$5,800.00	$ 5,800.00	43%	3	2	1975	80	6	based on life cycle	2055	
90233		Verona- Road 38	Verona	DCB	1200 x 600		1975			$3,800.00	$5,800.00	$ 5,800.00	43%	3	2	1975	80	6	based on life cycle	2055	
90237		Verona- Road 38	Verona	DCB	1200 x 600		1975			$3,800.00	$5,800.00	$ 5,800.00	43%	3	2	1975	80	6	based on life cycle	2055	
90247		Verona- Road 38	Verona	DCB	1200 x 600		1975			$3,800.00	$5,800.00	$ 5,800.00	43%	3	2	1975	80	6	based on life cycle	2055	
90200		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90203		Verona- Verona Sands Rd	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90205		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90208		Verona- Walker St	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90211		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90217		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90221		Verona- Bank St	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90222		Verona- Bank St	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90223		Verona- Water St	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90227		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90230		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90231		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90235		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90240		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90243		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90244		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90246		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90248		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90249		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90251		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90252		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90253		Carleton St	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90255		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90256		Carleton St	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90258		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90259		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90261		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90262		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90263		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90264		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90265		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90702		Harrowsmith- Kingston Rd	Harrowsmith	MH	1200		1985			$4,000.00	$6,200.00	$ 6,200.00	55%	3	3	1985	80	9	based on life cycle	2065	
90714		Harrowsmith- Road 38	Harrowsmith	MH	1200		1985			$4,000.00	$6,200.00	$ 6,200.00	55%	3	3	1985	80	9	based on life cycle	2065	
90730		Harrowsmith- Harrowsmith Rd	Harrowsmith	MH	1200		1985			$4,000.00	$6,200.00	$ 6,200.00	55%	3	3	1985	80	9	based on life cycle	2065	
90700		Harrowsmith- Kingston Rd	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
90701		Harrowsmith- Kingston Rd	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90703		Harrowsmith- Kingston Rd	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90708		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90709		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90710		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90711		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90712		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90713		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90715		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90716		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90717		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90720		Harrowsmith- Colebrook Rd	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90721		Harrowsmith- Colebrook Rd	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90722		Harrowsmith- Colebrook Rd	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90723		Harrowsmith- Colebrook Rd	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90724		Harrowsmith- Notre Dame St	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90725		Harrowsmith-Notre Dame St	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90726		Harrowsmith-Notre Dame St	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90727		Harrowsmith-Notre Dame St	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90728		Harrowsmith-Maria St	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90729		Harrowsmith-Maria St	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90731		Harrowsmith- Harrowsmith Rd	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90732		Harrowsmith- Harrowsmith Rd	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90733		Harrowsmith- Harrowsmith Rd	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90734		Harrowsmith- Notre Dame St	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90735		Harrowsmith- William St	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90736		Harrowsmith- William St	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90718		Harrowsmith- Road 38	Harrowsmith	DI	600 x 600		1985			$3,500.00	$5,400.00	$ 5,400.00	55%	3	1	1985	80	3	based on life cycle	2065	
90719		Harrowsmith- Road 38	Harrowsmith	DI	600 x 600		1985			$3,500.00	$5,400.00	$ 5,400.00	55%	3	1	1985	80	3	based on life cycle	2065	
90901		Sydenham- Rutledge Rd	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90903		Sydenham- Rutledge Rd	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90908		Sydenham- Rutledge Rd	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90911		Sydenham- Rutledge Rd	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90921		Sydenham- William St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90925		Sydenham- William St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90929		Sydenham- Brewery St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90932		Sydenham- Brewery St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90935		Sydenham- William St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90936		Sydenham- William St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90944		Sydenham- Amelia St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90947		Sydenham- George St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90948		Sydenham- George St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90954		Sydenham- Sydenham Mill St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90955		Sydenham- Sydenham Mill St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90956		Sydenham- Sydenham Mill St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90958		Sydenham- Sydenham Mill St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90960		Sydenham- Sydenham Mill St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90962		Sydenham- Sydenham Mill St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90963		Sydenham- Sydenham Mill St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90979		Sydenham- Wheatley St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90968		Sydenham- Wheatley St	Sydenham	MH	1200		1986			$4,000.00	$6,200.00	$ 6,200.00	56%	3	3	1986	80	9	based on life cycle	2066	
90981		Sydenham- Wheatley St	Sydenham	MH	1200		1986			$4,000.00	$6,200.00	$ 6,200.00	56%	3	3	1986	80	9	based on life cycle	2066	
90922		Sydenham- William St	Sydenham	DCB	1200 x 600		1986			$3,800.00	$5,800.00	$ 5,800.00	56%	3	2	1986	80	6	based on life cycle	2066	
90926		Sydenham- William St	Sydenham	DCB	1200 x 600		1986			$3,800.00	$5,800.00	$ 5,800.00	56%	3	2	1986	80	6	based on life cycle	2066	
90945		Sydenham- Amelia St	Sydenham	DCB	1200 x 600		1986			$3,800.00	$5,800.00	$ 5,800.00	56%	3	2	1986	80	6	based on life cycle	2066	
90946		Sydenham- Amelia St	Sydenham	DCB	1200 x 600		1986			$3,800.00	$5,800.00	$ 5,800.00	56%	3	2	1986	80	6	based on life cycle	2066	
90965		Sydenham- Sydenham Mill St	Sydenham	DCB	1200 x 600		1986			$3,800.00	$5,800.00	$ 5,800.00	56%	3	2	1986	80	6	based on life cycle	2066	
90974		Sydenham- Cross St	Sydenham	DCB	1200 x 600		1986			$3,800.00	$5,800.00	$ 5,800.00	56%	3	2	1986	80	6	based on life cycle	2066	
90998		Sydenahm- George St	Sydenham	DCB	1200 x 600		1986			$3,800.00	$5,800.00	$ 5,800.00	56%	3	2	1986	80	6	based on life cycle	2066	
90997		Sydenahm- George St	Sydenham	DCBMH	1500		1986			$7,500.00	$8,900.00	$ 8,900.00	56%	3	2	1986	80	6	based on life cycle	2066	
90902		Sydenham- Rutledge Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90904		Sydenham- Rutledge Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90907		Sydenham- Rutledge Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90909		Sydenham- Rutledge Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90912		Sydenham- Rutledge Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90914		Sydenham- Rutledge Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90915		Sydenham- Stage Coach Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90916		Sydenham- Stage Coach Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90917		Sydenham- Stage Coach Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90918		Sydenham- Stage Coach Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90919		Sydenham- Rutledge Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90920		Sydenham- Sydenham Church St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90923		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90924		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90927		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90928		Sydenham- Brewery St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90930		Sydenham- Brewery St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90931		Sydenham- Brewery St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90933		Sydenham- Brewery St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90934		Sydenham- Brewery St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90937		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
90938		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90939		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90942		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90943		Sydenham- Amelia St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90949		Sydenham- George St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90950		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90951		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90952		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90953		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90957		Sydenham- Sydenham Mill St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90959		Sydenham- Sydenham Mill St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90961		Sydenham- Sydenham Mill St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90964		Sydenham- Sydenham Mill St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90966		Sydenham- Sydenham Mill St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90967		Sydenham- Sydenham Mill St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90969		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90970		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90971		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90972		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90973		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90975		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90976		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90977		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90978		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90980		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90982		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90983		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90984		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90985		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90993		Sydenham- Point Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90994		Sydenham- Point Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90995		Sydenham- Point Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
91040		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90940		Sydenham- William St	Sydenham	DI	600 x 600		1986			$3,500.00	$5,400.00	$ 5,400.00	56%	3	1	1986	80	3	based on life cycle	2066	
90941		Sydenham- William St	Sydenham	DI	600 x 600		1986			$3,500.00	$5,400.00	$ 5,400.00	56%	3	1	1986	80	3	based on life cycle	2066	
90996		Sydenham- Point Rd	Sydenham	DI	600 x 600		1986			$3,500.00	$5,400.00	$ 5,400.00	56%	3	1	1986	80	3	based on life cycle	2066	
91400		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91401		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91402		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91403		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91404		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91405		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91406		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91407		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91409		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91410		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91411		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91412		Inverary- Latimer Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91227		Shales/Opp- Perth Rd	Perth Road Village	CB	600 x 600		1993			$2,200.00	$3,500.00	$ 3,500.00	65%	2	1	1993	80	2	based on life cycle	2073	
91228		Shales/Opp- Shales Rd	Perth Road Village	CB	600 x 600		1993			$2,200.00	$3,500.00	$ 3,500.00	65%	2	1	1993	80	2	based on life cycle	2073	
91229		Shales/Opp- Shales Rd	Perth Road Village	CB	600 x 600		1993			$2,200.00	$3,500.00	$ 3,500.00	65%	2	1	1993	80	2	based on life cycle	2073	
91230		Shales/Opp- Shales Rd	Perth Road Village	CB	600 x 600		1993			$2,200.00	$3,500.00	$ 3,500.00	65%	2	1	1993	80	2	based on life cycle	2073	
91231		Shales/Opp- Opinicon Rd	Perth Road Village	CB	600 x 600		1993			$2,200.00	$3,500.00	$ 3,500.00	65%	2	1	1993	80	2	based on life cycle	2073	
91232		Shales/Opp- Opinicon Rd	Perth Road Village	CB	600 x 600		1993			$2,200.00	$3,500.00	$ 3,500.00	65%	2	1	1993	80	2	based on life cycle	2073	
91413		Inverary- Latimer Rd	Inverary	CB	600 x 600		1993			$2,200.00	$3,500.00	$ 3,500.00	65%	2	1	1993	80	2	based on life cycle	2073	
91414		Inverary- Latimer Rd	Inverary	CB	600 x 600		1993			$2,200.00	$3,500.00	$ 3,500.00	65%	2	1	1993	80	2	based on life cycle	2073	
91408		Inverary- Perth Rd	Inverary	DI	600 x 600		1993			$3,500.00	$5,400.00	$ 5,400.00	65%	2	1	1993	80	2	based on life cycle	2073	
91817		Battersea- Battersea Rd	Battersea	CBMH	1200		2004			$4,000.00	$6,400.00	$ 6,400.00	79%	2	3	2004	80	6	based on life cycle	2084	
91818		Battersea- Battersea Rd	Battersea	CBMH	1200		2004			$4,000.00	$6,400.00	$ 6,400.00	79%	2	3	2004	80	6	based on life cycle	2084	
91821		Battersea- Battersea Rd	Battersea	CBMH	1200		2004			$4,000.00	$6,400.00	$ 6,400.00	79%	2	3	2004	80	6	based on life cycle	2084	
91822		Battersea- Battersea Rd	Battersea	CBMH	1200		2004			$4,000.00	$6,400.00	$ 6,400.00	79%	2	3	2004	80	6	based on life cycle	2084	
91800		Battersea- Battersea Rd	Battersea	DCB	1200 x 600		2004			$3,800.00	$5,800.00	$ 5,800.00	79%	2	2	2004	80	4	based on life cycle	2084	
91801		Battersea- Battersea Rd	Battersea	DCB	1200 x 600		2004			$3,800.00	$5,800.00	$ 5,800.00	79%	2	2	2004	80	4	based on life cycle	2084	
91802		Battersea- Battersea Rd	Battersea	DCB	1200 x 600		2004			$3,800.00	$5,800.00	$ 5,800.00	79%	2	2	2004	80	4	based on life cycle	2084	
91803		Battersea- Battersea Rd	Battersea	DCB	1200 x 600		2004			$3,800.00	$5,800.00	$ 5,800.00	79%	2	2	2004	80	4	based on life cycle	2084	
91810		Battersea- Battersea Rd	Battersea	DCB	1200 x 600		2004			$3,800.00	$5,800.00	$ 5,800.00	79%	2	2	2004	80	4	based on life cycle	2084	
91811		Battersea- Battersea Rd	Battersea	DCB	1200 x 600		2004			$3,800.00	$5,800.00	$ 5,800.00	79%	2	2	2004	80	4	based on life cycle	2084	
91812		Battersea- Battersea Rd	Battersea	DCB	1200 x 600		2004			$3,800.00	$5,800.00	$ 5,800.00	79%	2	2	2004	80	4	based on life cycle	2084	
91804		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91805		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91806		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91807		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91808		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91809		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91814		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91815		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91816		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91819		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91820		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91813		Battersea- Battersea Rd	Battersea	DI	600 x 600		2004			$3,500.00	$5,400.00	$ 5,400.00	79%	2	1	2004	80	2	based on life cycle	2084	
91823		Battersea- Battersea Water St	Battersea	CBMH	1200		2011			$4,000.00	$6,400.00	$ 6,400.00	88%	1	3	2011	80	3	based on life cycle	2091	

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
91824		Battersea- Battersea Water St	Battersea	CBMH	1200		2011			$4,000.00	$6,400.00	$ 6,400.00	88%	1	3	2011	80	3	based on life cycle	2091	
91825		Battersea- Battersea Water St	Battersea	CB	600 x 600		2011			$2,200.00	$3,500.00	$ 3,500.00	88%	1	1	2011	80	1	based on life cycle	2091	
91826		Battersea- Battersea Water St	Battersea	CB	600 x 600		2011			$2,200.00	$3,500.00	$ 3,500.00	88%	1	1	2011	80	1	based on life cycle	2091	
91836		Battersea-Water St	Battersea	DI	600 x 600		2011			$3,500.00	$5,400.00	$ 5,400.00	88%	1	1	2011	80	1	based on life cycle	2091	
91201		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91204		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91207		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91209		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91210		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91211		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91212		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91213		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91215		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91217		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91219		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91222		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91223		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91224		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91205		Perth Rd- Perth Rd Cres	Perth Road Village	MH	1200		2012			$4,000.00	$6,200.00	$ 6,200.00	89%	1	3	2012	80	3	based on life cycle	2092	
91216		Perth Rd- Perth Rd Cres	Perth Road Village	MH	1200		2012			$4,000.00	$6,200.00	$ 6,200.00	89%	1	3	2012	80	3	based on life cycle	2092	
90905		Sydenham- Rutledge Rd	Sydenham	DCB	1200 x 600		2012			$3,800.00	$5,800.00	$ 5,800.00	89%	1	2	2012	80	2	based on life cycle	2092	
91206		Perth Rd- Perth Rd Cres	Perth Road Village	DCBMH	1500		2012			$7,500.00	$8,900.00	$ 8,900.00	89%	1	2	2012	80	2	based on life cycle	2092	
91218		Perth Rd- Perth Rd Cres	Perth Road Village	DCBMH	1500		2012			$7,500.00	$8,900.00	$ 8,900.00	89%	1	2	2012	80	2	based on life cycle	2092	
91200		Perth Rd- Perth Rd Cres	Perth Road Village	CB	600 x 600		2012			$2,200.00	$3,500.00	$ 3,500.00	89%	1	1	2012	80	1	based on life cycle	2092	
91203		Perth Rd- Perth Rd Cres	Perth Road Village	CB	600 x 600		2012			$2,200.00	$3,500.00	$ 3,500.00	89%	1	1	2012	80	1	based on life cycle	2092	
90906		Sydenham- Rutledge Rd	Sydenham	DI	600 x 600		2012			$3,500.00	$5,400.00	$ 5,400.00	89%	1	1	2012	80	1	based on life cycle	2092	
91202		Perth Rd- Perth Rd Cres	Perth Road Village	DI	600 x 600		2012			$3,500.00	$5,400.00	$ 5,400.00	89%	1	1	2012	80	1	based on life cycle	2092	
91208		Perth Rd- Perth Rd Cres	Perth Road Village	DI	600 x 600		2012			$3,500.00	$5,400.00	$ 5,400.00	89%	1	1	2012	80	1	based on life cycle	2092	
91214		Perth Rd- Perth Rd Cres	Perth Road Village	DI	600 x 600		2012			$3,500.00	$5,400.00	$ 5,400.00	89%	1	1	2012	80	1	based on life cycle	2092	
91220		Perth Rd- Perth Rd Cres	Perth Road Village	DI	600 x 600		2012			$3,500.00	$5,400.00	$ 5,400.00	89%	1	1	2012	80	1	based on life cycle	2092	
91221		Perth Rd- Perth Rd Cres	Perth Road Village	DI	600 x 600		2012			$3,500.00	$5,400.00	$ 5,400.00	89%	1	1	2012	80	1	based on life cycle	2092	
91225		Perth Rd- Perth Rd Cres	Perth Road Village	DI	600 x 600		2012			$3,500.00	$5,400.00	$ 5,400.00	89%	1	1	2012	80	1	based on life cycle	2092	
91226		Perth Rd- Perth Rd Cres	Perth Road Village	DI	600 x 600		2012			$3,500.00	$5,400.00	$ 5,400.00	89%	1	1	2012	80	1	based on life cycle	2092	
91827		Private Yard	Battersea	CBMH	1200		2013			$4,000.00	$6,400.00	$ 6,400.00	90%	1	3	2013	80	3	based on life cycle	2093	
91828		Battersea- Wellington St	Battersea	CBMH	1200		2013			$4,000.00	$6,400.00	$ 6,400.00	90%	1	3	2013	80	3	based on life cycle	2093	
91832		Battersea- Wellington St	Battersea	CBMH	1200		2013			$4,000.00	$6,400.00	$ 6,400.00	90%	1	3	2013	80	3	based on life cycle	2093	
91834		Battersea- Wellington St	Battersea	DCB	1200 x 600		2013			$3,800.00	$5,800.00	$ 5,800.00	90%	1	2	2013	80	2	based on life cycle	2093	
91829		Battersea- Wellington St	Battersea	CB	600 x 600		2013			$2,200.00	$3,500.00	$ 3,500.00	90%	1	1	2013	80	1	based on life cycle	2093	
91830		Private Yard	Battersea	CB	600 x 600		2013			$2,200.00	$3,500.00	$ 3,500.00	90%	1	1	2013	80	1	based on life cycle	2093	
91831		Private Yard	Battersea	CB	600 x 600		2013			$2,200.00	$3,500.00	$ 3,500.00	90%	1	1	2013	80	1	based on life cycle	2093	
91835		Battersea- Wellington St	Battersea	CB	600 x 600		2013			$2,200.00	$3,500.00	$ 3,500.00	90%	1	1	2013	80	1	based on life cycle	2093	
91833		Battersea- Battersea Cross St	Battersea	DI	600 x 600		2013			$3,500.00	$5,400.00	$ 5,400.00	90%	1	1	2013	80	1	based on life cycle	2093	
90986		Sydenahm- Rutledge Rd	Sydenham	CBMH	1500		2014			$4,000.00	$6,400.00	$ 6,400.00	91%	1	3	2014	80	3	based on life cycle	2094	
90988		Sydenahm- Rutledge Rd	Sydenham	CBMH	1200		2014			$4,000.00	$6,400.00	$ 6,400.00	91%	1	3	2014	80	3	based on life cycle	2094	
90900		Sydenham- Rutledge Rd	Sydenham	MH	1200		2014			$4,000.00	$6,200.00	$ 6,200.00	91%	1	3	2014	80	3	based on life cycle	2094	
90910		Sydenham- Rutledge Rd	Sydenham	MH	1200		2014			$4,000.00	$6,200.00	$ 6,200.00	91%	1	3	2014	80	3	based on life cycle	2094	
90913		Sydenham- Rutledge Rd	Sydenham	DCB	1200 x 600		2014			$3,800.00	$5,800.00	$ 5,800.00	91%	1	2	2014	80	2	based on life cycle	2094	
90987		Sydenahm- Rutledge Rd	Sydenham	CB	600 x 600		2014			$2,200.00	$3,500.00	$ 3,500.00	91%	1	1	2014	80	1	based on life cycle	2094	
90989		Sydenahm- Rutledge Rd	Sydenham	CB	600 x 600		2014			$2,200.00	$3,500.00	$ 3,500.00	91%	1	1	2014	80	1	based on life cycle	2094	
90990		Sydenahm- Rutledge Rd	Sydenham	CB	600 x 600		2014			$2,200.00	$3,500.00	$ 3,500.00	91%	1	1	2014	80	1	based on life cycle	2094	
90991		Sydenahm- Rutledge Rd	Sydenham	CB	600 x 600		2014			$2,200.00	$3,500.00	$ 3,500.00	91%	1	1	2014	80	1	based on life cycle	2094	
90992		Sydenahm- Rutledge Rd	Sydenham	CB	600 x 600		2014			$2,200.00	$3,500.00	$ 3,500.00	91%	1	1	2014	80	1	based on life cycle	2094	
90003		Bellrock- Main St	Bellrock	CBMH	1200		2015			$4,000.00	$6,400.00	$ 6,400.00	93%	1	3	2015	80	3	based on life cycle	2095	
90006		Bellrock- Main St	Bellrock	CBMH	1200		2015			$4,000.00	$6,400.00	$ 6,400.00	93%	1	3	2015	80	3	based on life cycle	2095	
90011		Bellrock- Main St	Bellrock	MH	1200		2015			$4,000.00	$6,200.00	$ 6,200.00	93%	1	3	2015	80	3	based on life cycle	2095	
90001		Bellrock- Main St	Bellrock	DCB	1200 x 600		2015			$3,800.00	$5,800.00	$ 5,800.00	93%	1	2	2015	80	2	based on life cycle	2095	
90002		Bellrock- Main St	Bellrock	DCB	1200 x 600		2015			$3,800.00	$5,800.00	$ 5,800.00	93%	1	2	2015	80	2	based on life cycle	2095	
90008		Bellrock- Main St	Bellrock	DCB	1200 x 600		2015			$3,800.00	$5,800.00	$ 5,800.00	93%	1	2	2015	80	2	based on life cycle	2095	
90009		Bellrock- Main St	Bellrock	DCBMH	1800		2015			$7,500.00	$8,900.00	$ 8,900.00	93%	1	2	2015	80	2	based on life cycle	2095	
90004		Bellrock- Main St	Bellrock	CB	600 x 600		2015			$2,200.00	$3,500.00	$ 3,500.00	93%	1	1	2015	80	1	based on life cycle	2095	
90005		Bellrock- Main St	Bellrock	CB	600 x 600		2015			$2,200.00	$3,500.00	$ 3,500.00	93%	1	1	2015	80	1	based on life cycle	2095	
90012		Bellrock- Mill St	Bellrock	CB	600 x 600		2015			$2,200.00	$3,500.00	$ 3,500.00	93%	1	1	2015	80	1	based on life cycle	2095	
90013		Bellrock- Mill St	Bellrock	CB	600 x 600		2015			$2,200.00	$3,500.00	$ 3,500.00	93%	1	1	2015	80	1	based on life cycle	2095	
90014		Bellrock- Mill St	Bellrock	CB	600 x 600		2015			$2,200.00	$3,500.00	$ 3,500.00	93%	1	1	2015	80	1	based on life cycle	2095	
90015		Bellrock- Mill St	Bellrock	CB	600 x 600		2015			$2,200.00	$3,500.00	$ 3,500.00	93%	1	1	2015	80	1	based on life cycle	2095	
90016		Bellrock- Leveque Rd	Bellrock	CB	600 x 600		2015			$2,200.00	$3,500.00	$ 3,500.00	93%	1	1	2015	80	1	based on life cycle	2095	
90017		Bellrock- Mill St	Bellrock	CB	600 x 600		2015			$2,200.00	$3,500.00	$ 3,500.00	93%	1	1	2015	80	1	based on life cycle	2095	
90018		Bellrock- Mill St	Bellrock	CB	600 x 600		2015			$2,200.00	$3,500.00	$ 3,500.00	93%	1	1	2015	80	1	based on life cycle	2095	
90010		Bellrock- Main St	Bellrock	DI	600 x 600		2015			$3,500.00	$5,400.00	$ 5,400.00	93%	1	1	2015	80	1	based on life cycle	2095	
90705		Harrowsmith- Road 38	Harrowsmith	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
90744		Harrowsmith- Robinson Rd	Harrowsmith	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
90749		Harrowsmith- Road 38	Harrowsmith	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
90999		Sydenham- Portland Ave	Sydenham	CBMH	1800		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
91012		Sydenham- Bedford Rd	Sydenham	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
91013		Sydenham- Bedford Rd	Sydenham	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
91015		Sydenham- Bedford Rd	Sydenham	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
91017		Sydenham- Bedford Rd	Sydenham	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
91019		Sydenham- Bedford Rd	Sydenham	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
91021		Sydenham- Bedford Rd	Sydenham	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
91023		Sydenham- Bedford Rd	Sydenham	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
91028		Sydenham- Bedford Rd	Sydenham	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
91029		Sydenham- Bedford Rd	Sydenham	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
91032		Sydenham- Portland Ave	Sydenham	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
91001		Sydenham- George St	Sydenham	MH	1200		2018			$4,000.00	$6,200.00	$ 6,200.00	96%	1	3	2018	80	3	based on life cycle	2098	
91035		Sydenham- Portland Ave	Sydenham	MH	1200		2018			$4,000.00	$6,200.00	$ 6,200.00	96%	1	3	2018	80	3	based on life cycle	2098	
91038		Sydenham- Portland Ave	Sydenham	MH	1200		2018			$4,000.00	$6,200.00	$ 6,200.00	96%	1	3	2018	80	3	based on life cycle	2098	
91039		Sydenham- Portland Ave	Sydenham	MH	1800		2018			$4,000.00	$6,200.00	$ 6,200.00	96%	1	3	2018	80	3	based on life cycle	2098	
90704		Harrowsmith- Wilton Rd	Harrowsmith	DCB	1200 x 600		2018			$3,800.00	$5,800.00	$ 5,800.00	96%	1	2	2018	80	2	based on life cycle	2098	
90737		Harrowsmith- Road 38	Harrowsmith	DCB	1200 x 600		2018			$3,800.00	$5,800.00	$ 5,800.00	96%	1	2	2018	80	2	based on life cycle	2098	
90741		Harrowsmith- Road 38	Harrowsmith	DCB	1200 x 600		2018			$3,800.00	$5,800.00	$ 5,800.00	96%	1	2	2018	80	2	based on life cycle	2098	
90748		Harrowsmith- Road 38	Harrowsmith	DCB	1200 x 600		2018			$3,800.00	$5,800.00	$ 5,800.00	96%	1	2	2018	80	2	based on life cycle	2098	
90742		Harrowsmith- Wilton Rd	Harrowsmith	DCBMH	1200 x 600		2018			$7,500.00	$8,900.00	$ 8,900.00	96%	1	2	2018	80	2	based on life cycle	2098	
91030		Sydenham- Bedford Rd	Sydenham	DCBMH	1800		2018			$7,500.00	$8,900.00	$ 8,900.00	96%	1	2	2018	80	2	based on life cycle	2098	
90706		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
90707		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
90738		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
90739		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
90743		Harrowsmith- Robinson Rd	Harrowsmith	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
90745		Harrowsmith- Robinson Rd	Harrowsmith	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
90746		Harrowsmith- Wilton Rd	Harrowsmith	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
90747		Harrowsmith- Wilton Rd	Harrowsmith	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91000		Sydenham- George St	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91003		Sydenham- Beford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91004		Sydenham- Portland Ave	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91005		Sydenham- Portland Ave	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91007		Sydenham- Bedford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91008		Sydenham- Bedford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91009		Sydenham- Bedford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91014		Sydenham- Bedford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91016		Sydenham- Bedford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91020		Sydenham- Bedford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91024		Sydenham- Bedford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91025		Sydenham- Bedford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91026		Sydenham- Bedford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91027		Sydenham- Bedford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91033		Sydenham- Portland Ave	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91034		Sydenham- Portland Ave	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91036		Sydenham- Portland Ave	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91037		Sydenham- Portland Ave	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
90740		Harrowsmith- Road 38	Harrowsmith	DI	600 x 600		2018			$3,500.00	$5,400.00	$ 5,400.00	96%	1	1	2018	80	1	based on life cycle	2098	
91006		Sydenham- Bedford Rd	Sydenham	DI	600 x 600		2018			$3,500.00	$5,400.00	$ 5,400.00	96%	1	1	2018	80	1	based on life cycle	2098	
91010		Sydenham- Bedford Rd	Sydenham	DI	600 x 600		2018			$3,500.00	$5,400.00	$ 5,400.00	96%	1	1	2018	80	1	based on life cycle	2098	
91011		Sydenham- Bedford Rd	Sydenham	DI	600 x 600		2018			$3,500.00	$5,400.00	$ 5,400.00	96%	1	1	2018	80	1	based on life cycle	2098	
91018		Sydenham- Bedford Rd	Sydenham	DI	600 x 600		2018			$3,500.00	$5,400.00	$ 5,400.00	96%	1	1	2018	80	1	based on life cycle	2098	
91022		Sydenham- Bedford Rd	Sydenham	DI	600 x 600		2018			$3,500.00	$5,400.00	$ 5,400.00	96%	1	1	2018	80	1	based on life cycle	2098	
91608		Sunbury- Battersea Rd	Sunbury	CBMH	1200		2020			$4,000.00	$6,400.00	$ 6,400.00	99%	1	3	2020	80	3	based on life cycle	2100	
91613		Sunbury- Battersea Rd	Sunbury	CBMH	1200		2020			$4,000.00	$6,400.00	$ 6,400.00	99%	1	3	2020	80	3	based on life cycle	2100	
91614		Sunbury- Battersea Rd	Sunbury	CBMH	1200		2020			$4,000.00	$6,400.00	$ 6,400.00	99%	1	3	2020	80	3	based on life cycle	2100	
91615		Sunbury- Battersea Rd	Sunbury	CBMH	1200		2020			$4,000.00	$6,400.00	$ 6,400.00	99%	1	3	2020	80	3	based on life cycle	2100	
91600		Sunbury- Battersea Rd	Sunbury	DCB	1200 x 600		2020			$3,800.00	$5,800.00	$ 5,800.00	99%	1	2	2020	80	2	based on life cycle	2100	
91603		Sunbury- Battersea Rd	Sunbury	DCB	1200 x 600		2020			$3,800.00	$5,800.00	$ 5,800.00	99%	1	2	2020	80	2	based on life cycle	2100	
91605		Sunbury- Battersea Rd	Sunbury	DCB	1200 x 600		2020			$3,800.00	$5,800.00	$ 5,800.00	99%	1	2	2020	80	2	based on life cycle	2100	
91607		Sunbury- Battersea Rd	Sunbury	DCB	1200 x 600		2020			$3,800.00	$5,800.00	$ 5,800.00	99%	1	2	2020	80	2	based on life cycle	2100	
91612		Sunbury- Battersea Rd	Sunbury	DCB	1200 x 600		2020			$3,800.00	$5,800.00	$ 5,800.00	99%	1	2	2020	80	2	based on life cycle	2100	
91616		Sunbury- Battersea Rd	Sunbury	DCB	1200 x 600		2020			$3,800.00	$5,800.00	$ 5,800.00	99%	1	2	2020	80	2	based on life cycle	2100	
91601		Sunbury- Battersea Rd	Sunbury	DCBMH	1500		2020			$7,500.00	$8,900.00	$ 8,900.00	99%	1	2	2020	80	2	based on life cycle	2100	
91602		Sunbury- Battersea Rd	Sunbury	DCBMH	1500		2020			$7,500.00	$8,900.00	$ 8,900.00	99%	1	2	2020	80	2	based on life cycle	2100	
91604		Sunbury- Battersea Rd	Sunbury	DCBMH	1500		2020			$7,500.00	$8,900.00	$ 8,900.00	99%	1	2	2020	80	2	based on life cycle	2100	
91606		Sunbury- Battersea Rd	Sunbury	DCBMH	1500		2020			$7,500.00	$8,900.00	$ 8,900.00	99%	1	2	2020	80	2	based on life cycle	2100	
91611		Sunbury- Battersea Rd	Sunbury	DCBMH	1500		2020			$7,500.00	$8,900.00	$ 8,900.00	99%	1	2	2020	80	2	based on life cycle	2100	
91609		Sunbury- Battersea Rd	Sunbury	CB	600 x 600		2020			$2,200.00	$3,500.00	$ 3,500.00	99%	1	1	2020	80	1	based on life cycle	2100	
91617		Sunbury- Battersea Rd	Sunbury	CB	600 x 600		2020			$2,200.00	$3,500.00	$ 3,500.00	99%	1	1	2020	80	1	based on life cycle	2100	
91618		Sunbury- Battersea Rd	Sunbury	CB	600 x 600		2020			$2,200.00	$3,500.00	$ 3,500.00	99%	1	1	2020	80	1	based on life cycle	2100	
STORMWATER MANAGEMENT ASSETS																					
90000		Bellrock- Main St	Bellrock	Stormceptor	1800		2015				$40,345.00	$ 55,000.00	88%	1	5	2015	50	5	based on life cycle	2065	2115
90007		Bellrock- Main St	Bellrock	Stormceptor	1500		2015				$37,750.00	$ 50,000.00	88%	1	5	2015	50	5	based on life cycle	2065	2115
91002		Sydenham- Portland Ave	Sydenham	Stormceptor	2400		2018				$43,367.00	$ 65,000.00	94%	1	5	2018	50	5	based on life cycle	2068	2118
91610		Sunbury- Battersea Rd	Sunbury	Stormceptor	1800		2020				$32,283.00	$ 55,000.00	98%	1	5	2020	50	5	based on life cycle	2070	2120
CULVERTS <3m																					
64009		Culvert #9 (Devil Lake Rd)					1960					$ 40,321.63						6			
64004		Latimer Road Culvert					1960					$ 154,730.14						3			
64002		Moreland-Dixon Culvert					1970					$ 216,359.95						8			
63030		Bear Creek Culvert					2009					$ 435,998.07						8			
63240		Bunker Hill Road					2012					$ 100,804.07						3			
63260		Green Bay Road Culvert					2013					$ 138,229.97						3			
64010		Culvert #10 (James Wilson)					2013					$ 67,202.71						3			
63100		Otter Lake Culvert					2016					$ 380,269.00						3			
63420		Burnt Hills Rd. Boss Marsh Culvert					2019					$ 414,362.08						3			
64008		Hinchenbrooke Road N Culvert					2020					$ 190,918.00						3			
63430		Stafford Lane Culvert					2021					$ 321,243.61						3			

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
64005		North Shore Road					2022					$ 304,829.00						3			
64001		Perth Road Culvert					2014					$ 189,750.00						4			
64007		Cul #7 (Westport Rd at Wolfe Lk)					2016					$ 236,029.03						4			
PIPES AND STRUCTURES TOTAL												$ 10,194,159									

Township of South Frontenac
Asset Management Plan Update
Core Assets – December 2023

Executive Summary

The Township of South Frontenac is updating its 2016 Asset Management Plan (AMP) to align with the Township's strategic asset management policy and to also comply with the new regulations guiding municipalities under Ontario Regulation 588/17 – Asset Management Planning for Municipal Infrastructure. This December 2023 update specifically provides reporting on the Core Asset groups that include hard surfaced roads, large bridges and culverts, drinking water and stormwater drainage assets.

The core assets may be found in the following sections:

- Section 3.0 – Transportation (Roads and Bridges)
- Section 4.0 - Drinking Water System
- Section 5.0 - Stormwater Management

Each section of the AMP sets out the following information:

- A summary of the asset inventory in the category
- The average age of the assets in the category, determined by assessing the average age of components of the assets
- The replacement cost of the assets in each service area
- The condition rating systems and overall condition of the assets
- Data sources for the AMP records and update
- Technical and community levels of service benchmarking as required to meet the requirements of O Reg 588/17; and
- A description of the lifecycle strategies for each Core Asset group.

As of the end of 2022, the current replacement value of the Township's Core Asset group was approximately $335 million dollars.

Figure EX.1 provides an outline of the overall core asset cost distribution and Figure EX.2 provides a summary for the overall condition ratings for the reporting group.

Figure EX.1 – Overall Core Asset Cost Distribution

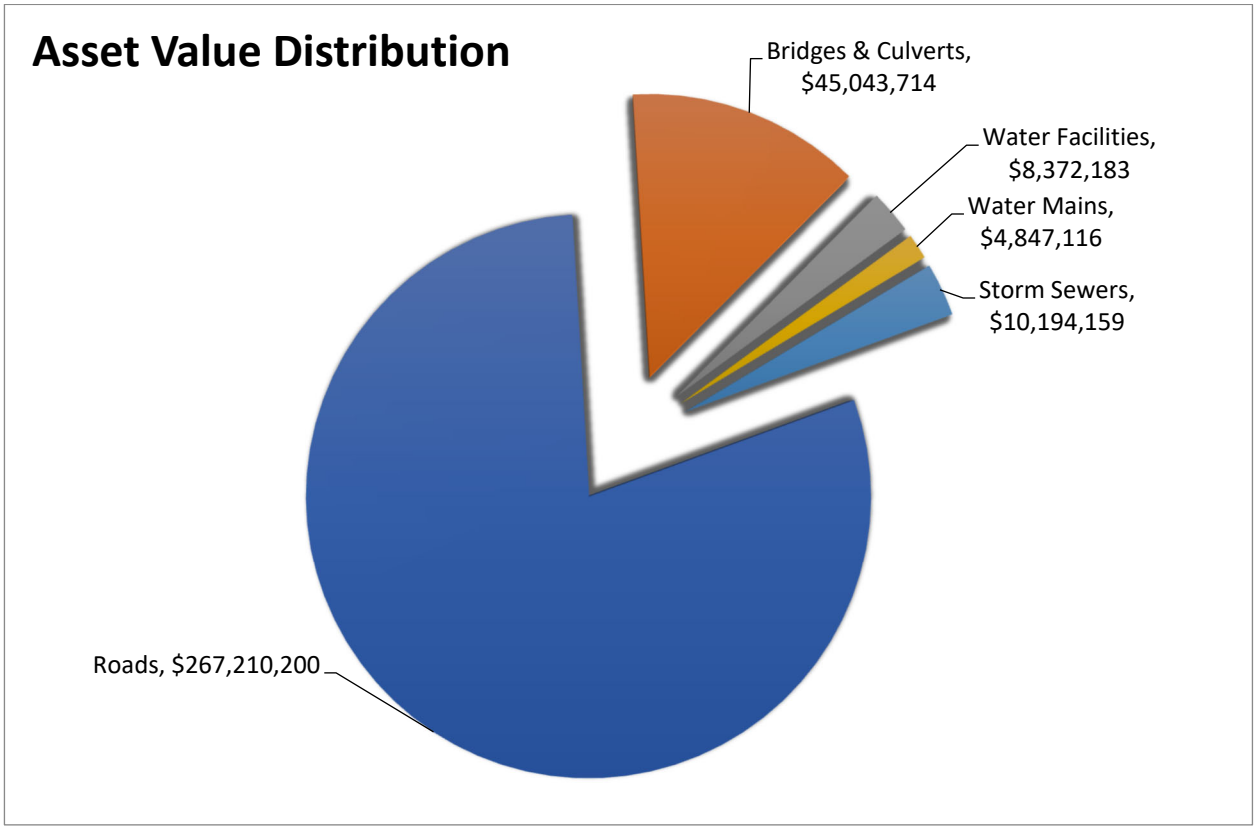
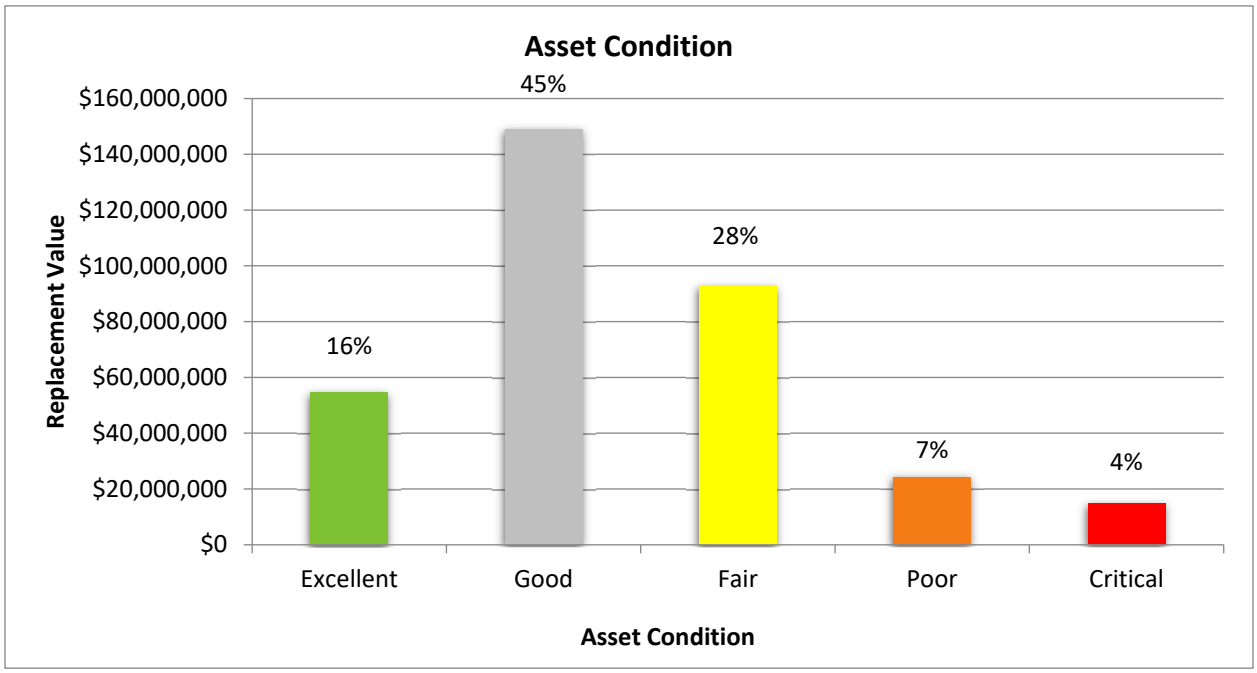


Figure EX.2 – Overall Core Asset Condition

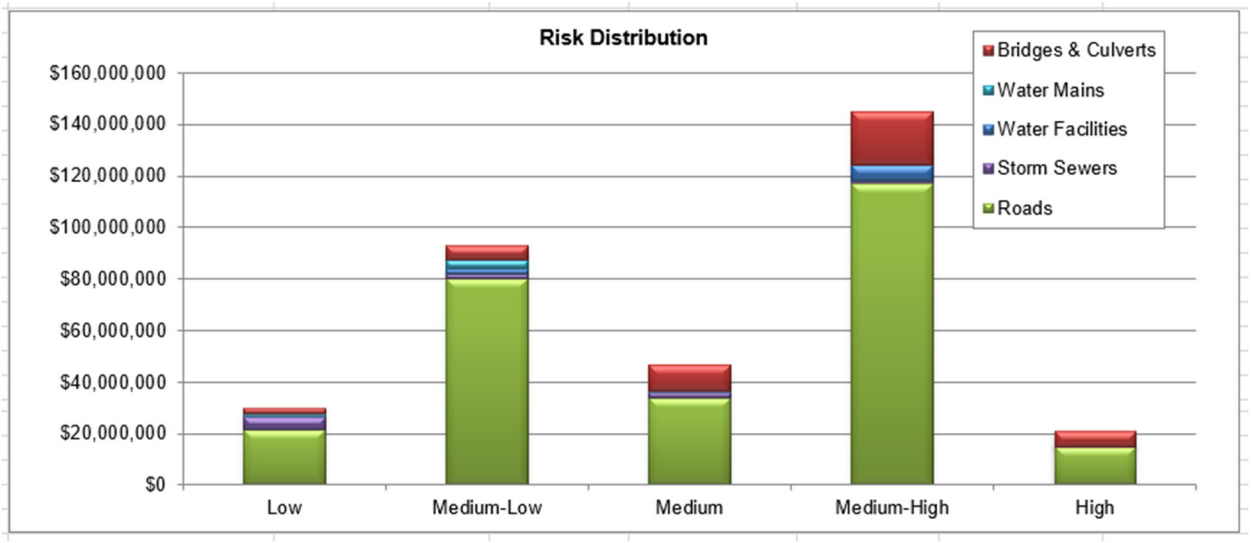


Like most municipalities across Ontario, a portion of the assets are in poor or very poor condition. These assets should be addressed on a priority basis using a risk-based

approach which is currently incorporated into the Core Asset Management Plan. Figure EX.3 below provided a summary of the risk distribution for each of the service areas and includes a summary in the bar graph below.

Figure EX.3 – Overall Core Asset Risk Distribution

			Risk Distribution				
	Replacement Cost	Distribution	Low	Medium-Low	Medium	Medium-High	High
Roads	$267,210,200	80%	$21,315,100	$79,860,350	$33,817,450	$117,278,800	$14,938,500
Bridges & Culverts	$45,043,714	13%	$2,205,000	$5,584,004	$10,371,860	$20,733,650	$6,149,200
Water Facilities	$8,372,183	2%	$0	$2,021,433	$0	$6,350,750	$0
Water Mains	$4,847,116	1%	$1,105,258	$3,389,453	$352,404	$0	$0
Storm Sewers	$10,194,159	3%	$5,090,291	$2,102,327	$2,151,997	$802,693	$46,851
Total	$335,667,371	100%	$29,715,649	$92,957,566	$46,693,711	$145,165,893	$21,134,551
% of Total			8.9%	27.7%	13.9%	43.2%	6.3%



Based on a 10-year forecast and looking at assets on a harmonized standard of replacement the current Municipal Tax Levy is sufficient at this time to finance forecasted expenditures in the current year, for tax supported assets. In the near short term, increases in the infrastructure levy to support growth and increased costs will be required. Strategies such as preventative maintenance and enhanced rehabilitation work will be key to sustainability when developing future Capital plans for budgeting. By taking a longer-term view, over the next 100 years, the Tax Supported Capital Levy needs to be reviewed on a consistent basis to finance Core Asset expenditures.

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1.0 Introduction

On January 1st, 2018, the Province of Ontario passed Ontario Regulation 588/17 – Asset Management Planning for Municipal Infrastructure under the Infrastructure for Jobs and Prosperity Act, 2015. This regulation set out various requirements for municipal asset management planning to help municipalities determine infrastructure needs and to set a framework to guide infrastructure planning and investment decisions.

Under the framework of the regulation each municipality is required to prepare its first strategic asset management policy by July 1, 2019. The policy addresses a framework of twelve separate components found within the regulation and is updated once every five years. On June 18th, 2019, Council met the first milestone of the regulation and adopted its first Strategic Asset Management Policy for the Township of South Frontenac. A copy of the plan is available for viewing on the Township's website.

On July 1st, 2022, O Reg 588/17 lays out the next major milestone in asset management when municipalities will be required to prepare an asset management plan in respect to its core municipal infrastructure assets.

1.1 Purpose of the Plan

The 2023 Asset Management Plan Update – Core Assets (AMP) aligns with the Township's Strategic Asset Management Policy and further serves to meet the requirements of the next phase of Ontario Regulation 588/17. Core assets defined under the regulation for this phase of the AMP update include:

- Water assets that relate to the collection, production, treatment, storage, or distribution of water,
- Wastewater asset that relates to the collection, transmission, treatment, or disposal of wastewater, including any wastewater asset that from time to time manages stormwater,
- Stormwater management asset that relates to the collection, transmission, retention, infiltration, control or disposal of stormwater,
- Road, or
- Bridge or Culvert

1.2 Alignment with Other Township Policies

The 2023 Asset Management Plan Update – Core Assets was reviewed and compiled internally by Township staff. The following documents were included in the review process and incorporated through the development of the current update:

- Township of South Frontenac Official Plan (2003)
- Township of South Frontenac Strategic Plan 2023 - 2026
- Municipal Budgets and other Financial Documents
- Development Charges Bylaw 2019-48 (2019)
- Sydenham Water Financial Plan

- O. Reg. 239/02 – Minimum Maintenance Standards for Municipal Highways

The Township's continued use of asset management software has helped guide the municipality in decision-making processes that are both timely and effective in optimizing the lifecycles of major assets. This software currently manages assets on a like for like basis however and does not currently incorporate major upgrades or growth-related needs. Township staff are continuing to utilize these platforms for managing a growing inventory of new assets as we move into the next phase of the regulation.

1.3 Strategic Plan 2023 – 2026

On December 5th, 2023, Township Council passed their 2023-2026 Strategic Plan. The plan updates the Vision ,Mission and Values for the Corporation and establishes strategic pillars for Sustainable Long-Term Prosperity, Municipal Service Excellence, and People and Partnerships.

The three key pillars set forward the direction for the municipality and key elements that relate directly to the Township's infrastructure assets are captured below:

Pillar 1 - Sustainable Long-Term Prosperity

- **Financial Sustainability** – *Our aim is to continue to maintain a focus on prudent financial management through long-term financial planning. This includes integrating other critical plans such as our Asset Management Plan, Recreation, Parks and Leisure Master Plan, and Transportation Master Plan*.

- **Resilience and Adaptation** – *Our commitment is to foster community resilience to climate change through the safeguarding of our natural assets and mitigating the impacts of climate change*.

Pillar 2 – Municipal Service Excellence

- **Evidence Based** – *Our commitment is to use data-driven insights for informed planning and decision-making. Where available, tools such as performance indicators and analytics will be used within proposals, reports and day-to-day decision making.*

- **Customer Focus** – *Our goal is to enhance customer service and community outreach, making it more accessible through clear communications, self-service, and staff support and resources*.

- **Long-Term Planning** – *The Township is dedicated to developing and implementing long-term financial and master plans to ensure the sustainability of our programs and services.*

- **Operational Efficiency** – *We will optimize processes, service levels, resources, and systems to modernize service delivery, streamline operations, maximize cost-effectiveness, and support and empower management to innovate municipal service delivery*.

Pillar 3 – People and Partnerships

- **Partnership Development** – *Forge collaborative relationships with external organizations, stakeholders, and neighbouring communities to leverage resources, share expertise, and achieve common goals for the betterment of the community.*

1.4 Changes in Growth in Population

Watsons & Associates Economists was retained by the Township of South Frontenac in 2019 to undertake an assessment of the Township's growth potential by settlement area to the year 2046. This study was commissioned as a technical background document to support the Township's Growth Management Study and Official Plan review.

This growth analysis largely focused on the allocation of residential and non-residential development throughout the Township by settlement area and remaining rural area. The following provides a summary of the key findings of this report with respect to forecast population, housing and employment trends for South Frontenac:

Regional and Local Economic Growth Drivers

- Economic growth in South Frontenac is closely tied to the City of Kingston. The proximity of South Frontenac to Kingston's employment market represents a key driver of permanent population growth and distribution of local housing demand;
- The Township is characterized by a blend of expansive rural lands and settlement areas. The existing employment base is concentrated in retail, small to medium-scale industrial and commercial business and home occupations, government and education , accommodation and food services, agriculture and tourism; and
- Quality of life attributes offered in South Frontenac are also expected to drive net migration from a broad range of demographic groups, including first time home buyers, families, empty nesters and seniors.

Employment Growth Forecast

- The Township's employment base is expected to increase by approximately 1,100 jobs between 2016 and 2046, increasing from 3,300 to 4,400. This represents an annual growth rate of 1% over the 30-year forecast period;
- Employment growth in work at home and no fixed place of work categories is forecast to account for the majority of all job growth in South Frontenac;
- Population-related employment (commercial/institutional including work at home and no fixed place of work employment) is anticipated to follow population growth. Alongside commercial employment growth in Inverary, the settlement areas of Hartington and Harrowsmith have potential to facilitate highway commercial employment uses;
- The majority of industrial employment growth is forecasted to occur in primary settlement areas with some opportunity for rural development. The settlement area of Sydenham has potential for light industrial growth on municipal water services; and

- The Inverary employment area also represents a marketable location to facilitate the bulk of industrial employment.

Residential Growth Forecast

- Based on the 2019 study by Watson and Associates, the Township of South Frontenac permanent population base is forecasted to increase over the next 30 years, from approximately 19,100 in 2016 to 23,800 in 2046. This represents an annual growth rate of 0.7%;
- Major changes occurred during the pandemic and there was substantial growth, with the 2021 Stats Canada showing the population growth to 20,188, which was an 8.3% change from the 2016 census. In 2024, the township is once again engaging a third party to update the population projections based on this new information
- Over the 2016 to 2046 forecast period, new housing growth is forecasted to be comprised of 90% low-density (singles and semi-detached), 4% medium-density, (townhouses) and 6% high-density (apartments);
- Compared to historical trends, housing growth is forecast to shift more towards settlement areas between 2016 to 2046. This shift is anticipated to be largely driven by the aging of the population, local desire for more housing options within settlement areas, opportunities in primary settlement areas for communal servicing and continued upward pressure on local housing prices;
- Housing growth in settlement areas is anticipated to be concentrated in the primary areas of Inverary, Sydenham and Verona; and
- Rural areas are forecast to contain 40% of all new permanent unit growth. This rural share of growth increases when also considering dwelling unit conversions from permanent to seasonal occupancy as well as demand for new seasonal dwellings.

2.0 Asset Management Plan, Framework and Methodology

2.1 Infrastructure Assets Included in the Plan

The Asset Management Plan Update for 2023 includes expanded details on the core assets owned by the Township that include roads, bridges, culverts, stormwater management assets, and water assets. Each of these core assets groups are discussed in separate sections of this report update.

2.2 Stakeholders in the Updates of the AM Plan

Key stakeholders of the 2023 Plan update include:

- Residents of the Township of South Frontenac
- Township Council
- Department Heads in Corporate Services (Finance) and Public Services
- Contributing staff from the Corporate Asset Management Team, Public Services Department (Technical Services / Operations), Frontenac County (GIS) and Corporate Services (Finance)

2.3 Framework and Methodology of the AM Plan

The 2023 AM update serves to meet the regulatory requirements of Ontario Regulation 588/17 requirements, the Guide for Municipal Asset Management Plans and the asset management practices endorsed by the Federation of Canadian Municipalities and Asset Management Ontario.

Each section of the AM Plan for Core Assets will provide details on the state of the Local Infrastructure ending December 31, 2022, including details on:

1. Asset Inventory
2. Profile and Age of Assets
3. Asset Conditions and Rating Systems
4. Data Sources
5. Levels of Service
6. Lifecycle Strategies
7. Current and Forecasted Operating and Capital Costs

3.0 Core Assets – Transportation

This section of the AM Plan provides details on the number, age distribution and condition of the Township's core transportation assets including roads, bridges, and culvert structures. These assets in combination carry the greatest replacements costs within the transportation asset pool and carry higher levels of risk within the overall portfolio.

3.1 Asset Inventory

The Township of South Frontenac Transportation Core Asset pool includes approximately 802km of roadways, 24 bridges, and 22 culvert structures (>3m span) serving the residents of South Frontenac. The Township continues to collect and update data on these assets and records all information within the Corporation's asset management software. Field inspections and condition assessments that are performed on these assets continue to improve the both the quality and accuracy of the data compiled on these systems.

The total estimated replacement value for existing core transportation assets (2022) included in this AM plan is estimated at 312.2 million dollars. These values are expressed in 2022 dollars and can be found in Table 3.1 below.

Table 3.1 – Core Transportation Asset Details and Valuation

Subservice	Major Asset Group	Process – Sub Asset Group	Asset Quantity (2022)	Unit	Replacement Value (2022 $M)
Roads	Pavement (HCB)	Arterial (Class 2)	312,630	sqm	36.361
		Collector (Class 3 and 4)	788,985	sqm	78.392
		Local (Class 5 and 6)	111,190	sqm	13.296
	Surface Treatment (LCB	Collector (Class 3 and 4)	2,113,808	sqm	106.428
		Local (Class 5 and 6)	589,707	sqm	32.732
	Structures	Bridges Spanning 3m or > 24 structures	3,041	sqm	33.944
		Culverts** Spanning 3m or >	1,624	sqm	11.099

*HCB and LCB Assets include road base. Gravel roads are excluded.

**Culvert assets do not include drainage structures with spans of less than 3m.

3.2 Profile and Age of Assets

The Township carried out extensive research on the age of its transportation assets as part of the 2016 Asset Management Plan update and that data continues to improve over time with the implementation of the new AM software platforms. The details provided in Figures 3.1 through 3.3 show the representation of these assets across each decade from pre-1950 through to the 2020's.

Figure 3.1.1 – Age Profile – Paved Roadways HCB (Asphalt)

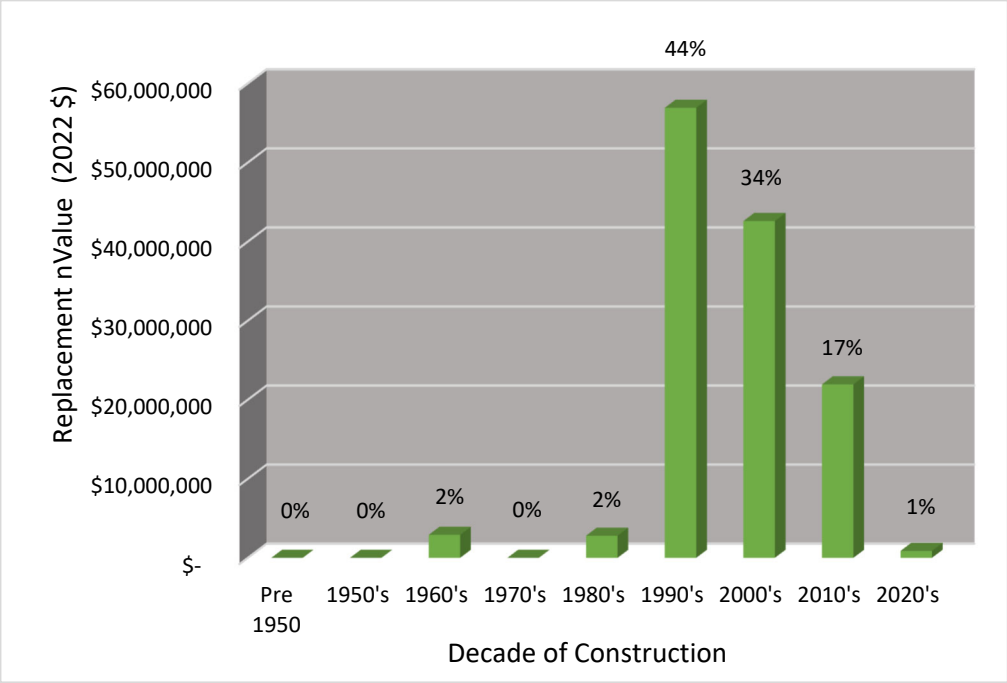


Figure 3.1.2 – Age Profile – Paved Roadways LCB (Surface Treated)

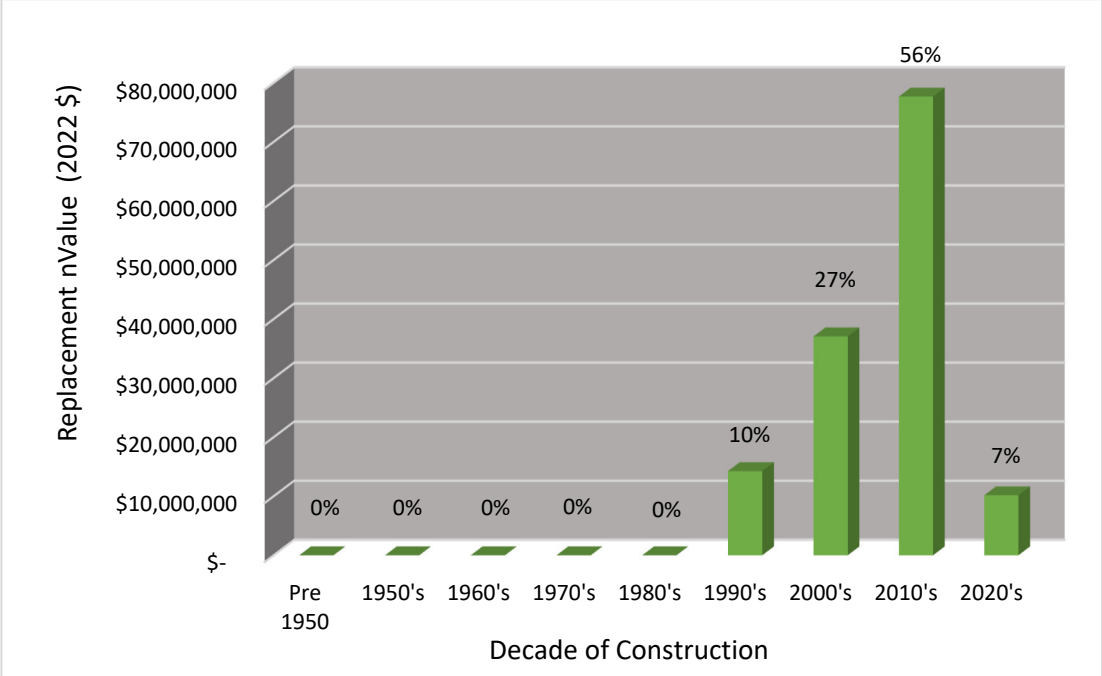


Figure 3.2 – Age Profile – Bridges Span 3m or Greater (OSIM)

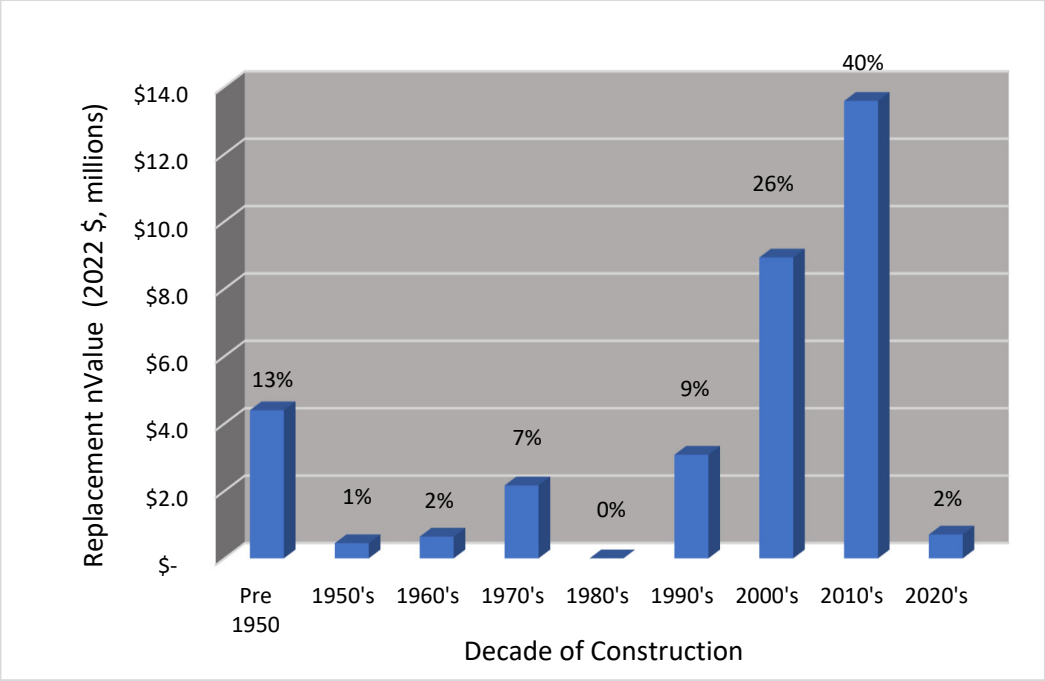
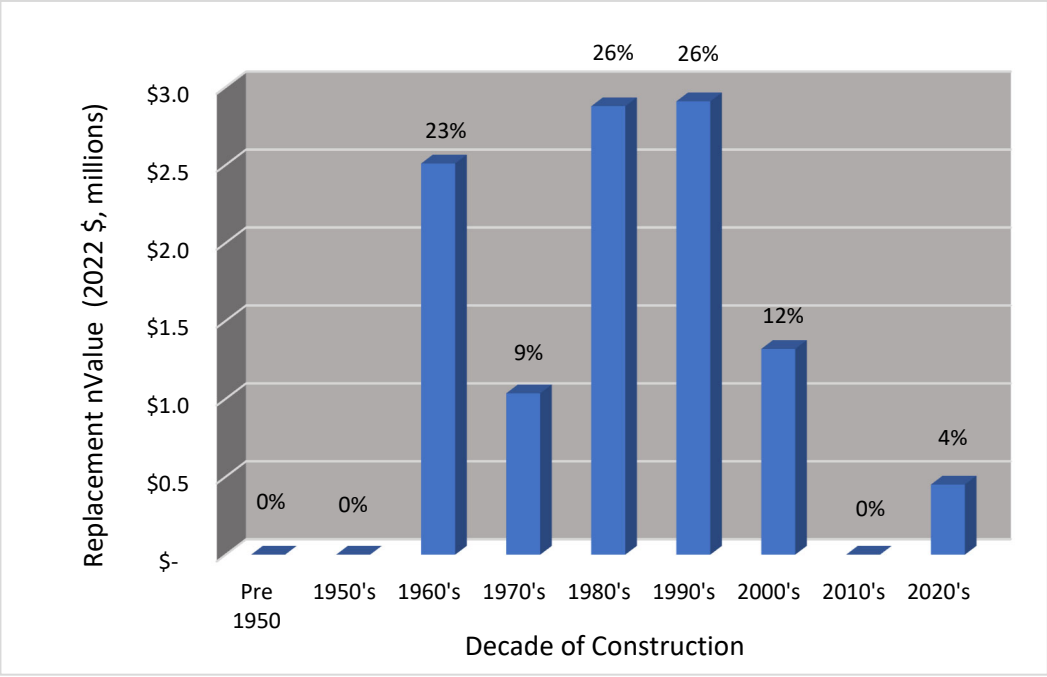


Figure 3.3 – Age Profile – Culverts Span 3m or Greater (OSIM)



The average age for each of the asset profiles is summarized below in Table 3.2. The majority of Low-Class Bituminous roads in the Class 3 and 4 categories are beyond the half point in their overall service life. These results are indicative of the deficits (poor and very poor rated roads) for the LCB class in the 2022 Roads Needs Study.

Table 3.2 – Average Core Transportation Asset Age

Major Asset Group	Sub Asset Group	Average Age (2022)	Estimated Remaining Service Life (2022)
Pavement (HCB)	Arterial (Class 2)	23.7	21.3
	Collector (Class 3 and 4)	17.3	32.7
	Local (Class 5 and 6)	19.1	40.9
Surface Treatment (LCB)	Collector (Class 3 and 4)	14.7	10.3
	Local (Class 5 and 6)	12.5	17.5
Structures	Bridges Spanning 3m or Greater	35.1	39.9
	Culverts Spanning 3m or Greater	35.5	14.5

3.3 Asset Conditions and Ratings Systems

All of the Township's assets are assessed for a condition rating that defines the level of deterioration of an asset throughout its lifecycle. These conditions ratings are initially updated through field measurements and are adjusted annually according to predictive methods that consider the assets age and an accepted deterioration curve. Some assets deteriorate in a linear fashion (equally over time) while others deteriorate at accelerated rates as they get older. The asset condition is based on standard engineering practices for all assets.

In this Asset Management Plan update, the Township has moved to include reporting on a five-point universal rating system when reporting the condition of assets to key stakeholders. Assets are evaluated using various methods and rating scales are established that translate to ratings of: Very Good, Good, Fair, Poor or Very Poor.

Table 3.3 provides a summary on the five-point scale to support further interpretation.

Table 3.3 – Five Point Condition Rating System

Grade	Description	Condition Assessment Definition	Age Based Condition	Probability of Failure
VG	**Very Good**	Well maintained, good condition, new or recently rehabilitated.	Greater than 80% of asset useful life remaining.	Improbable
G	**Good**	Good condition, few elements exhibit existing deficiencies.	60 to 79.9% of asset useful life remaining.	Not Likely
F	**Fair**	Some elements exhibit significant deficiencies. Asset requires attention.	40 to 59.9% of asset useful life remaining.	Possible

P	**Poor**	A large portion of the system exhibits significant deficiencies. Asset mostly below standard and approaching end of service life.	20 to 39.9% of asset useful life remaining.	Likely
VP	**Very Poor**	Widespread signs of deterioration, some assets may be unusable. Service is affected.	Less than 20% of asset useful service life remaining.	Very Probable

Some assessment programs are focused on identifying defects and/or potential unsafe conditions according to specific regulatory requirements. Other more detailed assessment programs focus on the performance of an asset rather than compliance. These more detailed condition assessments are intended to review where an asset is within its predicted service life and how much service life remains. Often these types of assessments use a decay curve with as scale of 100% (best) to 0% (worst). These major condition assessments serve to identify how the assets are performing and provide guidance on the potential for interventions to extend the overall asset life. Additional details on the condition rating review process for roads, bridges and culvert structure can be found in Sections 3.3.1 and 3.3.2.

3.3.1 Road Pavement Condition

The Township of South Frontenac traditionally carried out road condition ratings on its hard surfaced roadways on a four-year cycle for its paved (HCB) and surface treated (LCB) assets. This model became more difficult to maintain over the years due to the significant (and seasonal) resource demands for inspection activities.

In 2021, the Township moved to secure the services of a professional consultant to carry out a network evaluation that looked to establish a Pavement Condition Index (PCI) in accordance with Ministry of Transportation (MTO) standards. This review included assessments of Surface Distresses (DMI) and Ride Condition Ratings (RCR) as part of the MTO approved methodology. Study activities were carried out by a two- person review team using the: Manual for Condition Rating of Surface Treated Pavements (SP-021) and the Manual for Condition Rating of Flexible Pavements (SP-022). Gravel roads were also reviewed and rated as part of this activity however those findings are not a requirement under the current AM reporting for core assets.

Each asphalt and surface treated road segment in the Township's asset management inventory were reviewed and assigned a PCI rating between 100 (best) and 0 (worst) as part of the 2022 Road Needs Study. The Township has since corresponded these ratings to a separate five step reporting scale for standardized reporting formats for stakeholders.

Table 3.4 – Five Point Condition Rating System – PCI

PCI Rating	Description
85 to 100	Very Good
70 to < 85	Good
55 to < 70	Fair
40 to < 55	Poor
0 to < 40	Very Poor

3.3.2 Structure Condition - Bridge and Culverts (> 3m Span)

Bridges and culvert structures that have a span of 3m or greater are inspected by a qualified structural engineer once every 2 years and these structures are evaluated according to the methodology prescribed within the provincial Ontario Structure Inspection Manual (OSIM) dated 2008. The OSIM manual reviews various physical elements of a bridge or culvert structure and an overall Bridge Condition Index is applied. The Bridge Condition Index is calculated as a weighted average of the condition states for each of the elements making up the structure. Since all elements are not of equal importance to the structure, the index is weighted according to the relative value or importance of each element in the total.

BCI = Current Element Value/Total Replacement Value x 100

BCI ratings range from a rating of 100 for new assets to a rating of 0 where all elements would otherwise be in a state of disrepair. The Ontario Ministry of Transportation classifies bridges with a BCI of 70 or above to be in good or very good condition and below 60 to be in poor or very poor condition. The band of 60 to 70 is otherwise reserved as a band for a rating of fair. The Township of South Frontenac has developed a secondary five-point scale to for reporting BCI outcomes in a similar manner previously reported for roads.

Table 3.5 – Five Point Condition Rating System - BCI

BCI Rating	Description
85 to 100	Very Good
70 to < 85	Good
60 to < 70	Fair
40 to < 60	Poor
0 to < 40	Very Poor

3.3.3 Asset Condition Summary - Transportation

The charts provided below illustrate the condition of each of the categories of transportation assets by asset value.

- Hard topped asphalt roadways currently have 64% of the network in a good or very good condition while surface treated roadways sit at 58% for similar categories.
- Bridge assets currently have 57% of the network in a good or very good condition while culverts sit much lower at 37% for similar categories.

Figure 3.4.1 – Condition Ratings – Roads (HCB Asphalt)

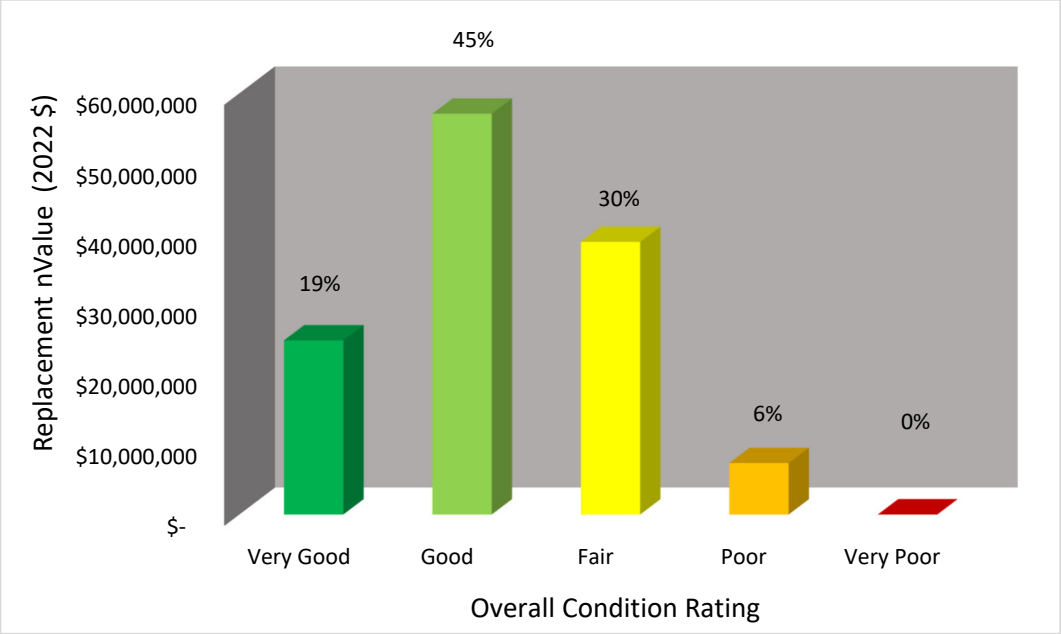


Figure 3.4.2 – Condition Ratings – Roads (LCB Surface Treated)

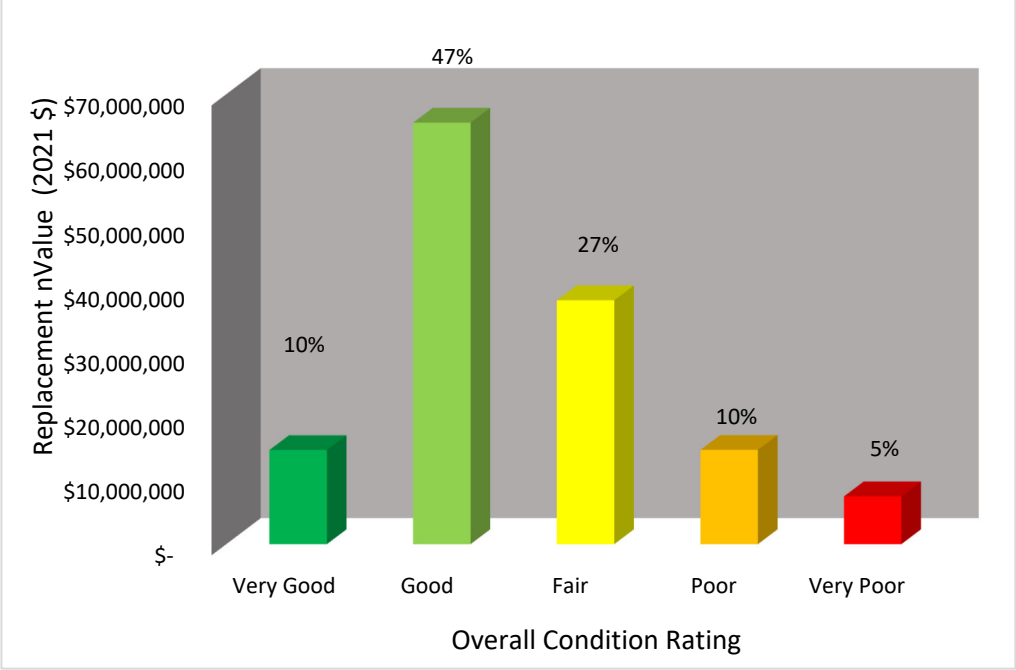


Figure 3.5 – Condition Ratings - Bridges (OSIM)

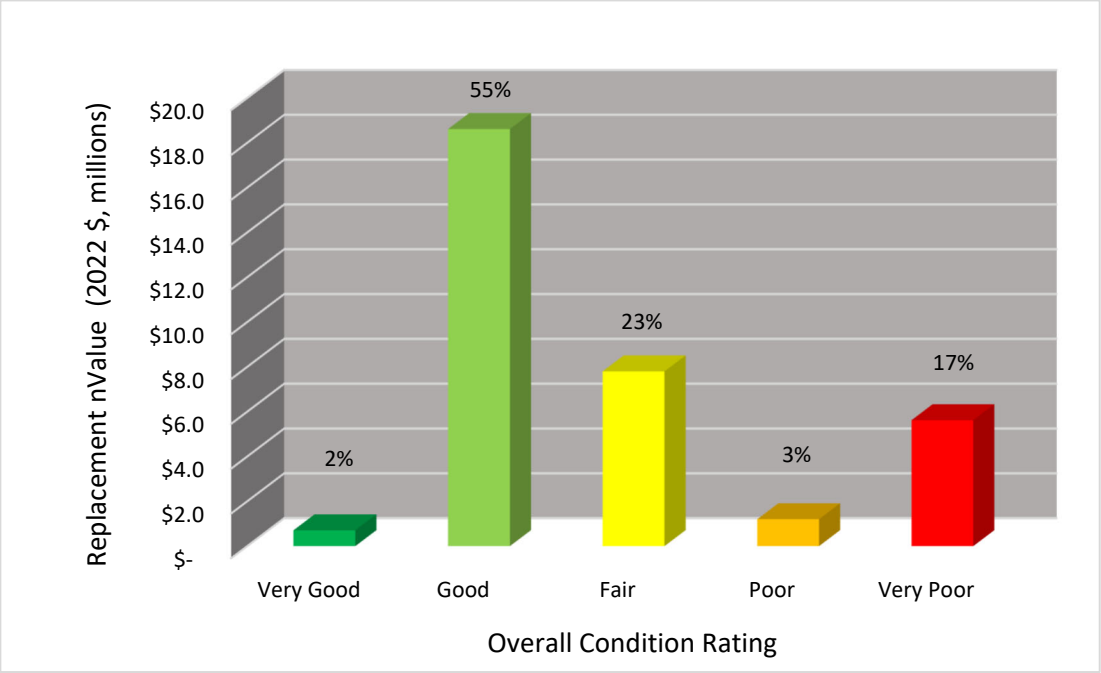


Figure 3.6 – Condition Ratings - Culverts (OSIM)

3.4 Data Sources

The inventories for the core transportation assets were based on information obtained through the Township's GIS records (end of the December 31, 2022) and estimated construction costs were provided by each class. Information compiled by the 2021 Ontario Structure Inspection Manual (OSIM) reports and the 2022 Comprehensive Road Needs Study (RFP# PS-P02-2021) were also utilized. Unassumed assets from active subdivision

developments were not included within these inventories. A summary of the data sources is included in Table 3.6 below:

Table 3.6 – Data Sources for Inventory, Cost and Condition Analysis

Asset	Inventory	Replacement Value	Condition Estimate
Roads	GIS	Unit Construction Costs (per m of road/design standard)	Based on PCI within Comprehensive Road Needs Study (2022) – Golder Associates
Bridges – Span 3m or Greater	GIS / 2021 OSIM Report	Engineering Estimates / Actual Costs	Based on BCI within 2021 OSIM Report – D. M. Wills
Culverts – Span 3m or Greater	GIS / 2021 OSIM Report	Engineering Estimates / Actual Costs	Based on BCI within 2021 OSIM Report – D. M. Wills

3.5 Levels of Service

Levels of Service (LOS) are statements that describe the outputs and objectives that the Township intends to deliver through the services to its businesses, residents and other stakeholders. Developing, monitoring and reporting on LOS are all key components of a performance management program which has the core objective of improved service delivery, accountability and transparency in services.

LOS can be guided by many factors including customer expectations, regulatory requirements, or operational policies and procedures. An effective asset management plan requires a formal framework of performance measures, targets, and timeframes to achieve targets. It is furthermore crucial that the cost to deliver the documented Level of Service is fully understood.

A LOS analysis includes:

- Service identification with the identification of assets involved in providing the services and the stakeholders impacted;
- Determination of community expectations with respect to services;
- Determination of strategic levels of service, based on community expectations (frequently referred to as customer levels of service);
- Determination of technical levels of service for each strategic level of service;
- Use of performance measures to assist in comparing existing service levels to expected levels; and
- An assessment of lifecycle cost implications of moving from existing levels of service to expected (desired) levels of service over a forecast period.

In order to meet the requirements of the regulation, this AM plan update will discuss current LOS under community and technical LOS categories, defined as:

- **Community Levels of Service**: Qualitative descriptions that demonstrate the Township's customer and stakeholders' expectations of transportation services.

- **Technical Levels of Service**: Technical metrics that translate customer expectations into objectives and performance measures.

Ontario Regulation 588/17 currently sets out the core LOS requirements that all municipalities must discuss and report on in Tables 3.7 and 3.8 which follow.

Table 3.7 – O. Reg. 588/17 Prescribed LOS for Roads

Service Attribute	Community LOS (Qualitative)	Technical LOS (Performance Metric)
Scope	Description which may include maps, of the road network in the municipality and its level of connectivity.	Number of lane-kilometers of each of arterial roads, collector roads and local roads as a proportion of square kilometers of land area for the municipality
Quality	Description or images that illustrate the different levels of road class pavement condition.	For paved roads in the municipality, the average pavement condition index value. For unpaved roads in the municipality, the average surface condition (e.g., Very Good, Good, Fair, Poor or Very Poor.)

Table 3.8 – O. Reg. 588/17 Prescribed LOS for Bridges

Service Attribute	Community LOS (Qualitative)	Technical LOS (Performance Metric)
Scope	Description of the traffic that is supported by municipal bridges (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians and cyclists).	Percentage of bridges in the municipality with loading or dimensional restrictions
Quality	Description or images of the condition of bridges and how this would affect use of the bridges. Description or images of the condition of culverts and how this would affect use of the culverts.	For bridges in the municipality, the average bridge condition index value. For structural culverts in the municipality, the average bridge condition index value.

3.5.1 Community Levels of Service

The Township of South Frontenac has a Comprehensive Road Needs Study that was completed by WSP / Golder Associates. This study includes field assessments and ratings of all of the Township's road assets and those ratings are currently available on the Townships website. This study also includes thematic maps of the Township's road assets which show road connectivity throughout the municipality and will also provide an overview

of the corresponding road ratings of Very Good, Good, Fair, Poor and Very Poor. Qualitative descriptions of Community LOS for Pavements and Bridges can be found in Tables 3.9 and 3.10 below:

Table 3.9 – Qualitative Description of Roadways

Service Attribute	Community LOS (Required by O. Reg. 588/17)	Qualitative Description
Scope	Description which may include maps, of the road network in the municipality and its level of connectivity.	The road network for the Township of South Frontenac includes over 1,603 lane kilometers of roadway that are predominantly located in rural residential areas. A single tier network of collector roads and arterial roads formerly managed by the County provide key connectivity to a series of hamlets and villages, the latter of which includes most commercial and industrial services. The Township's major road network provides key service for the movement of commercial traffic, public transportation, emergency services, service vehicles and motor vehicles within the County. The network is also highly integrated into the major networks serving the County of Lanark, County of Lennox and Addington, County of Lanark, Leeds and Grenville and the City of Kingston. A map of the road network can be found in Appendix A1 of this report.
Quality	Description or images that illustrate the different levels of road class pavement condition.	Pictures of the typical road class pavement conditions are included in Appendix A2 of this report.

Table 3.10 – Qualitative Description of Bridges

Service Attribute	Community LOS (Required by O. Reg. 588/17)	Qualitative Description
Scope	Description of the traffic that is supported by municipal bridges (e.g., heavy transport vehicles, motor vehicles, emergency vehicles, pedestrians and cyclists).	The bridges in South Frontenac are found throughout all rural areas of the Township and provide connectivity for traffic over the many lakes, rivers and streams found in the area. Bridges within the Township serve the movement of commercial and industrial vehicles, public transportation, emergency services, motor vehicles, service vehicles, cyclists and

		pedestrians. The intensity of service does however vary significantly by location.
Quality	Description or images of the condition of bridges and how this would affect use of the bridges. Description or images of the condition of culverts and how this would affect use of the culverts.	Pictures of typical bridges and large culverts (greater than 3m span) within the Township can be found in Appendix A3 of this report. The majority of bridges in the Township are currently in a good to very good condition whereas the majority of culvert structures in the Township are in a fair to good condition.

3.5.2 Technical Levels of Service

Ontario Regulation 588/17 requires the municipality to track two key technical metrics for the road network that include:

- The overall proportion of each road classification area to the overall area of the municipality; and
- The average Pavement Condition Index for each classification of road.

The Township has included the details on Technical LOS for roads in Tables 3.11 and 3.12 below. Additional metrics have also been provided with respect to asphalt pavement (HCB) and surface treated (LCB) roadways to support local AM initiatives.

Table 3.11 – Technical LOS for Road – Lane-km

Road Classification	Lane-km (Hard Surfaced)	Township of South Frontenac Land Area (km2)
Arterial Roads (MMS Class 1 or 2)	76.58	948
Collector Roads (MMS Class 3 or 4)	916.22	
Local Roads (MMS Class 5 or 6)	227.26	

Table 3.12 – Technical LOS - Pavement Condition Index

Road Classification	Definition (Required by O. Reg. 588/17)	Current Qualitative Performance Paved Roads Only (PCI)
Arterial Roads	Arterial roads under the definition of the regulation are roadways that meet the Minimum Maintenance Standards Definitions for Class 1 & 2 roads. Arterial roadways carry high volumes of traffic and provide a high level of connectivity to nearby provincial highways and major regional roads. Examples of arterial roads are Road 38, Perth Road and Sydenham Road.	HCB Asphalt = 70.5
Collector Roads	Collector roads under the definition of the regulation are roadways that meet the MMS Definitions for Class 3 & 4 roads. Collector roadways distribute medium volumes of traffic between arterial roadways and serve a mixture of through traffic and property access. Examples of collector roads are Bradshaw Road, Battersea Road, Bedford Road, Bellrock Road, Buck Bay Road, Burnt Hills Road, Petworth Road, Round Lake Road, Westport Road and Wilton Road.	HCB Asphalt = 75.6 LCB Surface Treated = 70.5
Local Roads	Local roads fall under the MMS Class 5 and 6 roads and mainly provide non-thoroughfare traffic and provide property access. Generally, traffic volumes are low and have limited commercial and industrial traffic. Examples of local roads are Alton Road, Cemetery Road, Deer Creek Drive, Keeley Road, Mount Chesney Road and Quarry Road.	HCB Asphalt = 81.5 LCB Surface Treated = 69.3

*Metrics for asphalt roads (HCB) and surface treated roads (LCB) are not individually required by regulation but have been included by Municipality for AM planning purposes.

Ontario Regulation 588/17 requires the municipality to track three key technical metrics for the bridges that include:

- Percentage of bridges in the municipality with loading or dimensional restrictions
- The average Bridge Condition Index value for the bridges in the network; and
- The average Bridge Condition Index value for the culvert structures in the network

The Township has included the details on Technical LOS for bridges and culverts in Tables 3.13 and 3.14 below.

Table 3.13 – Technical LOS for Bridges – Loading or Dimensional Restrictions

Asset	Percentage (%)	Comments
Bridge (Width or Height)	12.5	3 of 24 total
Bridge Loading	8.3	2 of 24 total

Table 3.14 – Technical LOS – Bridge Condition Index

Asset	Average BCI
Bridges (In Service)	63.5
Culverts (Span 3m or greater)	66.4

Note: BCI's are all weighted average by replacement value.

The Transportation Association of Canada has a progressive target that identifies that the number of bridges in a network in good or very good condition should be at 85%. This is a standard that the Ministry of Transportation has also adopted. On average, new bridges will last approximately 60 to 70 years and will require rehabilitation every 30 to 35 years. This represents an average annual deterioration rate of 3%. Based on a five-year planning cycle it is desirable to only have 15% of the bridges to require rehabilitation at any given time. This threshold indicates that the system is in a steady state.

Using this measure, a bridge with a BCI of over 70 is considered to be in good condition. Locally the Township has 23 bridges in service and one bridge currently closed. Eleven of the Township's in service bridges carry a BCI rating of 70 or higher currently which puts the local network at 47.8%.

3.6 Lifecycle Strategies

The Township's ability to deliver the levels of service outlined in the AMP is impacted by numerous factors including:

a) Current and forecasted growth within the service area;
b) Changes in legislative requirements and the need for equipment to operate in compliance under the Minimum Maintenance Standards for Municipal Highways, Ontario Water Resources Act, Environmental Compliance Approvals and other related approvals;
c) Aging infrastructure and the associated need for increased operations, maintenance and renewals; and

d) Availability of funding resources driven by taxation, development charges and federal/provincial grant programs.

For further details on lifecycle activities on the stormwater network refer to Tables 3.15 and 3.16 below:

Table 3.15 – Maintenance and Monitoring – Roads and Bridges

Asset Type	Operational Activities	
	Current	Additional / Potential
Hard Surface Roads – Paved (HCB)	• Routine MMS Inspections • Crack sealing and mastic repairs • Hot patching and cold patching • Shoulder maintenance	• Use of asphalt binder rejuvinators
Hard Surface – Surface Treated (LCB)	• Routine MMS Inspections • Crack sealing and edge repairs • Hot patching and cold patching	• Use of cold in place sealants / slurry seals
Bridges and Culverts (OSIM)	• Bi-annual OSIM Inspection (Engineering Third Party) • Routine inspection and maintenance as required under Minimum Maintenance Standard Regulation • Clean bridge deck drains and expansion joints (spring) • Wash bridge decks (spring) • Repair wear surface	• Increased frequency of concrete crack repairs • Vegetation removals

Table 3-16 – Rehabilitation and Renewal – Roads and Bridges

Asset Type	Capital Renewal Activities	
	Current	Additional / Potential
Hard Surface Roads – Paved (HCB)	• PCI 70 to 85 – Microsurfacing • PCI 60 to 70 – Mill and Pave or Straight Overlay • PCI 55 to 60 – Cold in Place recycling • PCI <55 – Full Reconstruction	
Hard Surface – Surface Treated (LCB)	• PCI 60 to 80 – Single Surface Treatment - SST • PCI less than 55 – Full Reconstruction of DST	

Bridges and Culverts (OSIM)	• Rehabilitation and Renewals Guided by Ontario Structure Inspection Manuals • Replace wear surfaces • Repair or replace substructure components, superstructure components, expansion joints, barrier systems and related components	• Develop & implement committed annual trenchless lining programs • Develop & implement committed annual structure repair program

3.7 Current and Forecasted Operating and Capital Costs

The estimated costing for lifecycle activities and capital for transportation assets are shown in the table below with an estimated $94.8 million over a period of 10 years.

Table 3.17 – Transportation Lifecycle Costs and Capital Costs

Year	Capital Cost
2023	$8,710,500
2024	$8,627,700
2025	$11,718,860
2026	$8,691,250
2027	$8,103,640
2028	$8,993,500
2029	$9,989,448
2030	$9,734,150
2031	$10,276,250
2032	$9,933,500
TOTAL	$94,778,798

4.0 Core Assets – Drinking Water System

This section of the AM Plan provides details on the number, age distribution and condition of the Township's core drinking water system assets including watermains, hydrants, valves, services, elevated water storage and the water treatment facility.

4.1 Asset Inventory

The Township of South Frontenac currently owns and manages one municipal drinking water system in the Village of Sydenham. Water service assets in the village include a surface water treatment plant, an elevated storage tower, water mains, valves, hydrants, meters and service lines on public rights of way. This system was originally built in 2005 and as such represents one of the newer asset pools within the municipality. The Township continues to collect and update data on these assets and records all information within the Corporation's asset management software. Field inspections and condition assessments that are performed on these assets continue to improve the both the quality and accuracy of the data compiled on these systems.

The total estimated replacement value for existing core drinking water system assets (2022) included in this AM plan is estimated at 13.2 million dollars. These values are expressed in 2022 dollars and can be found in Table 4.1 below.

Table 4.1 – Core Drinking Water Asset Details and Valuation

Subservice	Major Asset Group	Process – Sub Asset Group	Asset Quantity (2022)	Unit	Replacement Value (2022 $M)
Drinking Water System	Supply and Treatment	Raw Water Intake 400mm (193m)	1	ea	0.375
		Treatment Plant	1	ea	4.911
		Plant Upgrades (2010)	1	ea	1.440
	Storage	Elevated Water Tower (1,280 m3)	1	ea	1.646
	Intake & Distribution	Water Mains 250mm	1,321	m	3.162
		Water Mains 200mm	5,491	m	
		Water Mains 150mm	342	m	
		Hydrants	43	ea	0.352
		Valves	83	ea	0.340
		Services	288	ea	0.879
		Meters	229	ea	0.097

4.2 Profile and Age of Assets

The Township carried out extensive research on the age of its drinking water assets as part of the 2016 Asset Management Plan update and that data continues to improve over time with the implementation of the new AM software platforms. The details provided in Figures

4.1 and 4.2 show the representation of the respective age distribution for water distribution and water treatment assets. These graphs show that the majority of the Township's drinking water assets were constructed in the 2000's and modest growth and investments in the system have occurred in the 2010's. The water distribution assets developed in these decades are $4.42M and $0.32M respectively. The water treatment assets are similarly distributed at $6.93M and $1.44M over the same period.

Figure 4.1 – Age Profile – Drinking Water Distribution Assets

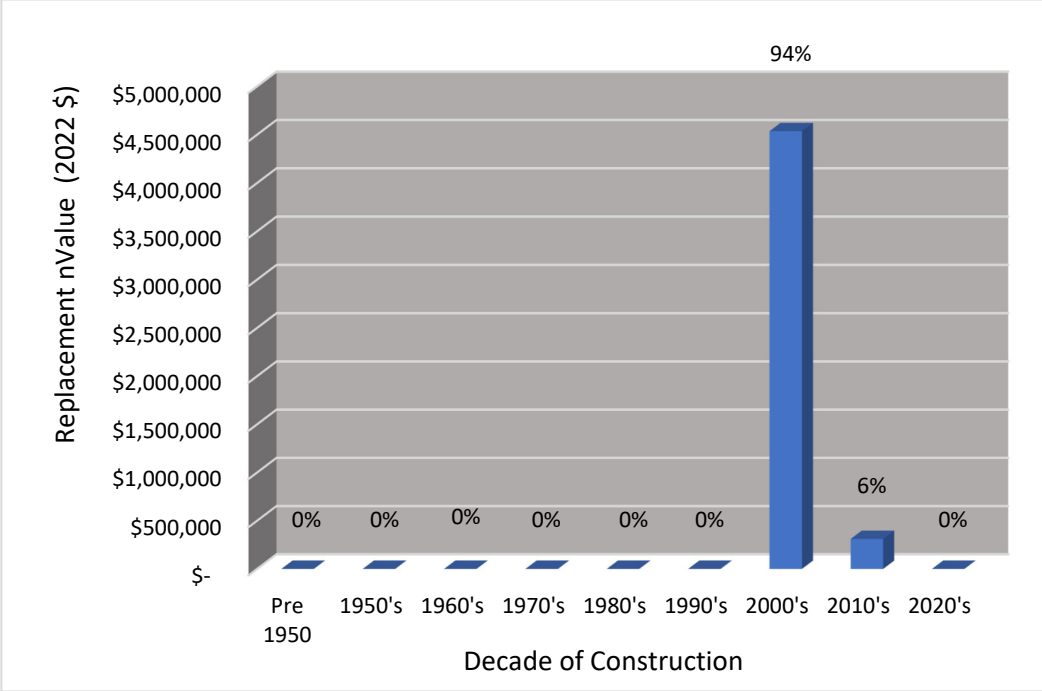
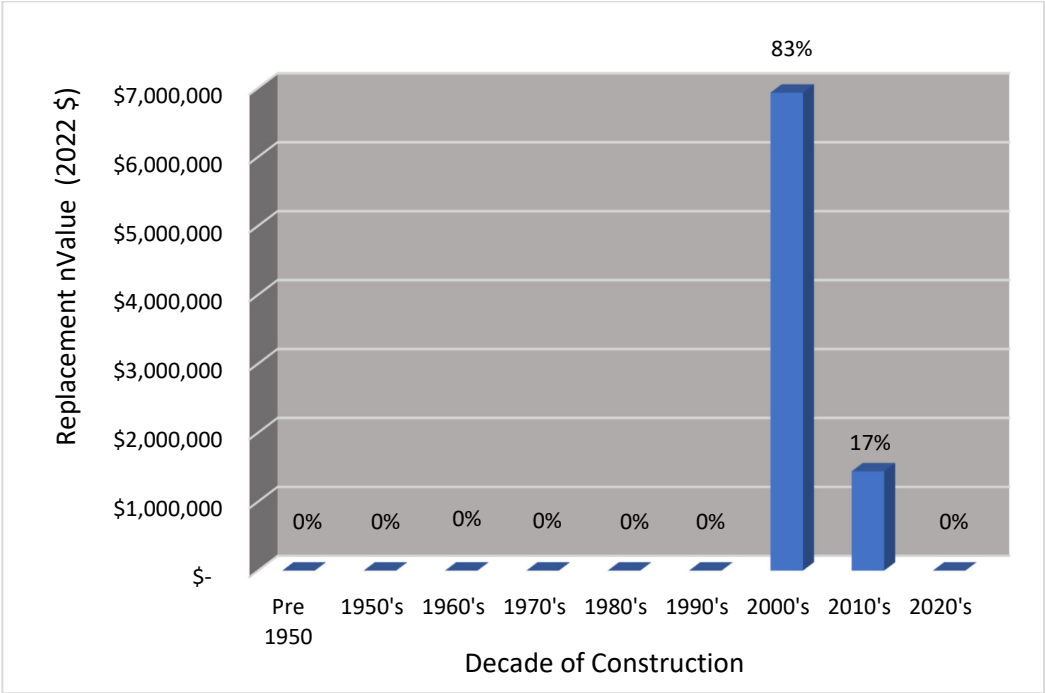


Figure 4.2 – Age Profile –Treatment / Storage Assets



The average age and estimated life of water service assets weighted by replacement value is summarized below in Table 4.2.

Table 4.2 – Core Drinking Water Asset Age

Subservice	Major Asset Group	Process – Sub Asset Group	Useful Service Life (yrs)	Average Age (2022)	Estimated Remaining Service Life (2022)
Drinking Water System	Supply and Treatment	Raw Water Intake	100	17	83
		Treatment Plant	50	17	33
		Plant Upgrades (2010)	25	12	13
	Storage	Elevated Water Tower (1,280 m3)	100	17	83
	Distribution	Water Mains	90	16.7	73.3
		Hydrants	60	16.4	43.6
		Valves	50	16.6	33.4
		Services	50	16.6	33.4
		Meters	25	3.3	21.7

4.3 Asset Conditions and Ratings Systems

Updated condition information remains limited on the water treatment plant, the water storage facility, and the water mains. Therefore, asset condition was established by evaluating the useful service life remaining. The water treatment plant, elevated storage tower and water mains were all constructed in 2005 with plant upgrades in 2010. The water distribution system also expanded in 2011 with the construction of the Valleyview Subdivision which included Morgan Drive. The amount of remaining useful life on all of the assets has been updated from the 2016 AMP and has been correlated to the condition rating schedule below.

Table 4.3 – Five Point Condition Rating System

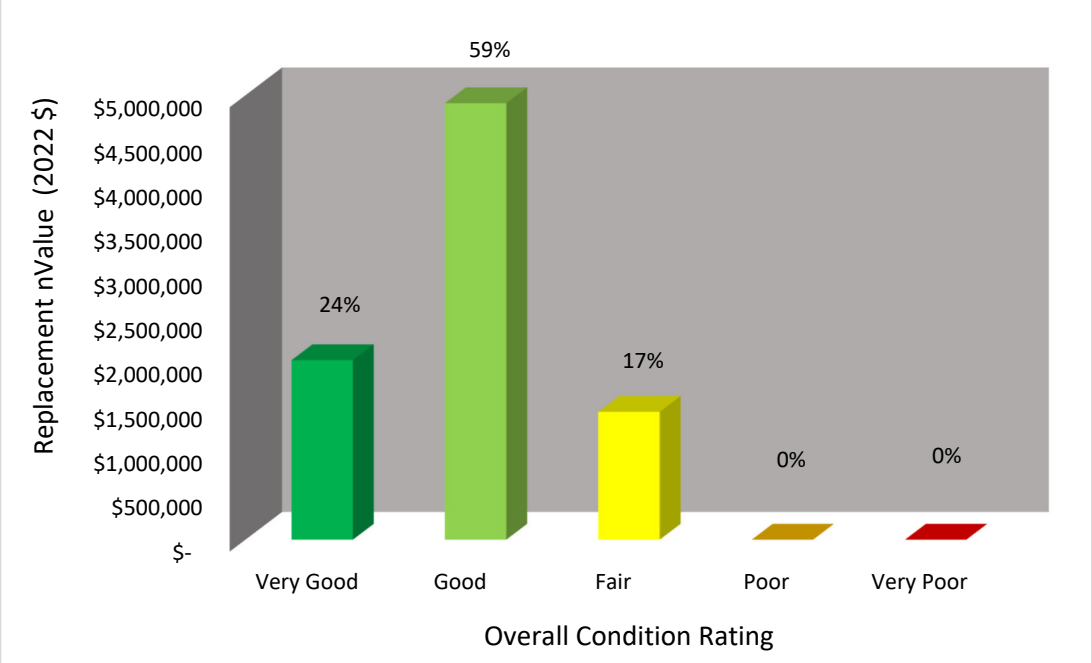
Remaining Useful Life (%)	Description
80 to 100	Very Good
60 to < 80	Good
40 to < 60	Fair
20 to < 40	Poor
0 to < 20	Very Poor

Based on the scoring scale of remaining useful service life, it was found that 100% of the Township's water distribution assets have a rating of very good or good condition. In addition, 83% of the water treatment and water storage assets have a very good or good condition rating.

Given the relatively young age of the system, there is a very high degree of confidence in the information and findings. Figures 4.3 and 4.4 below show the current ratings for both major systems.

Figure 4.3 – Condition Ratings – Water Distribution

Figure 4.4 – Condition Ratings – Treatment / Storage Assets



4.4 Data Sources

The inventories for the core water distribution assets were based on information obtained through the Township's GIS records (end of the December 31, 2022) and estimated construction costs were provided by each class. Assets that were put into active service from subdivision developments were also considered within these inventories. A summary of the data sources is included below:

Table 4.4 – Data Sources for Inventory, Cost and Condition Analysis

Asset	Inventory	Replacement Value	Condition Estimate
Raw Water Intake	Excel Record Water Treatment	Historical Cost Inflated	Based on Remaining Useful Service Life
Treatment Plant / Plant Upgrades	Excel Record Water Treatment	Historical Cost Inflated	Based on Remaining Useful Service Life
Elevated Water Storage Tower	Excel Record Water Treatment	Historical Cost Inflated	Based on Remaining Useful Service Life
Water Mains	GIS	Unit Construction Costs ($/ m)	Based on Remaining Useful Service Life
Hydrants	GIS	Unit Construction Costs ($/unit)	Based on Remaining Useful Service Life
Valves	GIS	Unit Construction Costs ($/unit)	Based on Remaining Useful Service Life
Services	GIS	Unit Construction Costs ($/unit)	Based on Remaining Useful Service Life
Meters	Excel Records Finance	Unit Construction Costs ($/unit)	Based on Remaining Useful Service Life

4.5 Levels of Service

Levels of Service (LOS) are statements that describe the outputs and objectives that the Township intends to deliver through the services to its businesses, residents and other stakeholders. Developing, monitoring and reporting on LOS are all key components of a performance management program which has the core objective of improved service delivery, accountability and transparency in services.

LOS can be guided by many factors including customer expectations, regulatory requirements, or operational policies and procedures. An effective asset management plan requires a formal framework of performance measures, targets, and timeframes to achieve targets. It is furthermore crucial that the cost to deliver the documented Level of Service is fully understood.

In order to meet the requirements of the regulation, this AM plan update will discuss current LOS under community and technical LOS categories, defined as:

- **Community Levels of Service**: Qualitative descriptions that demonstrate the Township's customer and stakeholders' expectations of drinking water services.
- **Technical Levels of Service**: Technical metrics that translate customer expectations into objectives and performance measures.

Ontario Regulation 588/17 currently sets out the core LOS requirements that all municipalities must discuss and report on in Table 4.5 below.

Table 4.5 – O. Reg. 588/17 Prescribed LOS for Water Assets

Service Attribute	Community LOS (Qualitative)	Technical LOS (Performance Metric)
Scope	Description which may include maps, of the user groups or areas of the municipality that are connected to the municipal water system. Description which may include maps, of the user groups or areas of the municipality that have fire flow.	Percentage of properties connected to the municipal water system. Percentage of properties where fire flow is available.
Reliability	Description of boil water advisories and service interruptions.	The number of connection-days per year where a boil advisory notice is in place compared to the total number of properties connected to the municipal water system. The number of connection-days per year due to water main breaks compared to the total number of properties connected to the municipal water system.

4.5.1 Community Levels of Service

Table 4.6 – Qualitative Description of Water Assets

Service Attribute	Community LOS (Required by O. Reg. 588/17)	Qualitative Description
Scope	Description which may include maps, of the user groups or areas of the municipality that are connected to the municipal water system.	The Township of South Frontenac has a Municipal Drinking Water System that serves the Village of Sydenham. This system includes a surface water intake on Sydenham Lake, a water treatment plant, a 1.2 megalitre elevated storage tower, 7km of water main and serves approximately 229 metered customers. A map of the water network can be found in Appendix B1 of this report.
Scope	Description which may include maps, of the user groups or areas of the municipality that have fire flow.	The water network map shown in Appendix B1 shows all of the locations of hydrants in the Village of Sydenham. All hydrants in the village carry a rating

		of A (1000 – 1499 GPM) or AA (1500 GPM or greater)
Reliability	Description of boil water advisories and service interruptions.	The Township has not issued any boil order advisory in the last three years (2020/2021/2022). The Township has not had any water main breaks in the last two years (2020/2021/2022) that have resulted in loss of service.
Reliability	Overall asset condition – Water Distribution assets with a rating of Good or Very Good.	100%
Reliability	Overall asset condition – Water Treatment and Storage Assets with a rating of Good or Very Good.	83%

4.5.2 Technical Levels of Service

Table 4.7 – Technical Levels of Service for Water System

Service Attribute	Technical LOS (Required by O. Reg. 588/17)	Measurement
Scope	Percentage of properties connected to the municipal water system.	At the end of 2022 there were 229 metered accounts which are connected to the system and an additional 60 properties are in the service area that have access to the service. Total percentage is 79.5% (229 of 288)
Scope	Percentage of properties where fire flow is available.	All 288 properties currently serviced in the Sydenham Village are supplied with fire flow protection. Total percentage is 100% (288 of 288)
Reliability	The number of connection-days per year where a boil advisory notice is in place compared to the total number of properties connected to the municipal water system.	There were no boil water advisories in either 2021 or 2022. 0 Connection-Days/Year (2022) 0 Connection-Days/Year (2021)

Reliability	The number of connection-days per year due to water main breaks compared to the total number of properties connected to the municipal water system.	There were no water main breaks in either 2021 or 2022 that resulted in loss of service. 0 Connection-Days/Year (2022) 0 Connection-Days/Year (2021)
Efficiency	*Energy consumption per Megalitre in KwH/ML Treated (Not required by O Reg 588/17)	 2,399 KwH/ML Treated (2022) 3,077 KwH/ML Treated (2021) 3,295 KwH/ML Treated (2020)

*Performance metrics are not required by O Reg 588/17)

4.6 Lifecycle Strategies

The Township's ability to deliver the levels of service outlined in the AMP is impacted by numerous factors including:

a) Current and forecasted growth within the service area;
b) Changes in legislative requirements and the need for equipment to operate in compliance under the Safe Drinking Water Act, Municipal Drinking Water License, Drinking Water Works Permit, and other related approvals;
c) Aging infrastructure and the associated need for increased operations, maintenance and renewals; and
d) Availability of funding resources driven by customer use, utility revenues, development charges and federal/provincial grant programs.

The Township currently contracts Utilities Kingston as the System Operator for the Sydenham Drinking Water System which includes a Class 1 Water Distribution System and a Class 2 Water Treatment Facility. As part of this contract, numerous asset management strategies are applied that include the operations, maintenance, construction, renewal and decommissioning of assets. For further details refer to Tables 4.8 and 4.9 below:

Table 4.8 – Maintenance and Monitoring – Water Distribution

Asset Type	Operational Activities	
	Current	Additional / Potential
Water Mains	• Inspections and Flushing • Leak Detection (As Required)	
Hydrants	• Inspected and Flushed Annually • Fire Flow Testing (5yr Cycle)	
Line Valves	• Inspected and Exercised Annually	
Services	• Inspections and maintenance as required	• Cathodic Protection for early corrosion of copper services

Meters	• Readings Bi-Monthly • Maintenance as required	• Convert all meters to Radio Read (2 remaining)
Backflow Prevention	• Inspect and Maintain Devices at Tower and Treatment Plant by certified staff.	
Bulk Water	• None	• New bulk water station at water tower site

Table 4.9 – Maintenance and Monitoring – Facilities

Facility System	Examples of Components	Operational Activities	
		Current	Additional / Potential Activities
Building Structural	Foundation, roofing, exterior walls, columns, beams staircases	• Repairs prescribed and prioritized by condition assessments. Last assessment was 2019.	• Establish regularly scheduled Building Condition Assessments
Buildings Architectural	Non-structural building components such as windows, doors, fixtures and floor coverings	• Repairs prescribed and prioritized by condition assessments. Last assessment was 2019.	• Establish regularly scheduled Building Condition Assessments
Buildings Mechanical and Electrical	HVAC, plumbing, electrical, lighting, communications, security	• Repairs prescribed and prioritized by condition assessments. Last assessment was 2019.	• Explore energy retrofits • One high lift pump on VFD currently (2019)
Process Structural	Water storage tanks	• Internal/external inspections on elevated tower on a 3-5yr basis. • Tower drained and rehabilitated in 2019. • Clear well at water plant manually inspected by certified staff. Drained and cleaned every 5-7yrs). Three separate cells.	• Establish regularly scheduled Condition Assessments
Process Electrical	Generators and electrical systems	• Measure station voltage (3-4 years) • Load test diesel generator every 2 weeks • Generator maintenance every 6 months • Check batteries monthly • Reactive repairs as required	

Table 4.9 – Maintenance and Monitoring – Facilities (Continued)

Facility System	Examples of Components	Operational Activities	
		Current	Additional / Potential Activities
Process Mechanical	Low lift pumps, high lift pumps, motors and valves	• Bi-annual inspections. • Routine maintenance on motors on daily rounds. • Check, clean and exercise valves • Routine PM inspections and repair needed. • Pump rebuilds are planned and included in Long Term Capital Plan.	
Process Piping		• Repairs are generally reactive • Replacement of pneumatic actuated valves (2022)	• Replacement program needed for serpentine piping for chlorine contact time – ICIP Grant Program for 2024/2025
Instrumentation and Controls	Flow meters, chlorine regulators, pressure transmitters	• Chlorine systems have preventative maintenance • Third party calibration programs on analysers and lab equipment • Regular PM work orders	
Raw Water Intake	Pumps and seasonal zebra mussel control system	• Monitoring of intake performance and seasonal organics • Divers inspect intake on a 3-4 year cycle.	• Condition assessments at intake in Sydenham Lake
Filters	Ceramic Filter Media (Macrolite) / Granular Activated Carbon	• Daily performance, monitoring, repairs as needed. • Chemical cleaning of media on 6month cycle • Testing of filter media quality annually	

Table 4.10 – Rehabilitation and Renewal – Water Assets

Asset Type	Capital Renewal Activities	
	Current	Additional / Potential
Watermains	• Spot repairs as required – usually in response to leaks • Reconstruction at end of useful service life	• Monitor new and emerging trenchless renewal technologies
Hydrants, Valves and Services	• Repairs as required – usually at stage of road renewals • Reconstruction at end of useful service life	
Water Treatment	• Replacement at end of useful service life	• Operational redundancies implemented with major renewals
Water Storage	• Repairs and coatings on tanks – outcomes of remote camera video (ROV) inspections • Reconstruction at end of useful service life	
Water Facilities (Buildings)	• Rehabilitation work as recommended through detailed building condition assessments.	

4.7 Current and Forecasted Operating and Capital Costs

The estimated costing for lifecycle activities and capital for water assets are shown in the table below with an estimated $1.6 million over a period of 10 years.

Table 4.11 – Water System Lifecycle Costs and Capital Costs

Year	Capital Cost	Year	Capital Cost
2023	$42,000	2028	$42,500
2024	$314,000	2029	$13,000
2025	$963,980	2030	$50,000
2026	$39,500	2031	$47,500
2027	$37,500	2032	$47,500
		TOTAL	$1,597,480

5 Core Assets – Stormwater Management

This section of the AM Plan provides details on the number, age distribution and condition of the Township's stormwater management system assets including treatment facilities, storm pipes, structures (manhole, catchbasin, etc..) and culverts.

5.1 Asset Inventory

The Township of South Frontenac currently owns and manages numerous storm water treatment and collection systems across the Township. The bulk of these drainage assets can be found in the settlement areas where urban (curbed) road cross sections are more common. Between 2015 and 2020 the Township installed four stormwater treatment units as part of major drainage projects in the village of Bellrock (2), Sydenham (1) and Sunbury (1).

The Township continues to collect and update data on these assets and records all information within the Corporation's asset management software. Field inspections and condition assessments that are performed on these assets continue to improve the both the quality and accuracy of the data compiled on these systems.

The total estimated replacement value for existing stormwater management system assets (2022) included in this AM plan is estimated at 10.2 million dollars. These values are expressed in 2022 dollars and can be found in Table 5.1 below.

Table 5.1 – Stormwater Management Assets Details and Valuation

Subservice	Major Asset Group	Process – Sub Asset Group	Asset Quantity (2022)	Unit	Replacement Value (2022 $M)
Stormwater Management System	Stormwater Treatment	Manufactured Treatment Devices	4	ea	0.225
	Storm Sewers	Up to 250mm	0.327	km	0.106
		>250 to 500mm	7.140	km	2.943
		>500 to 1050mm	3.281	km	1.789
	Structures (Concrete)	Catchbasin	199	ea	0.697
		Catchbasin Manhole	99	ea	0.634
		Double Catchbasin	40	ea	0.232
		Double Catchbasin Manhole	11	ea	0.098
		Ditch Inlet	29	ea	0.157
		Manhole	20	ea	0.124
	Culverts (<3m dia)	*Culverts	14	ea	3.191

*Note Inventory in progress.

5.2 Profile and Age of Assets

The Township carried out extensive research on the age of its stormwater management assets as part of the 2016 Asset Management Plan update and that data continues to improve over time with the implementation of the new AM software platforms. The details provided in Figures 5.1 and 5.2 shows the representation of the respective age distribution for stormwater treatment and stormwater collection assets.

Figure 5.1 – Age Profile – Stormwater Treatment Unit Assets

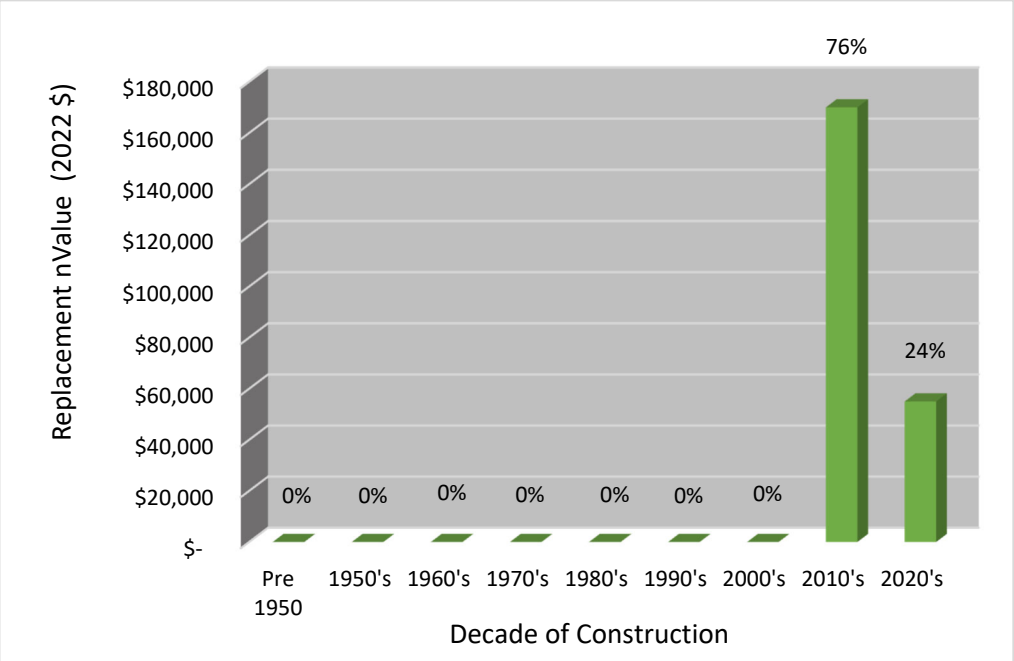
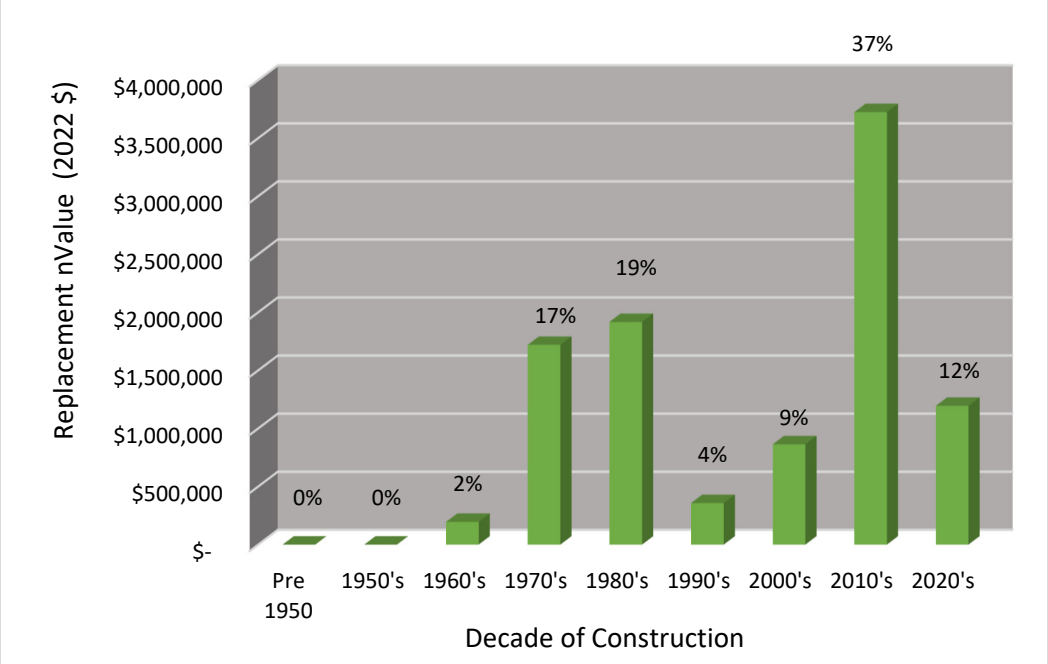


Figure 5.2 – Age Profile –Storm Collection Assets



Note: Age on culvert data insufficient for compiling with storm collection assets.

Table 5.2 – Core Stormwater Asset Age

Subservice	Major Asset Group	Process – Sub Asset Group	Useful Service Life (yrs)	Average Age (2022)	Estimated Remaining Service Life (2022)
Stormwater Management System	Stormwater Treatment	Stormwater Treatment Units – Oil Grit Separator	50	4.7	45.3
	Stormwater Collection	Concrete, HDPE and PVC Storm Pipe	80	22.9	57.1
		Corrugated Steel Storm Pipe	50	33.4	16.6
		Stormwater Structures (MH, CB, DI etc…)	80	26.4	53.6

5.3 Asset Conditions and Ratings Systems

The condition rating for stormwater treatment assets was established by evaluating the useful service life remaining. The amount of remaining useful life on all of the assets has been updated from the 2016 AMP and has been correlated to the condition rating schedule below.

Table 5.3 – Five Point Condition Rating System

Remaining Useful Life (%)	Description
80 to 100	Very Good
60 to < 80	Good
40 to < 60	Fair
20 to < 40	Poor
0 to < 20	Very Poor

Based on the scoring scale of remaining useful service life, it was found that 100% of the Township's stormwater treatment assets have a rating of very good or good condition. The stormwater collection system however only has 59% of the assets with a very good or good

condition rating. This is largely due to the fact that a significant portion of the networks were built in the 70's and 80s and are comprised of corrugated steel pipe.

Figures 5.3 and 5.4 below show the current ratings for both major systems.

Figure 5.3 – Condition Ratings – Stormwater Treatment Units

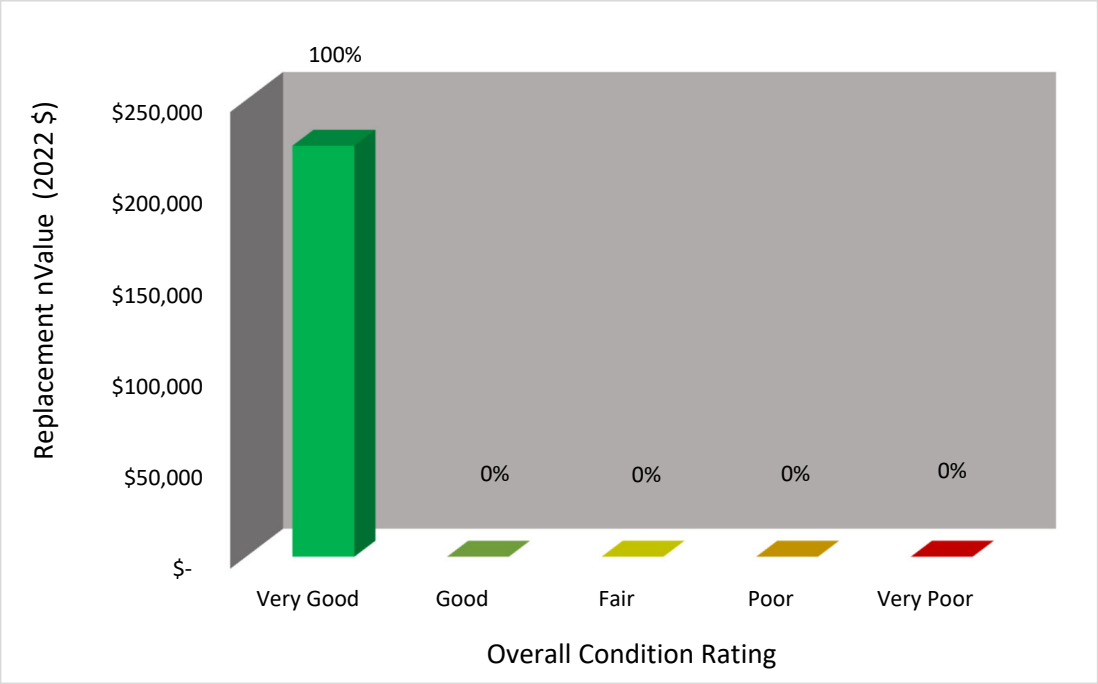
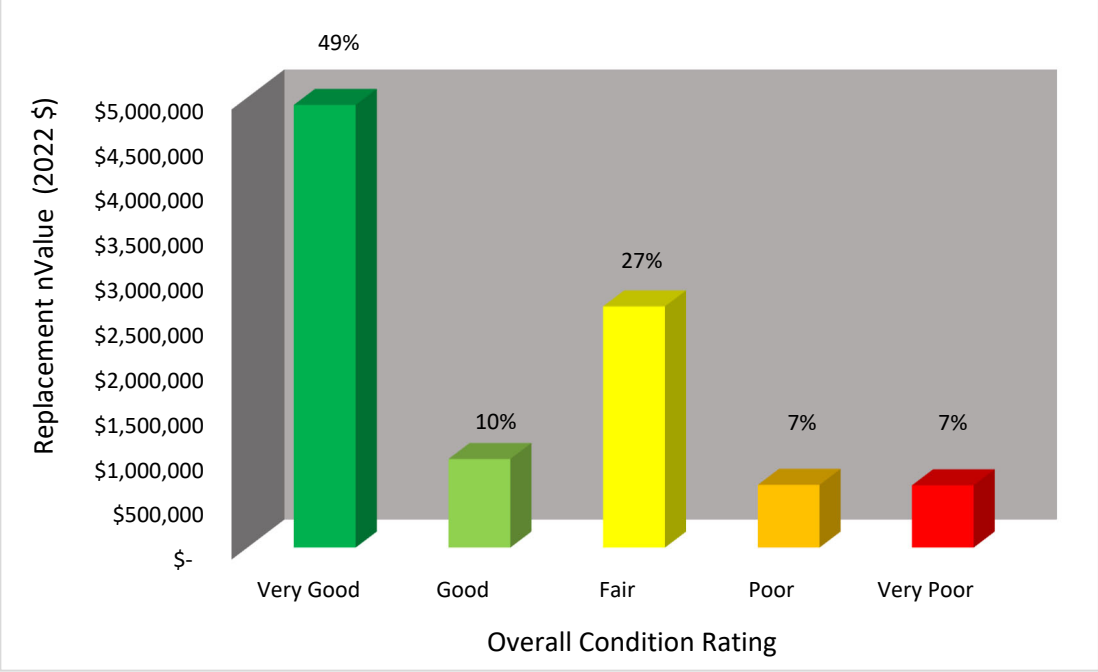


Figure 5.4 – Condition Ratings – Stormwater Collection Assets



5.4 Data Sources

The inventories for the core stormwater management assets were based on information obtained through the Township's GIS records (end of the December 31, 2022) and estimated construction costs were provided by each class. Assets that were put into active service from subdivision developments were also considered within these inventories. A summary of the data sources is included below:

Table 5.4 – Data Sources for Inventory, Cost and Condition Analysis

Asset	Inventory	Replacement Value	Condition Estimate
Stormwater Treatment Units / Oil Grit Separators	GIS	Unit Construction Costs ($/ m)	Based on Remaining Useful Service Life
Storm Pipe	GIS	Unit Construction Costs ($/ m)	Based on Remaining Useful Service Life
Stormwater Structures (MH, CB and DI)	GIS	Unit Construction Costs ($/unit)	Based on Remaining Useful Service Life

5.5 Levels of Service

Levels of Service (LOS) are statements that describe the outputs and objectives that the Township intends to deliver through the services to its businesses, residents and other stakeholders. Developing, monitoring and reporting on LOS are all key components of a performance management program which has the core objective of improved service delivery, accountability and transparency in services.

LOS can be guided by many factors including customer expectations, regulatory requirements, or operational policies and procedures. An effective asset management plan requires a formal framework of performance measures, targets, and timeframes to achieve targets. It is furthermore crucial that the cost to deliver the documented Level of Service is fully understood.

In order to meet the requirements of the regulation, this AM plan update will discuss current LOS under community and technical LOS categories, defined as:

- **Community Levels of Service**: Qualitative descriptions that demonstrate the Township's customer and stakeholder's expectations of drinking water services.
- **Technical Levels of Service**: Technical metrics that translate customer expectations into objectives and performance measures.

Ontario Regulation 588/17 currently sets out the core LOS requirements that all municipalities must discuss and report on in Table 5.5 below.

Table 5.5 – O. Reg. 588/17 Prescribed LOS for Stormwater Assets

Service Attribute	Community LOS (Qualitative)	Technical LOS (Performance Metric)
Scope	Description which may include maps, of the user groups or areas of the municipality that are protected from flooding, including the extent of the protection by the municipal stormwater management system.	Percentage of properties in municipality resilient to a 100-year storm. Percentage of the municipal stormwater management system resilient to a 5-year storm.

5.5.1 Community Levels of Service

Table 5.6 – Qualitative Description of Stormwater Assets

Service Attribute	Community LOS (Required by O. Reg. 588/17)	Qualitative Description
Scope	Description which may include maps, of the user groups or areas of the municipality that are protected from flooding, including the extent of the protection by the municipal stormwater management system.	The Township of South Frontenac has numerous stormwater collection and treatment systems throughout the municipality. Most of these systems are found in the villages and hamlets where urban road treatments present. Maps of the Stormwater network can be found in Appendix C1 of this report.
Reliability	*Stormwater Treatment assets with a rating of Good or Very Good.	100%
Reliability	*Stormwater Collection Assets with a rating of Good or Very Good.	59%

*Reliability metrics are not required by O Reg 588/17)

5.5.2 Technical Levels of Service

Table 5.7 – Technical Levels of Service for Stormwater System

Service Attribute	Technical LOS (Required by O. Reg. 588/17)	Measurement
Scope	Percentage of properties in municipality resilient to a 100-year storm.	NOTE: The metrics from Asset Management Ontario state that inputs for this metric include flood mapping and parcel mapping. Local street and subdivision drainage plans are also included where major overland flow routes are provided. At present, there is insufficient information to accurately report a network level. The acquisition of updated LiDAR mapping by the County, lower tier municipalities and conservation authorities in 2023 will help support development of these metrics. A comprehensive stormwater management plan looking at serviced areas (villages/hamlets) would also support these climate change initiatives.
Scope	Percentage of the municipal stormwater management system resilient to a 5-year storm.	NOTE: The metrics from Asset Management Ontario state that inputs for this metric include the proportion of the system that has been constructed or re-constructed to updated standards. A review of the past Environmental Compliance Approval records for the Township has confirmed that Ministry ECA approvals can be found for approximately 2,455m of the network confirming that design standards were met for the minor (5yr) and major (100yr) events. This information places the current metric at 22.7%.

5.6 Lifecycle Strategies

The Township's ability to deliver the levels of service outlined in the AMP is impacted by numerous factors including:

a) Current and forecasted growth within the service area;
b) Changes in legislative requirements and the need for equipment to operate in compliance under the Environmental Protection Act, Ontario Water Resources Act, Environmental Compliance Approvals and other related approvals;
c) Aging infrastructure and the associated need for increased operations, maintenance and renewals; and
d) Availability of funding resources driven by taxation, development charges and federal/provincial grant programs.

For further details on lifecycle activities on the stormwater network refer to Tables 5.8 and 5.9 below:

Table 5.8 – Maintenance and Monitoring – Stormwater Management

Asset Type	Operational Activities	
	Current	Additional / Potential
Stormwater Treatment Units	• Inspections annually • Test, clean and remove sediments and hydrocarbons	
Stormwater Mains	• Visual inspection at exposed ends during catchbasin cleaning	• Establish a committed annual CCTV program
Catch basins	• Inspected and Cleaned Annually	
Manholes	• Inspections and maintenance as required	• Spring and Fall inspections
Inlets / Outlets	• Inspections and maintenance as required	• Spring and Fall inspections

Table 5.9 – Rehabilitation and Renewal – Stormwater Management

Asset Type	Capital Renewal Activities	
	Current	Additional / Potential
Stormwater Treatment Units	• Spot repairs as required – usually at the stage of road renewals • Reconstruction at end of useful service life	

Stormwater Mains and Structures	• Spot repairs as required – usually at stage of road renewals • Reconstruction at end of useful service life	• Develop & implement committed annual trenchless lining programs • Develop & implement committed annual structure repair program
Culverts	• Replacements on larger culverts (1-3) based on monitoring programs • Culverts renewed with road reconstruction activities	• Improve resources for data collection to support inventory and spatial records on cross culverts • Develop & implement committed annual culvert lining programs on major roadways

5.7 Current and Forecasted Operating and Capital Costs

The estimated costing for lifecycle activities and capital for stormwater assets are shown in the table below with an estimated $0.68 million over a period of 10 years.

Table 5.10 – Stormwater Asset Lifecycle Costs and Capital Costs

Year	Capital Cost
2023	$274,350
2024	$0
2025	$43,297
2026	$154,730
2027	$0
2028	$216,360
2029	$0
2030	$0
2031	$0
2032	$0
TOTAL	$688,737

6.0 Asset Management Strategy

6.1 Asset Management Strategy

This asset management strategy component of the AMP represents the set of planned activities to ensure that the state of the infrastructure achieves the level of service goals. The strategy is generally related to optimizing decisions with respect to:

- The replacement or rehabilitation of assets
- The optimal level of maintenance investment required to minimize the long-term costs of the assets (i.e., does more maintenance result in a longer useful life?)
- Disposing of assets that are not required to meet service levels; and
- Addressing Township policies that impact the infrastructure intervention that is used (i.e., does the asset size/design need to change to meet a certain policy?)

6.2 Risk Management

The AMP establishes the management of risk as the primary method for developing an asset management strategy. This strategy is to prioritize the renewal of infrastructure that represents a high risk to the Township. However, these priorities are also adjusted or shifted for financial efficiencies, to create capacity, optimize asset life, as well as external influences. The risk management strategy develops a renewal plan that is based on addressing the highest risk assets first according to the state of the infrastructure.

6.2.1 Probability of Failure

A probability of failure was given to each asset based on the condition ratings discussed in the Technical Levels of Service. The probability of an asset failing is not necessarily indicative of its age. As part of the review of transportation assets, the PCI and BCI inspection ratings heavily inform the probability of failure however other assets like underground watermains cannot be readily inspected therefore remaining useful life is considered. Table 13 below shows the probability of failure score that was assigned to each asset based on the estimate of its physical condition and age.

Table 6.1 – Probability of Failure Score

Estimated Condition	Probability of Failure Description	Probability of Failure Score
Very Good	Improbable	1
Good	Not Likely	2
Fair	Possible	3
Poor	Likely	4
Very Poor	Very Probable	5

6.2.2 Consequence of Failure

The consequence of failure score for each asset was based on a review of information on the asset such as:

- Risk to public health and safety
- Duration of interruption of service
- Potential for environmental damage
- Value of the asset
- Council Priority

Table 6.2 shows the failure of consequence scorings and provides descriptions of each.

Table 6.2 – Consequence of Failure Score

Probability of Failure Description	Consequence of Failure Score
Very low measurable impact of any kind.	1
Low/seldom/marginal impact on the function, serviceability, or capacity of the asset and (or) effect on public safety and the environment.	2
Moderate/regular impact on the function, serviceability, or capacity of the asset and (or) effect on public safety and the environment.	3
Major/regular impact on the function, serviceability, or capacity of the asset and (or) effect on public safety and the environment.	4
Catastrophic loss of infrastructure affecting public safety or having severe environmental consequences.	5

6.2.3 Risk Assessment Matrix

A risk score between 1 and 25 was calculated for each asset by multiplying the probability of failure score and the consequence of risk score. Assets with known safety risks were noted and given higher priority for replacement. Figure 6.1 and Table 6.3 below provide the details of the current risk assessment matrix.

Figure 6.1 – Risk Matrix

Score of 1 to 3 – low level risk
Score of 4 to 6 – medium-low level risk
Score of 8 to 9 – medium level risk
Score of 10 to 15 – medium-high level risk
Score of 16 to 25 – high level of risk

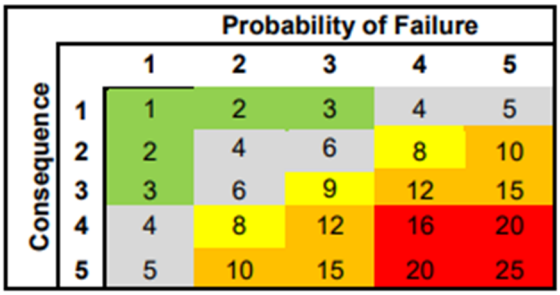


Table 6.3 – Renewal Strategy based on Risk

Risk Category	Risk Score	Replacement Term	Replacement Years
High	16 - 25	Short Term	Year 1 to 5
Medium	10 – 15	Medium Term	Year 6 to 10
Medium Medium – Low Low	7 – 9 4 – 6 1 - 3	Long Term – regular planned renewal based on condition, age of asset, expected useful life or when asset reaches a higher risk level (i.e., probability of consequence or failure increases)	

The strategy to prioritize the renewal of infrastructure that represents a high risk to the Township should be continued or expanded. The Township should continue to consider other factors when prioritizing asset replacement such as health and safety, accessibility, complimentary asset replacement (bundling assets such as road reconstruction with storm sewers and watermains) as well as upgrades/improvements including intersections, public safety, growth or capacity related demands. The replacement strategies established through asset management software considers complimentary asset replacement to optimize use of resources and minimize disruption to the community. Appendix D1 provides risk rating systems, many of which continue to be in place from the 2016 AMP plan.

As part of the 2023 Core Asset review, all of the asset groups were analyzed and were updates for condition ratings and risk distribution. Figure 6.2 below shows the overall condition ratings for the system. Figure 6.3 shows the same asset groups with the risk ratings presented by area. Overall, the Township has a lower risk distribution in the water

and storm sewer areas however there is a higher risk distribution of risk in the area of roads and bridges.

Figure 6.2 – Overall Core Asset Condition Ratings

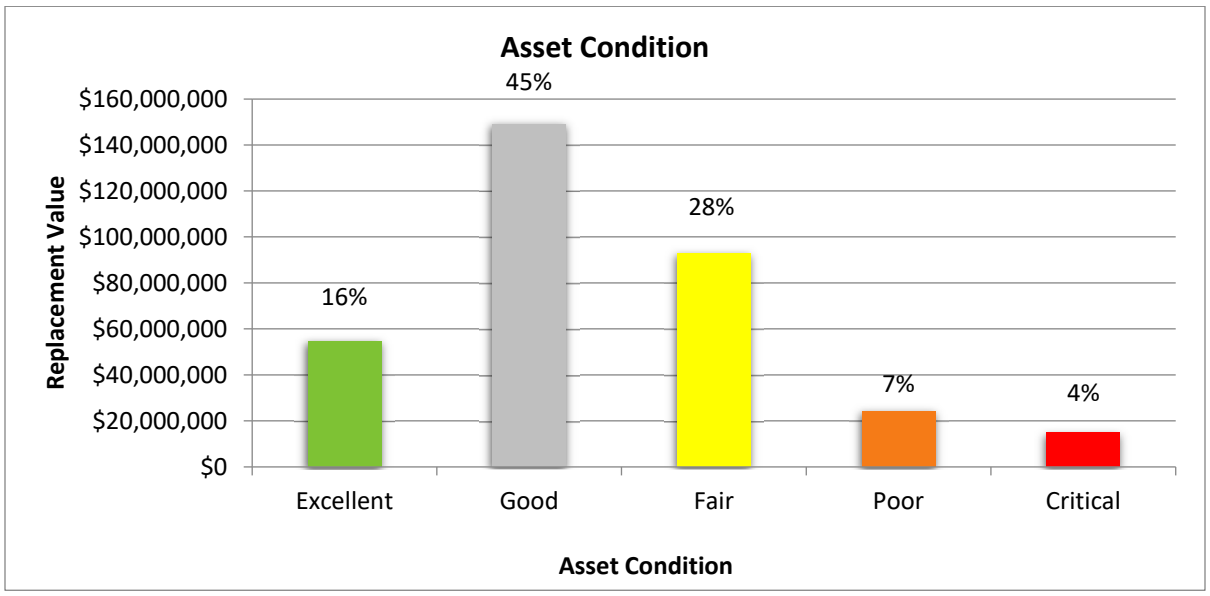
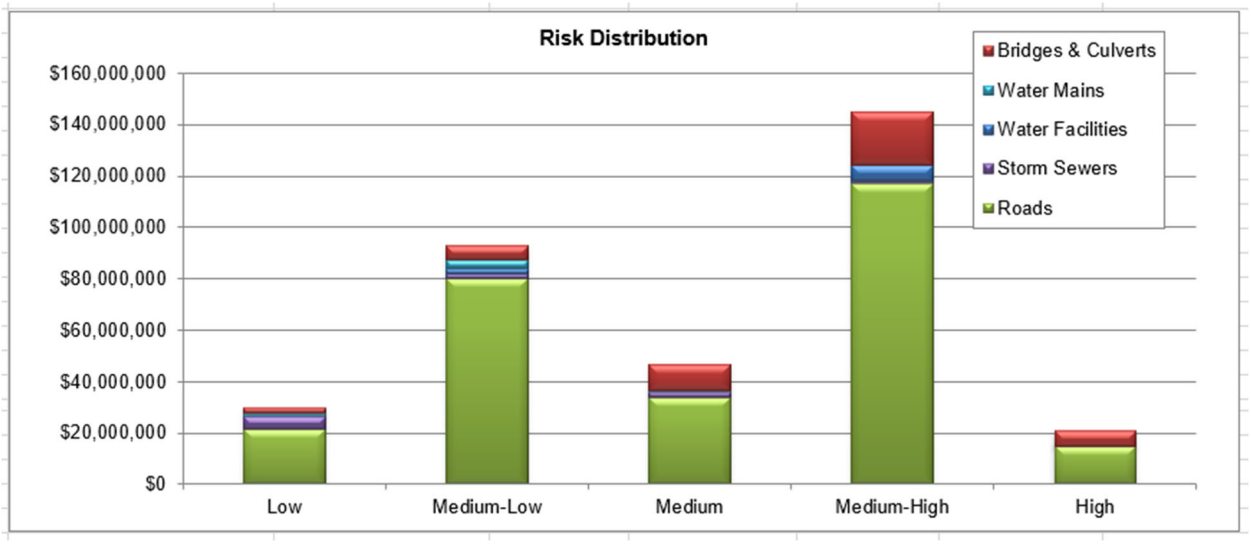


Figure 6.3 – Overall Core Asset Risk Distribution

			Risk Distribution				
	Replacement Cost	Distribution	Low	Medium-Low	Medium	Medium-High	High
Roads	$267,210,200	80%	$21,315,100	$79,860,350	$33,817,450	$117,278,800	$14,938,500
Bridges & Culverts	$45,043,714	13%	$2,205,000	$5,584,004	$10,371,860	$20,733,650	$6,149,200
Water Facilities	$8,372,183	2%	$0	$2,021,433	$0	$6,350,750	$0
Water Mains	$4,847,116	1%	$1,105,258	$3,389,453	$352,404	$0	$0
Storm Sewers	$10,194,159	3%	$5,090,291	$2,102,327	$2,151,997	$802,693	$46,851
Total	$335,667,371	100%	$29,715,649	$92,957,566	$46,693,711	$145,165,893	$21,134,551
% of Total			8.9%	27.7%	13.9%	43.2%	6.3%



7.0 Financing Strategy

The Township's asset management plan total assets for the next 10 years align with amounts in the Township's Long Range Financial Plan. This is important, as the decisions of the current Council regarding financing of these assets, must prepare for the future costs of the assets. As indicated before, Council must continue to grow reserves now, in order to ensure there is enough funding in place for future years as the infrastructure needs renewal.

Further update to this plan to add non-core assets and predict future levels of service will increase the financing requirements for the asset renewals. The current Long Range Financial Plan will need to be updated and consideration given to a larger portion of the annual tax base being allocated to reserves for these projected costs. The current annual capital levy funds current levels of service but will be inadequate in the future beyond the next 4 years.

7.1 Sources of Funding

There are many sources of funding, besides the annual tax levy, and these may include:

- Debt
- Reserves
- User Rates
- Canada Community Building Fund ("CCBF") (formerly Federal Gas Tax)
- Ontario Community Infrastructure Fund ("OCIF")

From time to time the Federal and Provincial governments will also announce one-time funding such as the Investing in Canada Infrastructure (ICIP) grants. The province of Ontario is announcing in 2024 the Housing Enabling Water Systems Fund, which may also assist with Financing core Water assets, however if the funding is for growth, like Development Charges, those funds will not assist with the assets listed in this plan.

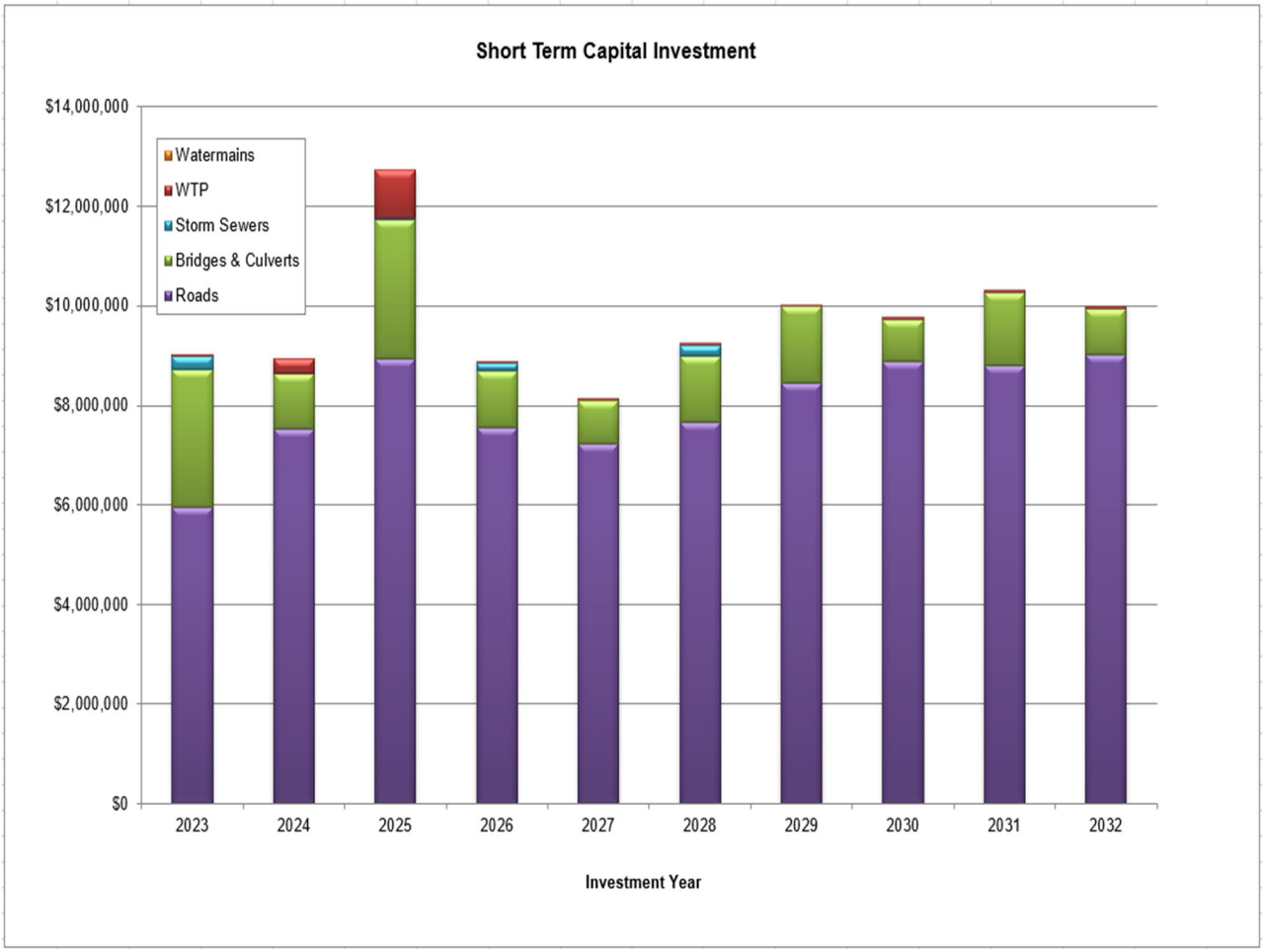
The Township of South Frontenac provides funding for assets through two sources of revenue: Water User Fees and Municipal Tax Levy. Further, assets are also funded through existing reserves. The financing strategy supports this method of operating by addressing Water and other assets separately.

In 2012, South Frontenac approved a 1% tax levy increase, compounded yearly, which goes into the Asset Investment Reserve. This strategy is a proactive way to deal with infrastructure deficit, and is a best practice recommended by all regulatory agencies. The amount of the annual levy increase of 1% will not be sufficient, based on this asset management plan to fund replacement of assets. While it has helped to offset capital expenditures for tax supported assets for the past 10 years, for the next 10, it will not be sufficient, and Council will have to review the annual contribution.

7.2 Short Term Funding Strategy

The strategy to prioritize the renewal of infrastructure that represents a high risk to the Township should be continued and expanded. Figure 7.1 below illustrates the 10 year capital investment needs for the Township's Core Assets using the risk-based approach. Over the next 10 years, the Township should spend an average of $9.7 million per year to address the infrastructure needs (in constant 2022 dollars).

Figure 7.1 – 10 year Core Asset Capital Investment Needs



7.1.1 Water Assets

The water treatment plant, water storage facility and water mains were constructed in the past 20 years; as such, these assets are not expected to require major capital replacement in the short term.

In 2014, The Township implemented a rate change which has already reduced the deficit. The Revenues and Capital Expenditures for water infrastructure over the next 10 years are displayed in Figure 7.1.1.

Figure 7.1.1 Short Term Capital Expenditures (Water Assets)

Year	Opening Balance	Expenditures	Capital Levy	Ending Balance
2023	1,562,158	314,000	165,949	1,414,107
2024	1,414,107	963,980	166,298	616,425
2025	616,425	3,500	166,626	779,552
2026	779,552	39,500	166,931	906,983
2027	906,983	37,500	167,213	1,036,696
2028	1,036,696	42,500	167,213	1,161,409
2029	1,161,409	13,000	167,213	1,315,621
2030	1,315,621	50,000	167,213	1,432,834
2031	1,432,834	47,500	167,213	1,552,547
2032	1,552,547	47,500	167,213	1,672,260
Total		**1,558,980**		

7.1.2 Tax Supported Assets

Tax supported infrastructure includes roads, bridges, culverts and storm sewers. The Revenues and Capital Expenditures for tax supported infrastructure over the next 10 years are displayed in Figure 7.1.2.

Over the course of the next 10 years the current Tax Supported Capital Levy is sufficient to finance the Asset Management Plan expenditures. However, the AMP needs to be reviewed on a regular basis as it presents yearly capital expenditures based on their priorities from condition and risk and further does not reflect the savings from strategies already being used such as pavement preservation and joint tendering.

Increases in the annual amount allocated to the Asset Investment Reserve on an annual basis by increasing the tax levy and changes in revenues from government sources such as the CCBF and OCIF funds are not included in the calculations below.

Year	Opening Balance	Expenditures	Tax Levy (AIR) & in year taxation	Reserves & Funding	Ending Balance
2023	7,842,164	8,984,850	3,652,016	4,368,358	6,877,688
2024	6,877,688	8,627,700	3,834,617	4,586,776	6,671,381
2025	6,671,381	11,762,157	4,026,348	4,816,115	3,751,687
2026	3,751,687	8,845,980	4,227,665	5,056,921	4,190,293
2027	4,190,293	8,103,640	4,439,048	5,309,767	5,835,468
2028	5,835,468	9,209,860	4,661,000	5,575,255	6,861,863
2029	6,861,863	9,989,448	4,894,050	5,854,018	7,620,483
2030	7,620,483	9,734,150	5,138,753	6,146,719	9,171,805
2031	9,171,805	10,276,250	5,395,691	6,454,055	10,745,301
2032	10,745,301	9,933,500	5,665,476	6,776,758	13,254,035
TOTAL		**95,467,535**			

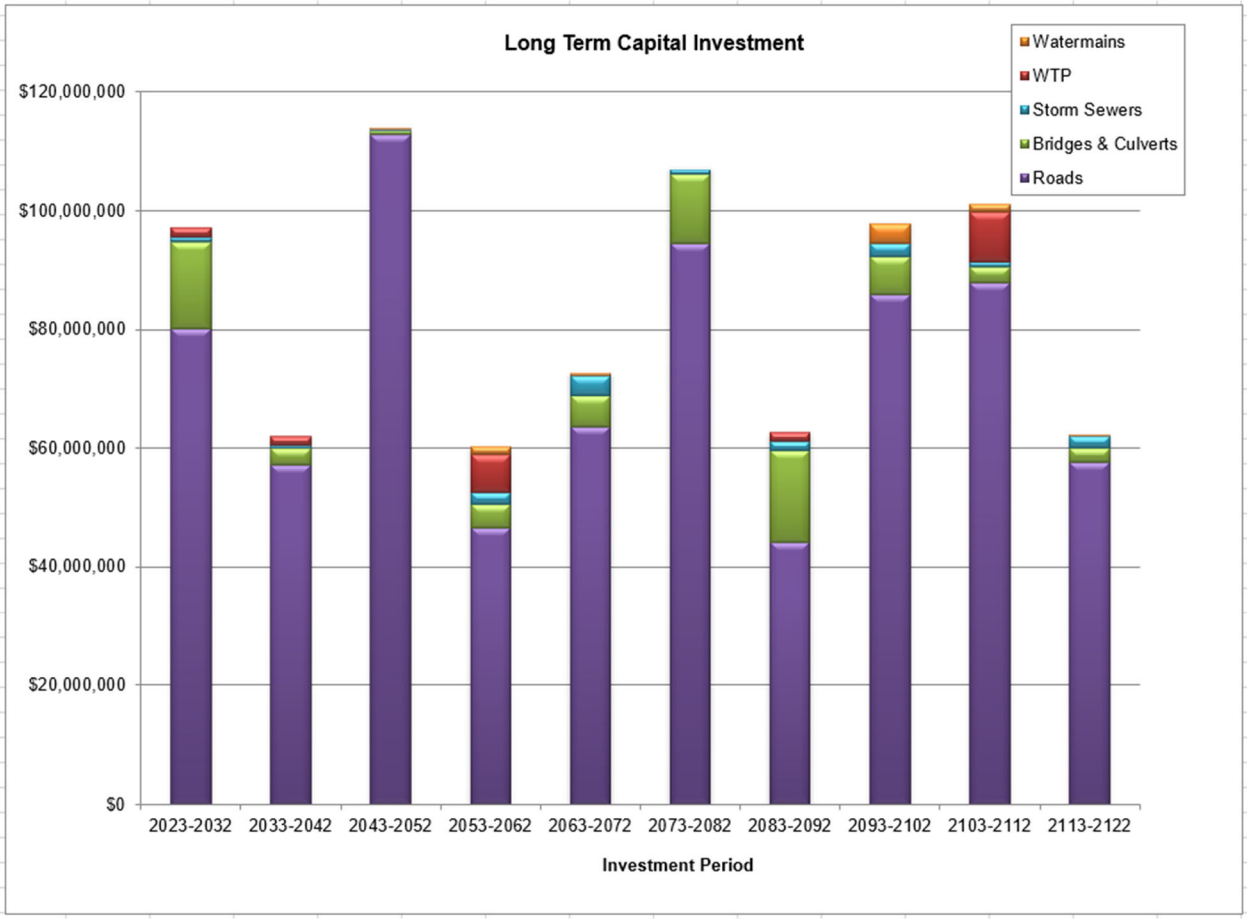
7.3 Long Term Financing Strategy

Long-term investment over the next 100 years must be considered to plan the replacement of assets with longer lifecycles. Buried infrastructure such as storm sewers and water mains are expected to have a useful life of 80 to 100 years and may last even longer. Similarly, newly constructed water facilities have expected useful lives of 100 years. To capture replacement of all assets the full life cycle period must be considered.

Long-term investment associated with replacement needs for first, second, and third replacements over the next 100 years were based on condition, age and remaining useful life.

Figure 7.2 below illustrates the 100-year capital investment needs for the Township's Core Assets based on a strategic review of the replacement cost and theoretical useful life of each core asset group.

Figure 7.2 – 100 year Core Asset Capital Investment Needs



Based on this review, the existing core infrastructure needs are approximately $8.3 million per year (in constant 2022 dollars) to be sustained using this strategic approach.

7.4 A Living Document

The Asset Management Plan is a “living document” that is updated annually to ensure all core assets are captured in inventories with the respective valuation. Information on the condition of assets will be updated regularly along with the risk profiled and project priorities may therefore be changed at the discretion of Council. The 2023 Asset Management Plan - Core Asset Update is intended to be a guiding document as part of the development of annual budgets and long-term capital plans.

8.0 Conclusions and Recommendations

The Township's Asset Management Plan, relating to the core infrastructure identifies a long-term need of $8 – $10 million per year to renew the Township's infrastructure for core assets in the scope of this study. Asset renewal in the short term should be prioritized to minimize risk and address health and safety concerns.

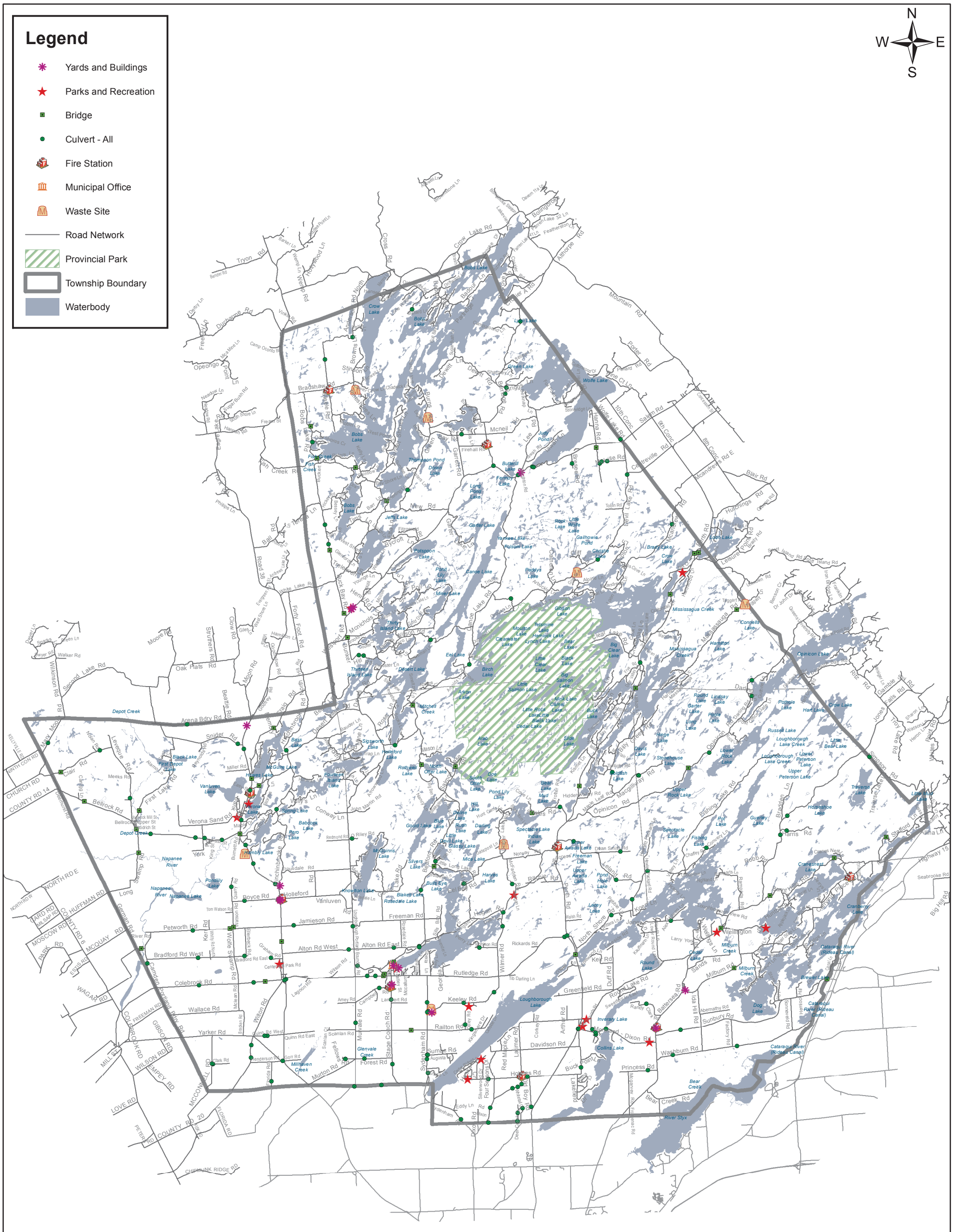
The Township has taken a proactive approach in addressing infrastructure needs by setting aside reserve funds to minimize deficits, approving levy increases to cover future deficits and investing in asset management software to better understand infrastructure conditions, risk and replacement needs. The Township is committed to maintain an up-to-date asset management database and prioritizing asset repair, replacement and rehabilitation. Further it is committed to using preventative strategies, joint tendering and continued investigations in emerging technologies. The Township is in a better position financially than many municipalities in Ontario and should continue to engage in forward thinking through financial planning.

The Township provides funding for core assets through two sources of revenue: Water User Fees and Municipal Tax Levy. Reserves are also used as a source of funding. Both in the short term and the long term, the financing strategies being used including the use of a long-range financial plan puts the Township in a position to meet future requirements.

Over the coming years, the Township will continually review the infrastructure needs as more information is gathered. The Township will continue to set aside funds for asset replacement, built appropriate depreciation costs into future water rate adjustments, and continue to pursue Provincial and Federal Grants. The strategy positions the Township on a path to ultimately reach a point where the infrastructure needs equal the available revenues.

Appendix A1

Township of South Frontenac



Appendix A-2

Typical Road Class Pavement Conditions

Pavement condition index (PCI) is a rating system that measures the condition of the roadway. It uses two components: a ride comfort rating (RCR) and a distress manifestation index (DMI). The DMI is a visual inspection that rates the road based on physical condition of, and/or damage to the road (pavement and shoulders).

See figures below for images of road conditions within the Township.

Figure A-2.1 – Very Good (85 to 100 PCI) – Sunbury Road – Factory Road to Battersea Road

Figure A-2.2 – Good (70 to < 85 PCI) – Bellrock Road –0.8km West of Mill Street to Long Swamp Road

Figure A-2.3 – Fair (55 to < 70 PCI) - Rutledge Road – 2.2km East of Sydenham Road to Perth Road

Figure A-2.4 – Poor (40 to < 55 PCI) - Bellrock Road – Cross Road to Road 38 (Prior to Reconstruction)

Figure A-2.5 – Very Poor (0 to < 40 PCI) – Bedford Road – 1km North of Salmon Lake Road to Desert Lake Road

Appendix A-3

Bridge and Large Culvert Conditions

The Bridge Condition Index (BCI) provides an indication of the general overall condition of the bridge or structure culvert (3m plus span). It consists of an inspection by a professional engineer according to the Ontario Structural Inspection Manual which includes up to 55 structural elements.

The BCI is grouped into five categories of Very Good, Good, Fair, Poor and Very Poor. Photos provided below show examples of bridges and culverts in the categories of Good, Fair and Poor.

Figure A-3.1 – Example of Good Condition Bridge – Loughborough Lake Bridge - 1.0km South of Rutledge Road (BCI 74.6)

Figure A-3.2 – Example of Fair Condition Bridge – Rutledge Road Bridge – 0.03km West of George Street (BCI 65.0)

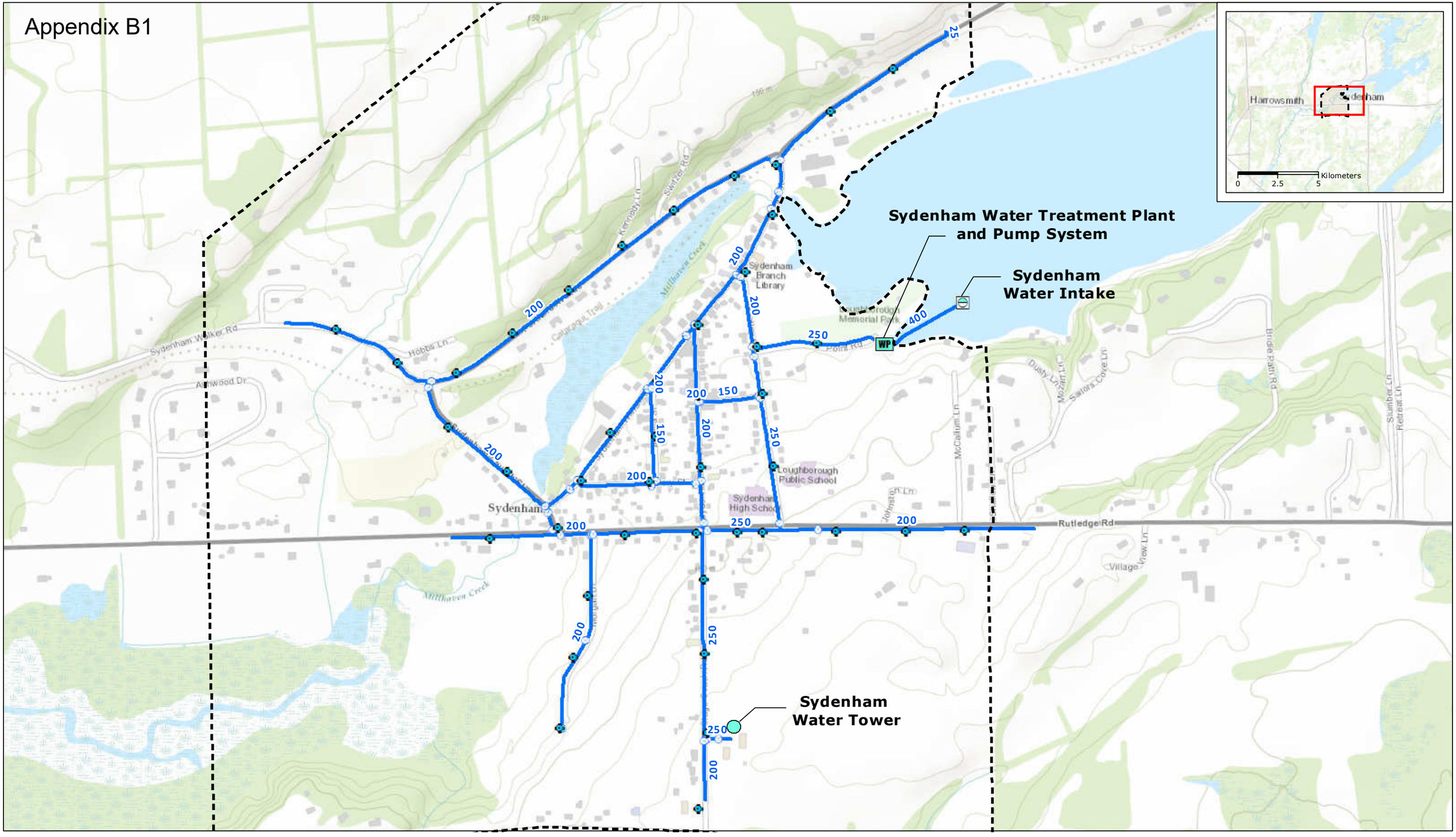
Figure A-3.3 – Example of Poor Condition Bridge – Eagle Creek Bridge – 2.2km North of Buck Bay Road (BCI 38.5)

Figure A-3.4 – Example of Good Condition Culvert – Massassauga Road Culvert – 5.1km East of Perth Road (BCI 92.1)

Figure A-3.5 – Example of Fair Condition Culvert – Colebrooke Road Culvert – 0.9km West of Road 38 (BCI 63.8)

Figure A-3.6 – Example of Poor Condition Culvert – Little Long Lake Road 3.2km North of Freeman Road (BCI 41.3)

Appendix B1



Distribution System Map
Sydenham Water System

Utilities Kingston

Legend

- Hydrant (43)
- Valve (41)
- Watermain
- Sydenham Boundary

N

Utilities Engineering - GIS

1:7,500

0 100 200 300 400 m

Utilities Kingston - 85 Lappan's Lane, Kingston, ON PO Box 790
K7L 4X7 - Utilities_GIS@utilieskingston.com - 613-546-1181

Revision: 1
Units: Meters
CRS: NAD 1983 UTM Zone 18N

Producer: jdonald
Reviewer: J. Runions
Created: 2020-01-09
Modified: 2022-09-07

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STORM SEWER COLLECTION SYSTEM

VILLAGE OF INVERARY
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

- Road
- Rivers
- Hamlet
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel

*Hamlet falls within the Cataraqui Region Conservation Authority.

0 5 10 20 30 40 50
Meters
UTM Zone 18 NAD 83

DRAWING #: SWM-01

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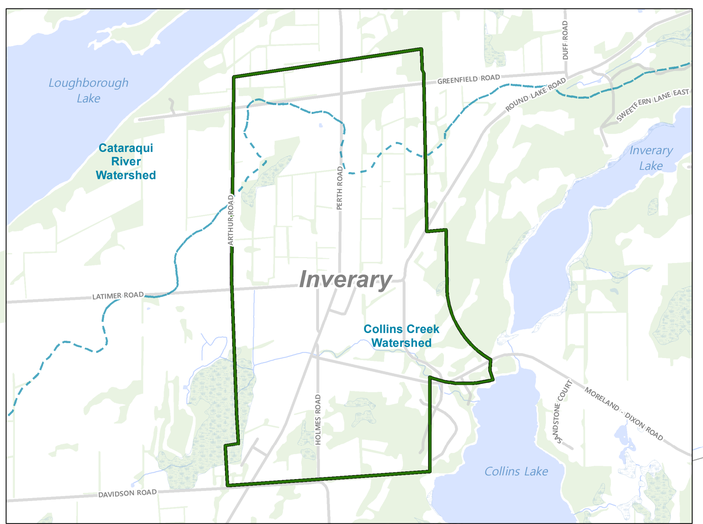

Appendix C1

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STORM SEWER COLLECTION SYSTEM

PERTH ROAD VILLAGE
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

- Road
- Rivers
- Hamlet
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel

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Meters
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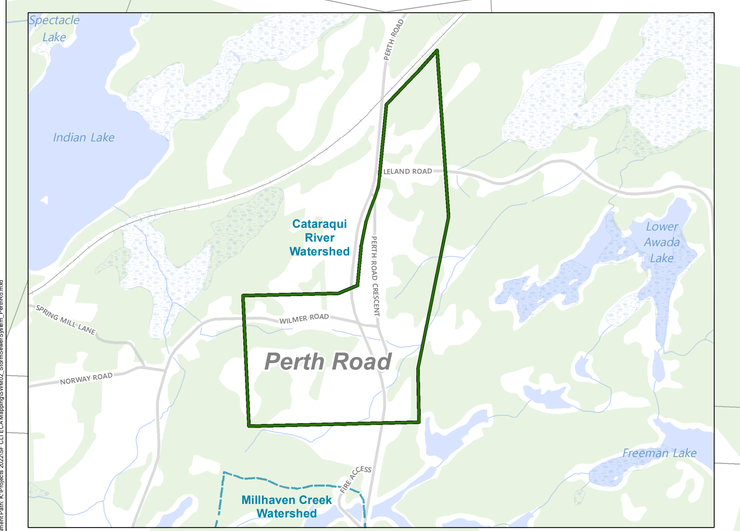

SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

RAYMONDS CORNERS
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

- Road
- Railway
- Hamlet
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel

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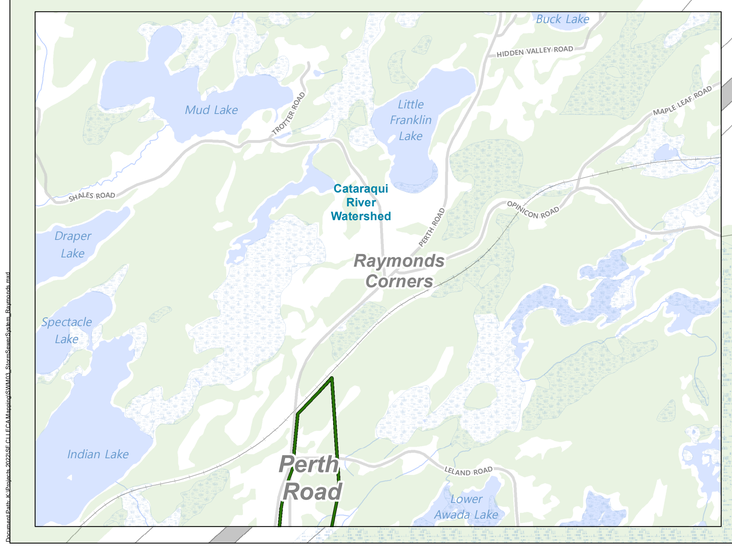

SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

BATTERSEA ROAD VILLAGE
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

- Road
- Provincially Significant Wetlands
- Wetland
- Rivers
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel
- Hamlet
- Township Boundary

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Meters
UTM Zone 18 NAD 83

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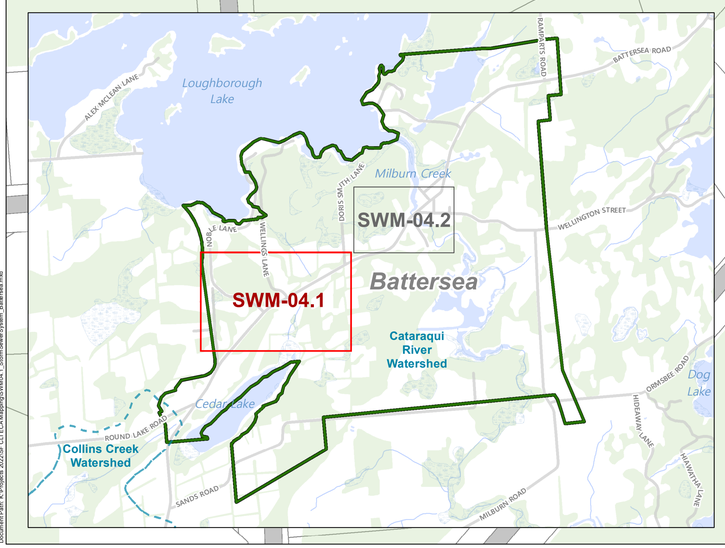

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DORIS SMITH LANE
BATTERSEA ROAD
WELLINGS LANE
NOBLE LANE

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SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

BATTERSEA ROAD VILLAGE
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

- Road
- Rivers
- Hamlet
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel

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Meters
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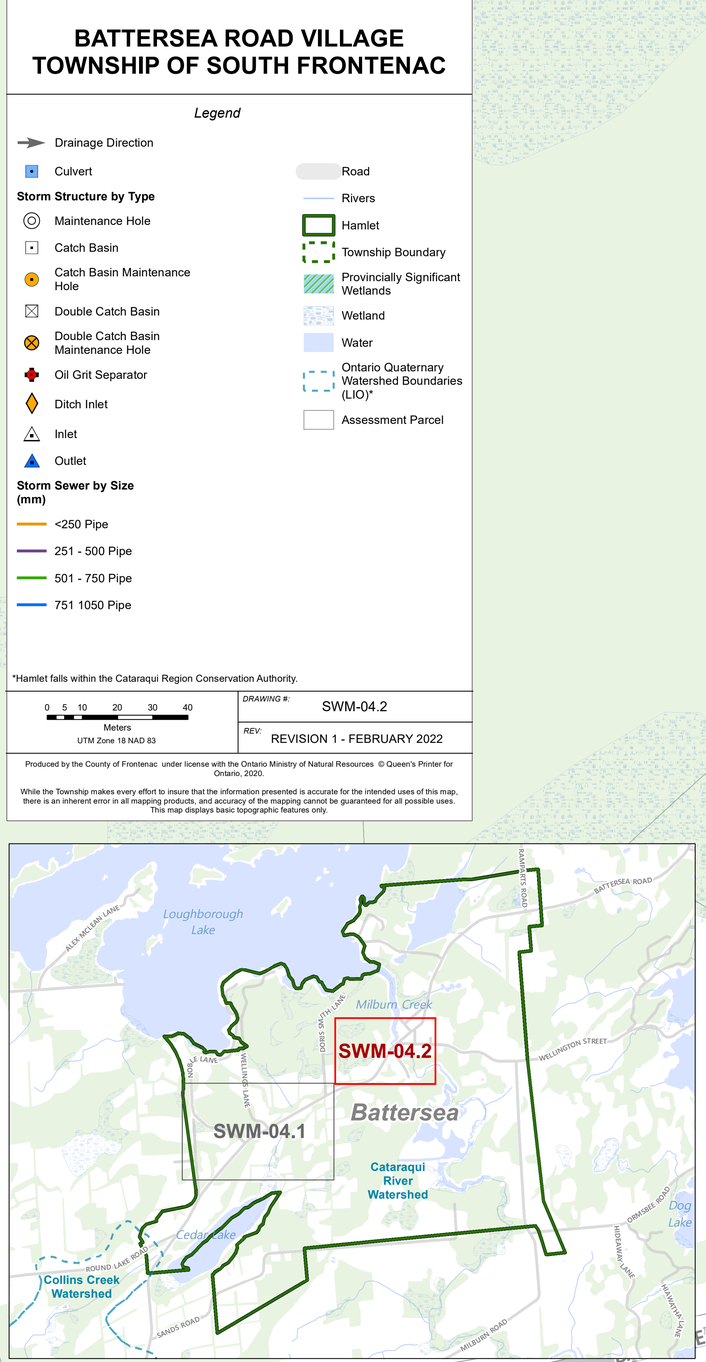

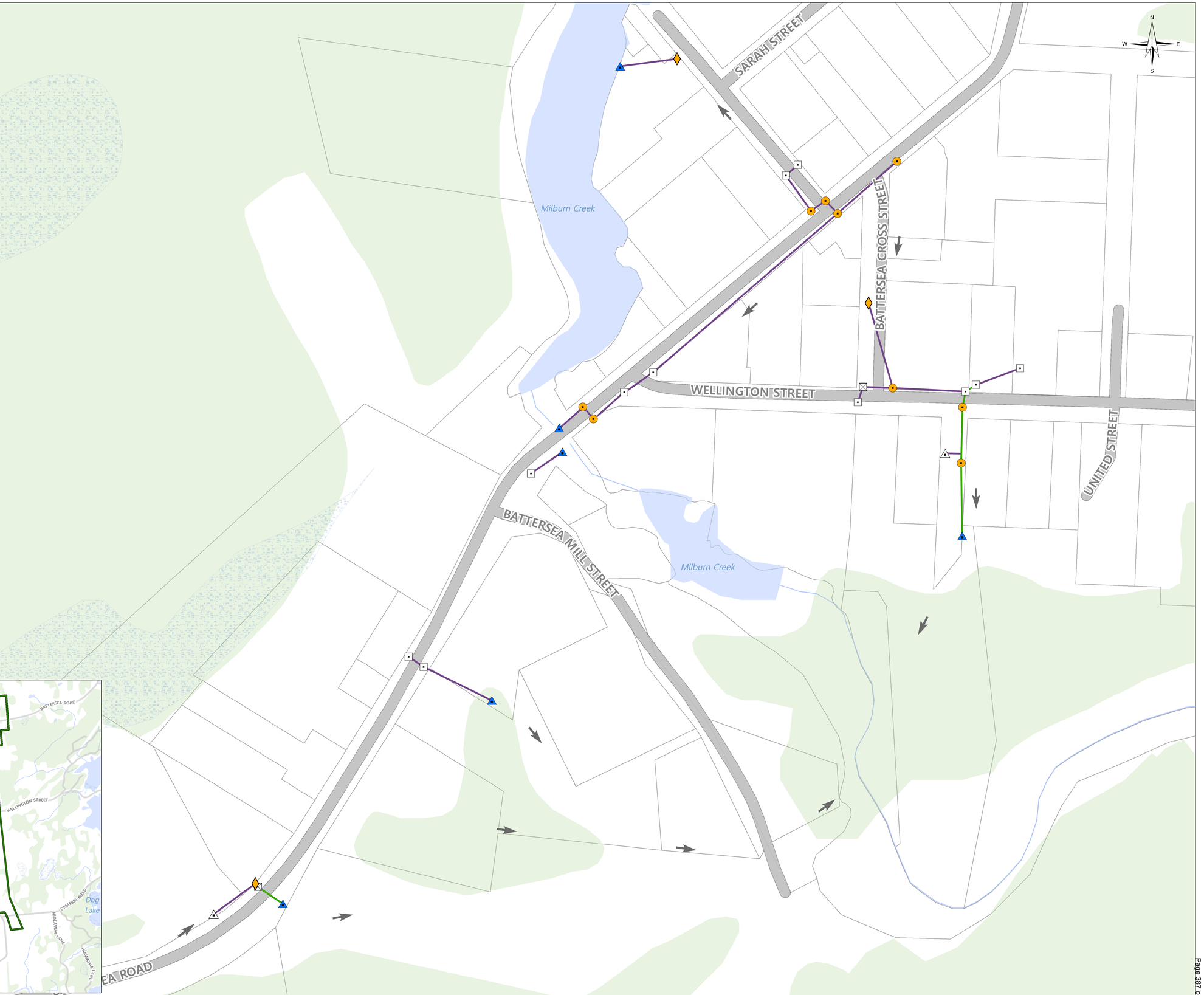

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SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

HARTINGTON VILLAGE
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
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- 751 1050 Pipe

- Road
- Rivers
- Hamlet
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel

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Meters
UTM Zone 18 NAD 83

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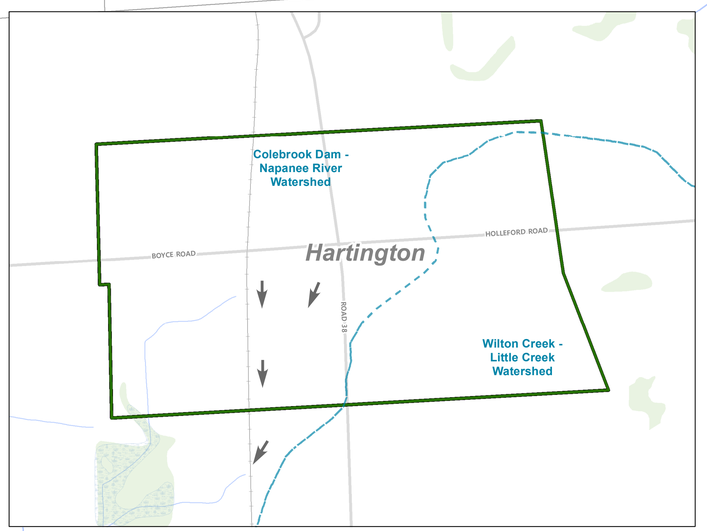

SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

BELLROCK VILLAGE
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
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- Inlet
- Outlet

Storm Sewer by Size (mm)

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- Hamlet
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
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Meters
UTM Zone 18 NAD 83

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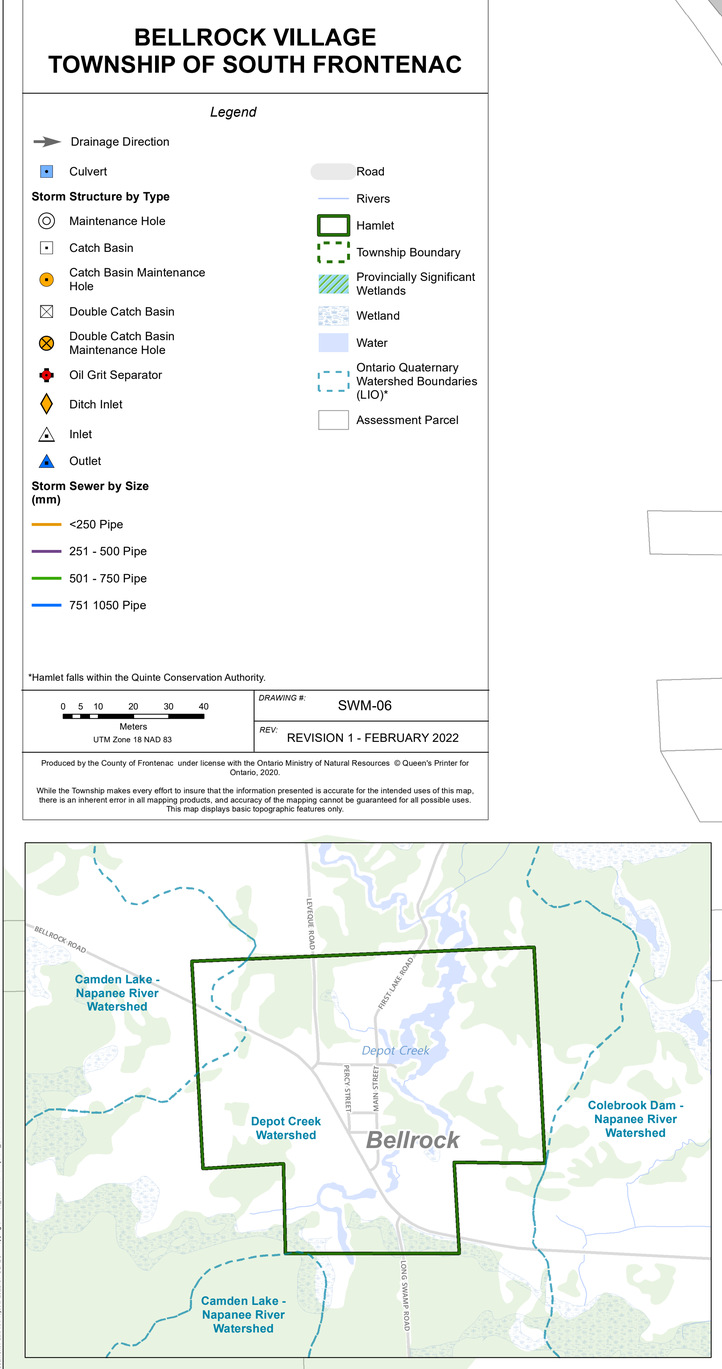

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Appendix C1

SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

HARROWSMITH VILLAGE
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

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- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel

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0 5 10 20 30 40 50 60 70
Meters
UTM Zone 18 NAD 83

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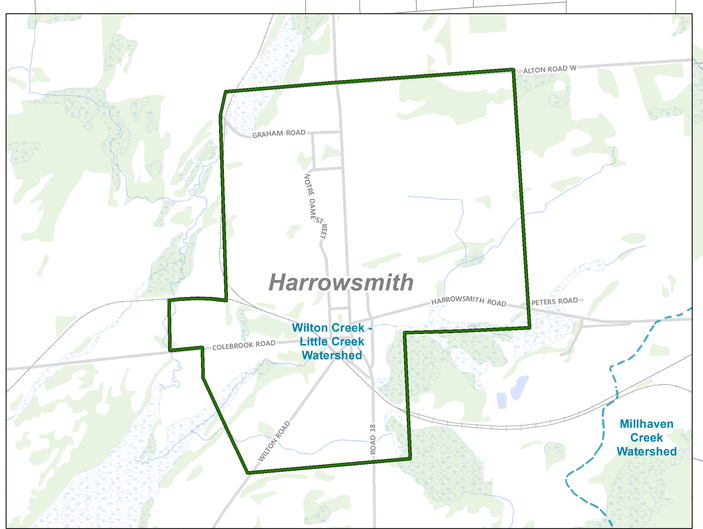

SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

SUNBURY VILLAGE
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

- Road
- Rivers
- Hamlet
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel

*Hamlet falls within the Quinte Conservation Authority.

0 5 10 20 30 40 50
Meters
UTM Zone 18 NAD 83

DRAWING #: SWM-08

REV: REVISION 1 - FEBRUARY 2022

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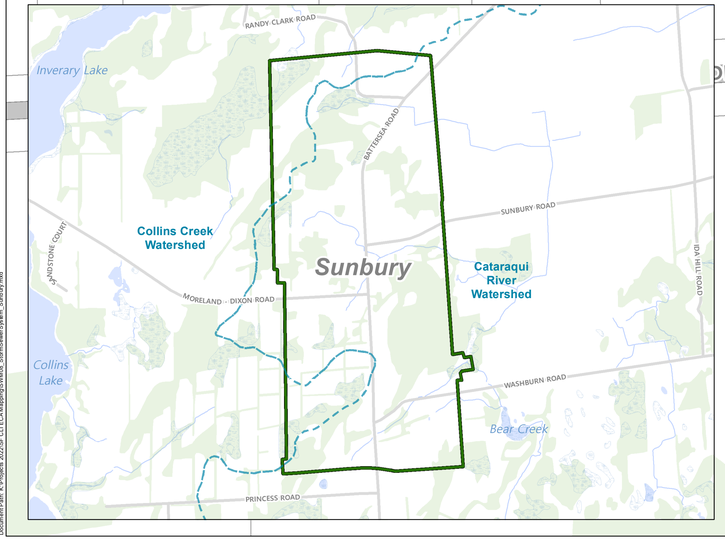

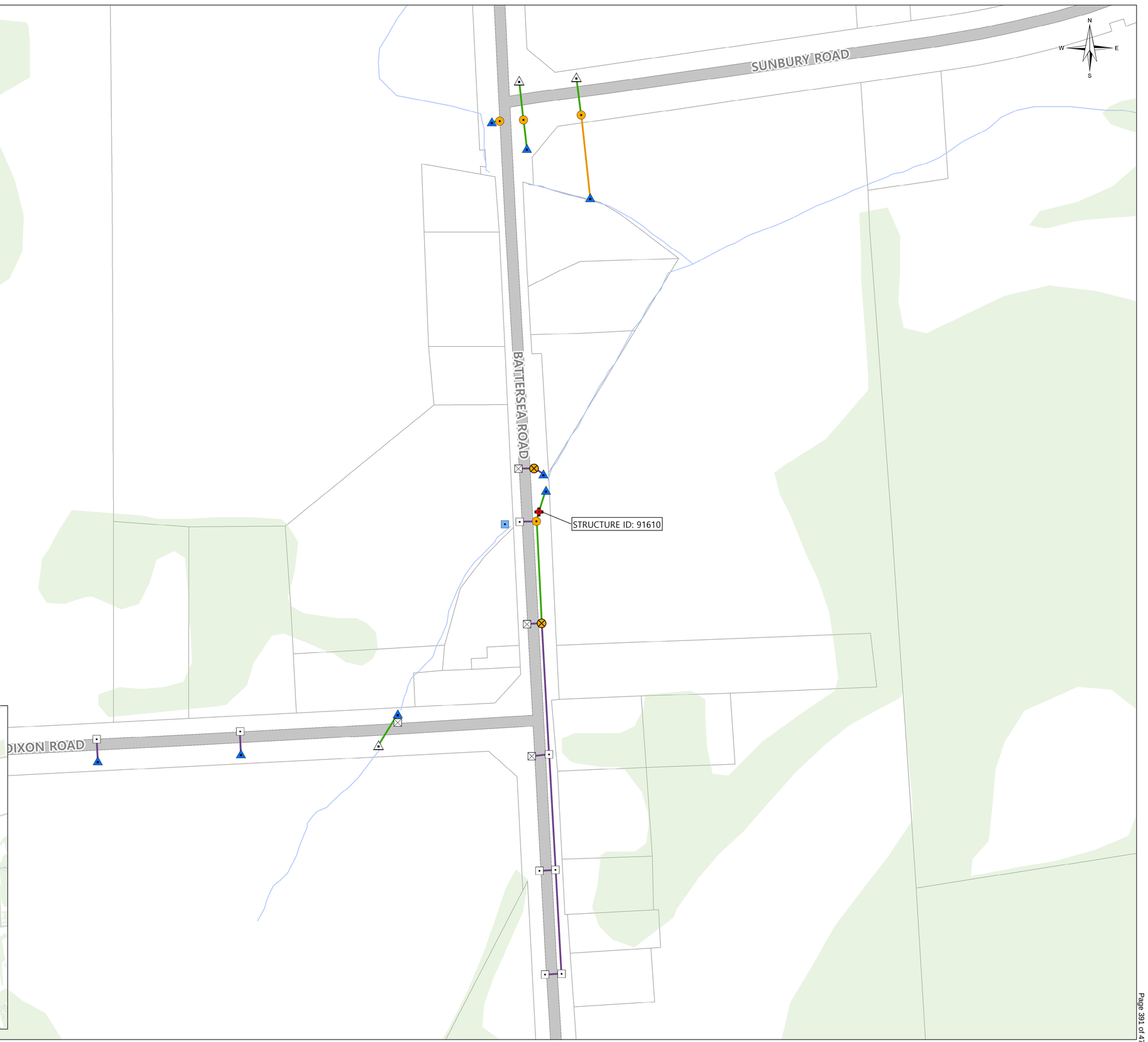

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SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

SYDENHAM VILLAGE
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

- Water Pump Station
- Water Intake

Surface Water Intake Protection Zone

- IPZ Type 1
- IPZ Type 2
- IPZ Type 3
- Hamlet
- Township Boundary
- Road
- Provincially Significant Wetlands
- Wetland
- Rivers
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel

*Hamlet falls within the Quinte Conservation Authority.

0 5 10 20 30 40 50 60 70 80
Meters
UTM Zone 18 NAD 83

DRAWING #: SWM-09.1

REV: REVISION 1 - FEBRUARY 2022

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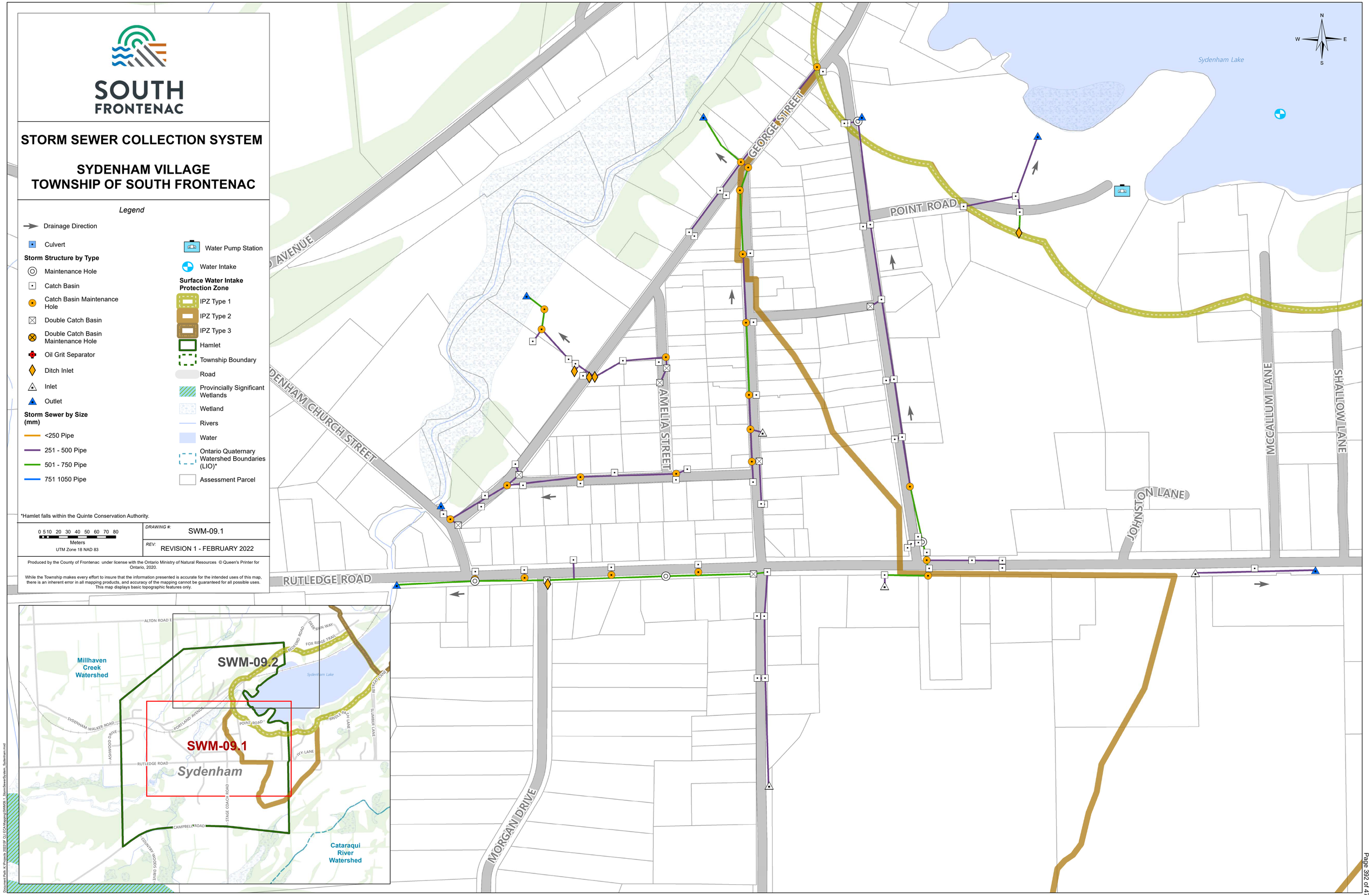

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SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

SYDENHAM VILLAGE
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

Surface Water Intake Protection Zone

- IPZ Type 1
- IPZ Type 2
- IPZ Type 3
- Hamlet
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel
- Road
- Rivers

*Hamlet falls within the Quinte Conservation Authority.

0 5 10 20 30 40 50 60 70 80 90 100
Meters
UTM Zone 18 NAD 83

DRAWING #: SWM-09.2

REV: REVISION 1 - FEBRUARY 2022

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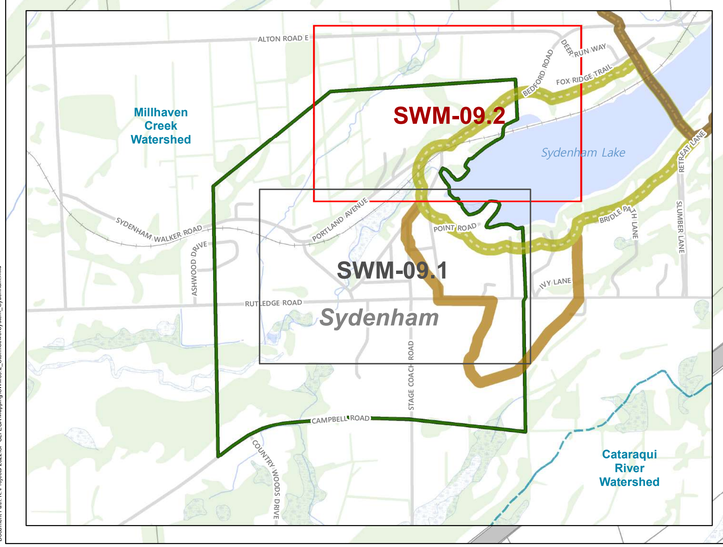

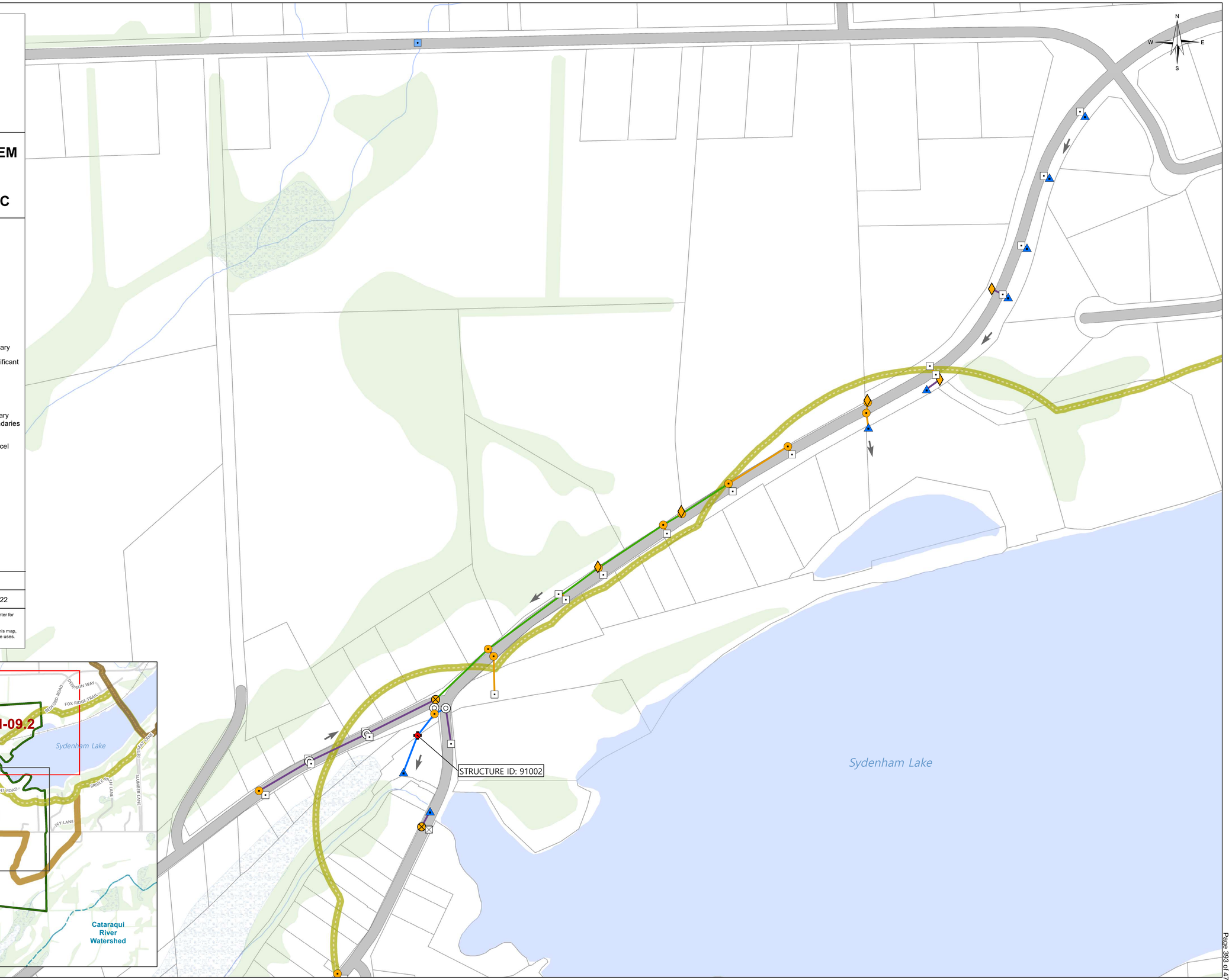

SOUTH FRONTENAC

SURFACE WATER INTAKE PROTECTION ZONES SYDENHAM VILLAGE TOWNSHIP OF SOUTH FRONTENAC

Legend

Surface Water Intake Protection Zone

- IPZ Type 1
- IPZ Type 2
- IPZ Type 3
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel
- Road
- Rivers

*Hamlet falls within the Quinte Conservation Authority.

0 500 1,000
Meters
UTM Zone 18 NAD 83

DRAWING #: SWM-09.3

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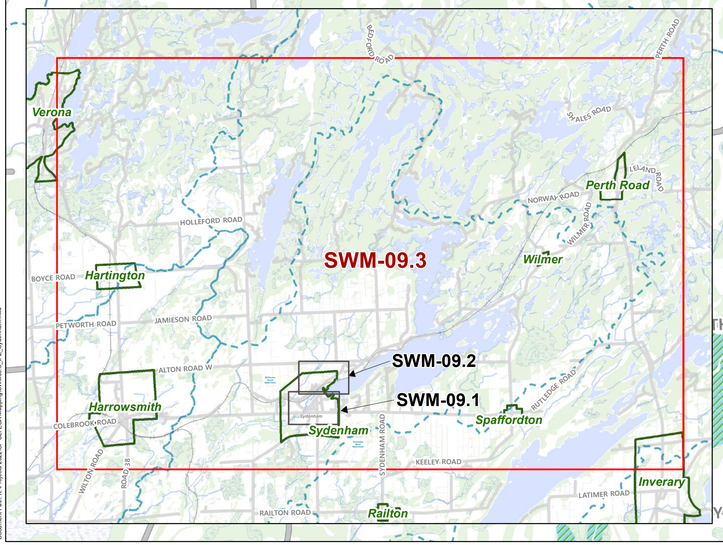

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SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

VILLAGE OF VERONA
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

- Road
- Hamlet
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel

*Hamlet falls within the Quinte Conservation Authority.

0 5 10 20 30 40 50 60 70 80 90 100
Meters
UTM Zone 18 NAD 83

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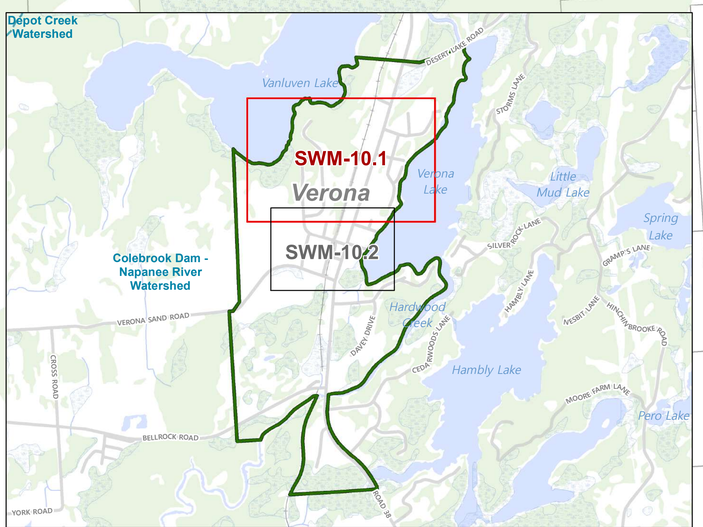

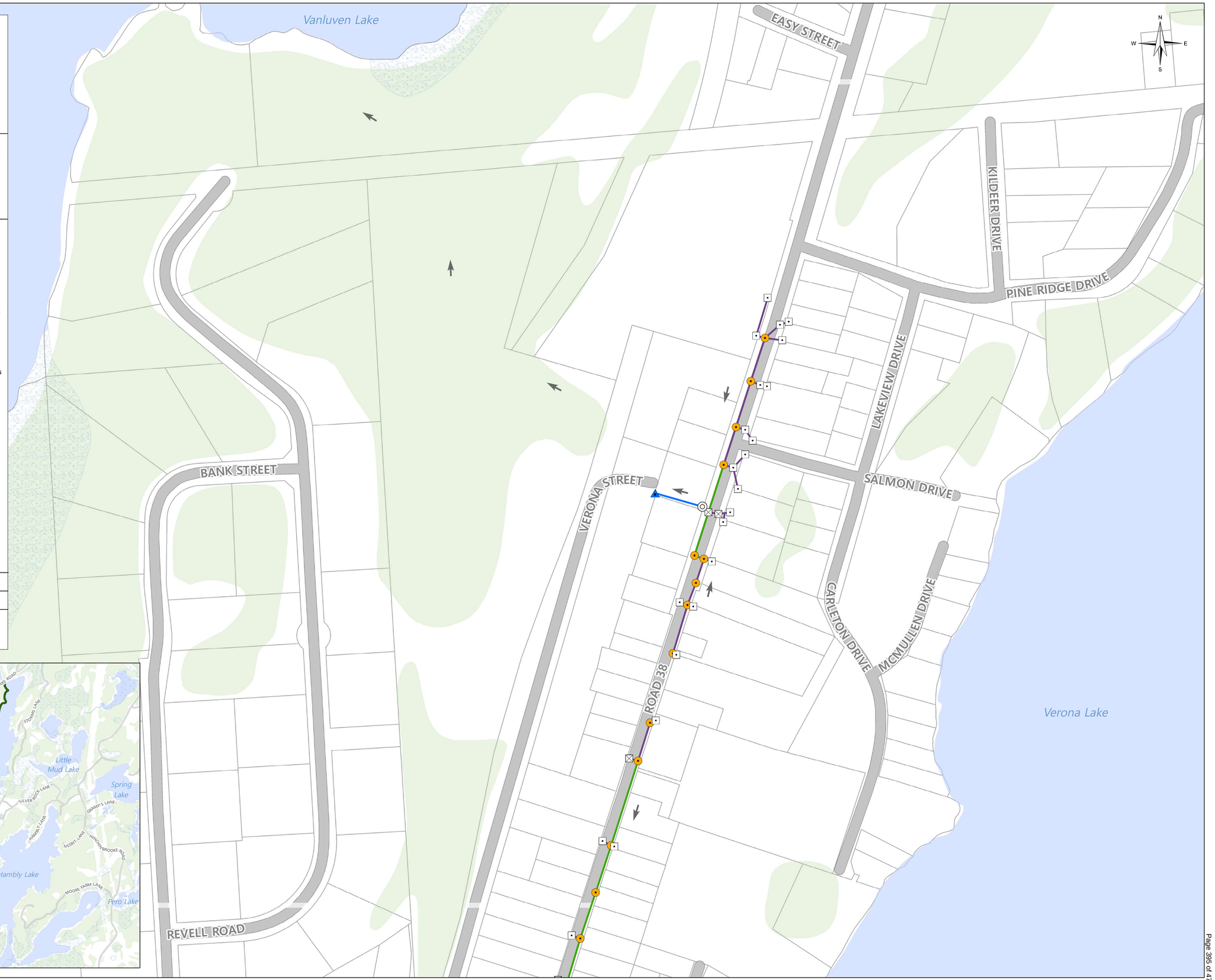

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SOUTH FRONTENAC

STORM SEWER COLLECTION SYSTEM

VILLAGE OF VERONA
TOWNSHIP OF SOUTH FRONTENAC

Legend

- Drainage Direction
- Culvert

Storm Structure by Type

- Maintenance Hole
- Catch Basin
- Catch Basin Maintenance Hole
- Double Catch Basin
- Double Catch Basin Maintenance Hole
- Oil Grit Separator
- Ditch Inlet
- Inlet
- Outlet

Storm Sewer by Size (mm)

- <250 Pipe
- 251 - 500 Pipe
- 501 - 750 Pipe
- 751 1050 Pipe

- Road
- Rivers
- Hamlet
- Township Boundary
- Provincially Significant Wetlands
- Wetland
- Water
- Ontario Quaternary Watershed Boundaries (LIO)*
- Assessment Parcel

*Hamlet falls within the Quinte Conservation Authority.

0 5 10 20 30 40 50
Meters
UTM Zone 18 NAD 83

DRAWING #: SWM-10.2

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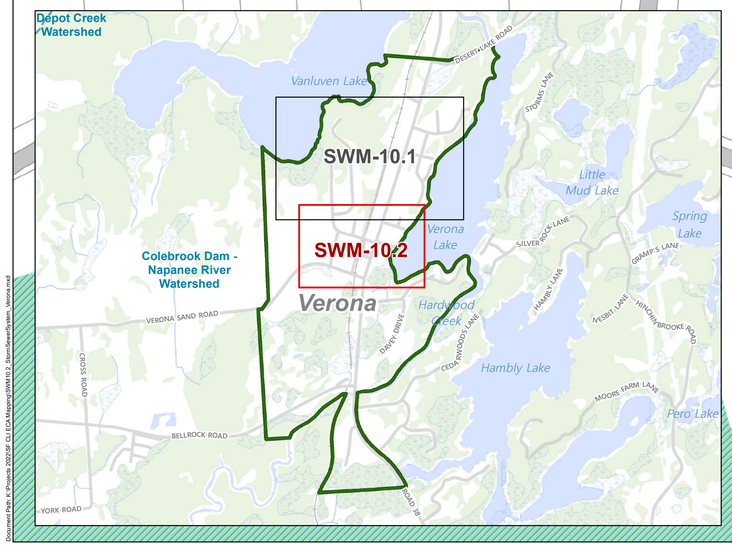

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SOUTH FRONTENAC

Appendix D

Risk Rating Systems

Major Asset Group	Probability of Failure Score (1 = low, 5 = high)	Consequence of Failure Score (1 = low, 5 = high)
Roads	PCI Ratings – Inspections 85 to 100 = 1 70 to <85 = 2 55 to <70 = 3 40 to <55 = 4 0 to <40 = 5	Based on Road Class Local = 3 Collector = 4 Arterial = 5
Bridges	BCI Ratings – OSIM Reports 75 to 100 = 1 60 to <75 = 2 45 to <60 = 3 35 to <45 = 4 0 to <35 = 5	Based on Road Class Bridge (Collector/Local) = 4 Bridge (Arterial) = 5 Culvert (Collector/Local) = 3 Culvert (Arterial) = 4
Water Facilities	Remaining Useful Service Life 80 to 100 = 1 60 to <80 = 2 30 to <60 = 3 1 to <30 = 4 0 = 5	Based on Function Raw water intake = 5 Elevated Water Storage = 4 Treatment Plant = 5 UV/GAC Contactors = 5
Water Mains	Remaining Useful Service Life 80 to 100 = 1 60 to <80 = 2 40 to <60 = 3 20 to <40 = 4 0 to <20 = 5	Based on Size Services = 1 100mm = 2 150mm = 3 200mm = 4 250mm = 5

Major Asset Group	Probability of Failure Score (1 = low, 5 = high)	Consequence of Failure Score (1 = low, 5 = high)
Water Valves, Hydrants and Services	Remaining Useful Service Life 80 to 100 = 1 60 to <80 = 2 40 to <60 = 3 20 to <40 = 4 0 to <20 = 5	Based on Function Valve - 250mm = 4 Valve - 150 to 200mm = 3 Hydrant = 4 Services = 1
Storm Sewers	Remaining Useful Service Life 80 to 100 = 1 60 to <80 = 2 40 to <60 = 3 20 to <40 = 4 0 to <20 = 4	Based on Size <250mm = 1 250 to 375mm = 2 450 to 600mm = 3 675 to 900mm = 4 1050mm or > = 5
Manholes, Catchbasins and Ditch Inlets	Remaining Useful Service Life 80 to 100 = 1 60 to <80 = 2 40 to <60 = 3 20 to <40 = 4 0 to <20 = 5	Based on Function Manholes = 3 Double Catchbasin = 2 Catchbasin = 1 Ditch Inlet = 1
Storm Treatment Units	Remaining Useful Service Life 80 to 100 = 1 60 to <80 = 2 40 to <60 = 3 20 to <40 = 4 0 to <20 = 4	Based on Function Mechanical Treatment Unit = 5
Culverts (< 3m diameter)	Remaining Useful Service Life 80 to 100 = 1 60 to <80 = 2 40 to <60 = 3 20 to <40 = 4 0 to <20 = 5	Based on Road Class Culvert (Collector/Local) = 3 Culvert (Arterial) = 4

Roads

ID	Street	From	To	Classification	Roadside Environment	Surface Type	Maintenace Class	Length (m)	Width (m)	Pavement Area (m2)	Last Inspection Date	Inspection OCI	Cost $/m assumed	Replacement Value Estimate	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Install / Last Reconstruct Date	Useful Life	Risk	Timing of First Replacement (based on Risk)	Timing of First Replacement (based on Risk)
52150	Bellrock Road	Cross Road	Road 38	Arterial	Rural	Asphalt	Class 3	1300	6.8	8840	2022-04-30	100	675	$ 877,500.00	1	5	2022	50	5	2040 to 2046	2022
56635	Sunbury Road	Battersea Road	Battersea Road	Arterial	Rural	Asphalt	Class 3	3400	7	23800	2022-04-30	46	855	$ 2,907,000.00	4	5	1967	50	20	2024 to 2027	2023
54910	Road 38	Murton Road	0.50km South of Kingsto	Arterial	Rural	Asphalt	Class 2	5350	7.5	40125	2022-04-30	60	855	$ 4,574,250.00	3	5	1993	45	15	2028 to 2032	2025
55025	Road 38	0.50km South of Kingston	Kingston Road	Arterial	Urban	Asphalt	Class 2	500	10	5000	2022-04-30	68	1690	$ 845,000.00	3	5	2009	45	15	2028 to 2032	2025
56520	Rutledge Road	2.20km East of Sydenham	Perth Road 10	Arterial	Rural	Asphalt	Class 3	5850	6.7	39195	2022-04-30	55	675	$ 3,948,750.00	3	5	2001	50	15	2028 to 2032	2026
46360	Walker Street	Verona Street	Road 38	Local	Urban	Asphalt	Class 5	50	8.8	440	2022-04-30	41	1050	$ 52,500.00	4	3	2004	50	12	2028 to 2032	2026
50500	Battersea Road	0.10km North of Sarah St	Burnt Hills Road	Arterial	Rural	Asphalt	Class 3	2300	6.4	14720	2022-04-30	64	675	$ 1,552,500.00	3	5	2007	50	15	2028 to 2032	2028
45685	Verona Sand Road	0.70km East of Cross Roa	McMahon Drive	Local	Rural	Asphalt	Class 4	1250	7	8750	2022-04-30	51	550	$ 687,500.00	4	3	1997	50	12	2028 to 2032	2028
58935	Yarker Road 4	Wilton Road 18	Road 38	Arterial	Rural	Asphalt	Class 3	2050	6.7	13735	2022-04-30	55	675	$ 1,383,750.00	3	5	1993	50	15	2028 to 2032	2029
46000	Stage Coach Road	Campbell Road	Rutledge Road	Collector	Urban	Asphalt	Class 4	650	6.7	4355	2022-04-30	63	1050	$ 682,500.00	3	4	1986	50	12	2028 to 2032	2029
53760	Perth Road 10	Moreland Dixon Road	0.70km North of Morela	Arterial	Urban	Asphalt	Class 2	700	7.9	5530	2022-04-30	72	1690	$ 1,183,000.00	2	5	1989	45	10	2028 to 2032	2029
55255	Road 38	0.56km North of Harrows	0.70km North of Harrow	Arterial	Rural	Asphalt	Class 2	4750	7.5	35625	2022-04-30	58	855	$ 4,061,250.00	3	5	1994	45	15	2028 to 2032	2030
55175	Road 38	Harrowsmith Road	0.56km North of Harrow	Arterial	Urban	Asphalt	Class 2	560	12	6720	2022-05-02	61	1690	$ 946,400.00	3	5	1994	45	15	2028 to 2032	2030
55600	Road 38	Pine Ridge Road	Desert Lake Road	Arterial	Urban	Asphalt	Class 2	500	7.8	3900	2022-04-30	65	1690	$ 845,000.00	3	5	1995	45	15	2028 to 2032	2031
55485	Road 38	Verona Sand Road	Pine Ridge Road	Arterial	Urban	Asphalt	Class 2	1200	7.6	9120	2022-04-30	68	1690	$ 2,028,000.00	3	5	1994	45	15	2028 to 2032	2031
50000	Battersea Road	4.3km South of Moreland	Moreland Dixon Road	Arterial	Rural	Asphalt	Class 3	4300	7.2	30960	2022-04-30	46	855	$ 3,676,500.00	4	5	1994	50	20	2024 to 2027	2032
40915	Burridge Road	Westport Road	Green Bay Road	Local	Rural	Asphalt	Class 4	1700	6.3	10710	2022-04-30	68	550	$ 935,000.00	3	3	1984	50	9	2033 to 2039	2034
57440	Sydenham Road	Orser Road	1.45km North of Keeley	Arterial	Rural	Asphalt	Class 2	5250	9.2	48300	2022-04-30	78	855	$ 4,488,750.00	2	5	1993	45	10	2028 to 2032	2038
57555	Sydenham Road	1.45km North of Keeley R	Rutledge Road	Arterial	Rural	Asphalt	Class 2	350	9.2	3220	2022-04-30	83	855	$ 299,250.00	2	5	1993	45	10	2028 to 2032	2038
55150	Road 38	Wilton Road 18	Harrowsmith Road	Arterial	Urban	Asphalt	Class 2	80	12	960	2022-05-01	68	1690	$ 135,200.00	3	5	1994	45	15	2028 to 2032	2039
50375	Battersea Road	Larry York Road	Sarah Street	Arterial	Urban	Asphalt	Class 3	2050	7.3	14965	2022-04-30	69	1340	$ 2,747,000.00	3	5	2004	50	15	2028 to 2032	2039
55370	Road 38	0.70km North of Harrows	Verona Sand Road	Arterial	Rural	Asphalt	Class 2	3900	7.5	29250	2022-04-30	60	855	$ 3,334,500.00	3	5	1995	45	15	2028 to 2032	2040
46712	Wilmer Road	Perth Road 10	Perth Road Crescent	Local	Urban	Asphalt	Class 4	50	7	350	2022-04-30	95	1050	$ 52,500.00	1	3	1990	50	3	2047 to 2052	2040
55715	Road 38	Desert Lake Road	0.80km North of Snider I	Arterial	Rural	Asphalt	Class 2	3100	7.8	24180	2022-04-30	82	855	$ 2,650,500.00	2	5	1996	45	10	2028 to 2032	2041
40630	Bradshaw Road	Bob's Lake Road	Steele Road	Local	Rural	Asphalt	Class 4	1250	6.7	8375	2022-04-30	74	550	$ 687,500.00	2	3	1991	50	6	2040 to 2046	2041
43765	Latimer Road	Perth Road 10	Round Lake Road	Local	Urban	Asphalt	Class 5	450	6.1	2745	2022-04-30	74	1050	$ 472,500.00	2	3	1991	50	6	2040 to 2046	2041
40615	Bradshaw Road	Road 38	Bob's Lake Road	Local	Rural	Asphalt	Class 4	900	6.7	6030	2022-04-30	80	550	$ 495,000.00	2	3	1991	50	6	2040 to 2046	2041
54220	Perth Road 10	1.40km North of Perth Ro	3.90km North of Perth R	Arterial	Rural	Asphalt	Class 3	2500	6.7	16750	2022-04-30	74	675	$ 1,687,500.00	2	5	1993	50	10	2028 to 2032	2043
46330	Verona Street	Verona Sand Road	North End of Road	Local	Urban	Asphalt	Class 5	900	6.4	5760	2022-04-30	78	1050	$ 945,000.00	2	3	1993	50	6	2040 to 2046	2043
56405	Rutledge Road	Storm Haven Lane	2.20km East of Sydenha	Arterial	Rural	Asphalt	Class 3	2750	9.1	25025	2022-04-30	89	675	$ 1,856,250.00	1	5	1993	50	5	2040 to 2046	2043
55830	Road 38	0.80km North of Snider R	Piccadilly Road	Arterial	Rural	Asphalt	Class 2	750	7.4	5550	2022-04-30	81	855	$ 641,250.00	2	5	2000	45	10	2028 to 2032	2045
54450	Perth Road 10	4.10km North of Perth Ro	9.60km North of Perth R	Arterial	Rural	Asphalt	Class 3	6700	6.9	46230	2022-04-30	80	675	$ 4,522,500.00	2	5	1996	50	10	2028 to 2032	2046
44740	Notre Dame Street	0.35km South of Centenn	Park Street	Local	Rural	Asphalt	Class 5	350	7	2450	2022-04-30	57	550	$ 192,500.00	3	3	1996	50	9	2033 to 2039	2046
42850	Hinchinbrooke Road	Road 38	0.2km North of Road 38	Local	Rural	Asphalt	Class 5	600	7	4200	2022-04-30	65	550	$ 330,000.00	3	3	1996	50	9	2033 to 2039	2046
43750	Latimer Road	1.70km West of Perth Ro	Perth Road 10	Local	Rural	Asphalt	Class 4	1700	6.2	10540	2022-04-30	69	550	$ 935,000.00	3	3	1996	50	9	2033 to 2039	2046
43495	Kingston Road	Road 38	Harrowsmith Road	Local	Urban	Asphalt	Class 5	300	6.6	1980	2022-04-30	80	1050	$ 315,000.00	2	3	1996	50	6	2040 to 2046	2046
41140	Carlton Drive	Road 38	Cemetery Road	Local	Urban	Asphalt	Class 6	450	6.1	2745	2022-04-30	82	1050	$ 472,500.00	2	3	1996	50	6	2040 to 2046	2046
42460	George Street	Wheatley Street	Portland Avenue	Arterial	Urban	Asphalt	Class 4	200	8.9	1780	2022-04-30	87	1050	$ 210,000.00	1	5	1996	50	5	2040 to 2046	2046
54460	Perth Road 10	9.60km North of Perth Ro	Roushorn Road	Arterial	Rural	Asphalt	Class 3	1000	6.9	6900	2022-04-30	89	675	$ 675,000.00	1	5	1996	50	5	2040 to 2046	2046
45625	Salmon Drive	Lakeview Drive	East End of Road	Local	Rural	Asphalt	Class 6	100	5.1	510	2022-04-30	85	550	$ 55,000.00	1	3	1996	50	3	2047 to 2052	2046
44320	McMahon Drive	Verona Sand Road	Bank Street	Local	Rural	Asphalt	Class 5	250	6.2	1550	2022-04-30	86	550	$ 137,500.00	1	3	1996	50	3	2047 to 2052	2046
45145	Princess Road	0.15km West of Battersea	Battersea Road	Local	Rural	Asphalt	Class 5	150	6.7	1005	2022-04-30	86	550	$ 82,500.00	1	3	1996	50	3	2047 to 2052	2046
46120	Sydenham Church Street	William Street	Portland Avenue	Local	Rural	Asphalt	Class 5	400	6.5	2600	2022-04-30	88	550	$ 220,000.00	1	3	1996	50	3	2047 to 2052	2046
44140	Maria Street	Notre Dame Street	Road 38	Local	Urban	Asphalt	Class 5	100	7.8	780	2022-04-30	89	1050	$ 105,000.00	1	3	1996	50	3	2047 to 2052	2046
43645	Lakeview Drive	Salmon Drive	Pine Ridge Road	Local	Rural	Asphalt	Class 6	150	6.5	975	2022-04-30	89	550	$ 82,500.00	1	3	1996	50	3	2047 to 2052	2046
41290	Church Street (Harrowsmit	Notre Dame Street	Road 38	Local	Urban	Asphalt	Class 5	100	10	1000	2022-04-30	90	1050	$ 105,000.00	1	3	1996	50	3	2047 to 2052	2046
44710	Notre Dame Street	Colebrook Road	Church Street (Harrowsm	Local	Urban	Asphalt	Class 5	350	6.6	2310	2022-04-30	90	1050	$ 367,500.00	1	3	1996	50	3	2047 to 2052	2046
44935	Ottawa Street	Railway Street	North End of Road	Local	Urban	Asphalt	Class 5	100	6.5	650	2022-04-30	91	1050	$ 105,000.00	1	3	1996	50	3	2047 to 2052	2046
46645	William Street	Rutledge Road	Church Street (Sydenhar	Local	Urban	Asphalt	Class 4	200	7	1400	2022-04-30	93	1050	$ 210,000.00	1	3	1996	50	3	2047 to 2052	2046
41305	Church Street (Harrowsmit	Road 38	East End of Road	Local	Urban	Asphalt	Class 5	200	7.4	1480	2022-04-30	95	1050	$ 210,000.00	1	3	1996	50	3	2047 to 2052	2046
53530	Moreland Dixon Road	Perth Road 10	Battersea Road	Arterial	Rural	Asphalt	Class 3	4150	6.7	27805	2022-04-30	72	675	$ 2,801,250.00	2	5	1997	50	10	2028 to 2032	2047
41965	Division Street	Perth Road 10	Latimer Road	Local	Rural	Asphalt	Class 5	300	6.2	1860	2022-04-30	73	550	$ 165,000.00	2	3	1997	50	6	2040 to 2046	2047
40285	Bank Street	Road 38	Revell Road	Local	Urban	Asphalt	Class 5	400	6.4	2560	2022-04-30	74	1050	$ 420,000.00	2	3	1997	50	6	2040 to 2046	2047
46465	Water Street	Road 38	East End of Road	Local	Urban	Asphalt	Class 6	150	6.8	1020	2022-04-30	74	1050	$ 157,500.00	2	3	1997	50	6	2040 to 2046	2047
45700	Verona Sand Road	McMahon Drive	Road 38	Local	Urban	Asphalt	Class 4	250	6.7	1675	2022-04-30	81	1050	$ 262,500.00	2	3	1997	50	6	2040 to 2046	2047
45085	Pine Ridge Road	Road 38	East End of Road	Local	Urban	Asphalt	Class 5	450	5.1	2295	2022-04-30	81	1050	$ 472,500.00	2	3	1997	50	6	2040 to 2046	2047
42430	Genge Street	Road 38	East End of Road	Local	Urban	Asphalt	Class 6	100	7.2	720	2022-04-30	83	1050	$ 105,000.00	2	3	1997	50	6	2040 to 2046	2047
41680	Davey Drive	South End of Road	Maple Drive	Local	Rural	Asphalt	Class 5	450	6.7	3015	2022-04-30	90	550	$ 247,500.00	1	3	1997	50	3	2047 to 2052	2047
41200	Cemetery Road	Water Street	North End of Road	Local	Rural	Asphalt	Class 6	50	4.9	245	2022-04-30	90	550	$ 27,500.00	1	3	1997	50	3	2047 to 2052	2047
53875	Perth Road 10	0.70km North of Morelan	North Shore Crescent	Arterial	Rural	Asphalt	Class 2	3100	6.7	20770	2022-04-30	64	855	$ 2,650,500.00	3	5	2003	45	15	2028 to 2032	2048
53645	Perth Road 10	Spooner Road	Moreland Dixon Road	Arterial	Rural	Asphalt	Class 2	5400	8.7	46980	2022-04-30	79	855	$ 4,617,000.00	2	5	2003	45	10	2028 to 2032	2048
53415	Harrowsmith Road	0.45km East of Road 38	Loughborough Portland	Arterial	Rural	Asphalt	Class 3	3600	6.7	24120	2022-04-30	83	675	$ 2,430,000.00	2	5	1998	50	10	2028 to 2032	2048
41215	Centennial Park Road	Notre Dame Street	Road 38	Local	Rural	Asphalt	Class 5	150	6.7	1005	2022-04-30	63	550	$ 82,500.00	3	3	1998	50	9	2033 to 2039	2048
44925	Orser Road	1.20km East of Stage Coa	Sydenham Road	Local	Rural	Asphalt	Class 4	100	6.5	650	2022-04-30	75	550	$ 55,000.00	2	3	1998	50	6	2040 to 2046	2048
45115	Portland Avenue	Sydenham Church Street	George Street	Local	Rural	Asphalt	Class 5	900	7	6300	2022-04-30	82	550	$ 495,000.00	2	3	1998	50	6	2040 to 2046	2048
40690	Brewery Street	William Street	Sydenham Mill Street	Local	Urban	Asphalt	Class 5	200	7	1400	2022-04-30	95	1050	$ 210,000.00	1	3	1998	50	3	2047 to 2052	2048
54795	Perth Road 10	0.85km North of McComi	6.00km North of McCom	Arterial	Rural	Asphalt	Class 3	5150	6.8	35020	2022-04-30	84	675	$ 3,476,250.00	2	5	1999	50	10	2028 to 2032	2049
44095	Maple Drive	Road 38	East End of Road	Local	Rural	Asphalt	Class 5	550	6.2	3410	2022-04-30	75	550	$ 302,500.00	2	3	1999	50	6	2040 to 2046	2049
54790	Perth Road 10	McComish Lane	0.85km North of McCom	Arterial	Rural	Asphalt	Class 3	850	6.8	5780	2022-04-30	89	675	$ 573,750.00	1	5	1999	50	5	2040 to 2046	2049
42280	Four Seasons Drive	Holmes Road	North End of Road	Local	Rural	Asphalt	Class 5	1350	6.2	8370	2022-04-30	73	550	$ 742,500.00	2	3	2000	50	6	2040 to 2046	2050
50250	Battersea Road	Sunbury Road	Larry York Road	Arterial	Rural	Asphalt	Class 3	5200	6.7	34840	2022-04-30	88	675	$ 3,510,000.00	1	5	2000	50	5	2040 to 2046	2050
56060	Rutledge Road	Loughborough Portland R	0.13km West of Sydenha	Arterial	Rural	Asphalt	Class 3	1400	6.7	9380	2022-04-30	94	675	$ 945,000.00	1	5	2000	50	5	2040 to 2046	2050
42295	Fox Ridge Trail	West End of Road	East End of Road	Local	Rural	Asphalt	Class 5	600	6.2	3720	2022-04-30	86	550	$ 330,000.00	1	3	2000	50	3	2047 to 2052	2050
44725	Notre Dame Street	Church Street (Harrowsm	0.35km South of Centen	Local	Urban	Asphalt	Class 5	350	7.6	2660	2022-04-30	86	1050	$ 367,500.00	1	3	2000	50	3	2047 to 2052	2050
41800	Deer Run Way	Fox Ridge Trail	Bedford Road	Local	Rural	Asphalt	Class 5	450	6.2	2790	2022-04-30	88	550	$ 247,500.00	1	3	2000	50	3	2047 to 2052	2050
45100	Point Road	Wheatley Street	East End of Road	Local	Urban	Asphalt	Class 5	250	10.4	2600	2022-04-30	78	1050	$ 262,500.00	2	3	2001	50	6	2040 to 2046	2051
53990	Perth Road 10	North Shore Crescent	Perth Road Crescent	Arterial	Rural	Asphalt	Class 3	5300	6.7	35510	2022-04-30	78	675	$ 3,577,500.00	2	5	2002	50	10	2028 to 2032	2052
57325	Sydenham Road	Horning Road	2.0km North of Horning	Arterial	Rural	Asphalt	Class 2	2000	8.7	17400	2022-04-30	89	855	$ 1,710,000.00	1	5	2007	45	5	2040 to 2046	2052
46390	Walsh Road	Perth Road 10	0.15km East of Perth Ro	Local	Rural	Asphalt	Class 6	650	4.5	2925	2022-04-30	91	550	$ 357,500.00	1	3	2003	50	3	2047 to 2052	2053
54565	Perth Road 10	Roushorn Road	Clear Lake Road	Arterial	Rural	Asphalt	Class 3	500	6.9	3450	2022-04-30	88	675	$ 337,500.00	1	5	2004	50	5	2040 to 2046	2054
55945	Road 38	Bradshaw Road	3.30km North of Bradsha	Arterial	Rural	Asphalt	Class 3	3300	6.3	20790	2022-04-30	77	675	$ 2,227,500.00	2	5	2005	50	10	2028 to 2032	2055
58590	Wilton Road 18	3.6km West of Yarker Roa	Yarker Road 4	Arterial	Rural	Asphalt	Class 3	3600	6.7	24120	2022-04-30	80	675	$ 2,430,000.00	2	5	2005	50	10	2028 to 2032	2055
57210	Sydenham Mill Street	Rutledge Road	George Street	Arterial	Urban	Asphalt	Class 4	400	8.9	3560	2022-04-30	81	1050	$ 420,000.00	2	5	2005	50	10	2028 to 2032	2055

ID	Street	From	To	Classification	Roadside Environment	Surface Type	Maintenace Class	Length (m)	Width (m)	Pavement Area (m2)	Last Inspection Date	Inspection OCI	Cost $/m assumed	Replacement Value Estimate	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Install / Last Reconstruct Date	Useful Life	Risk	Timing of First Replacement (based on Risk)	Timing of First Replacement (based on Risk)
46540	Wheatley Street	Rutledge Road	George Street	Local	Urban	Asphalt	Class 5	550	7.8	4290	2022-04-30	76	1050	$ 577,500.00	2	3	2005	50	6	2040 to 2046	2055
42445	George Street	Sydenham Mill Street	Wheatley Street	Arterial	Urban	Asphalt	Class 4	150	7.8	1170	2022-04-30	92	1050	$ 157,500.00	1	5	2005	50	5	2040 to 2046	2055
45265	Railton Road	Sydenham Road	0.05km East of Sydenhai	Collector	Rural	Asphalt	Class 4	50	6.3	315	2022-04-30	89	550	$ 27,500.00	1	4	2005	50	4	2040 to 2046	2055
46180	Sydenham William Street	Rutledge Road	Sydenham Mill Street	Collector	Urban	Asphalt	Class 5	500	7.8	3900	2022-04-30	91	1050	$ 525,000.00	1	4	2005	50	4	2040 to 2046	2055
40060	Amelia Street	Brewery Street	William Street	Local	Urban	Asphalt	Class 5	200	8.4	1680	2022-04-30	89	1050	$ 210,000.00	1	3	2005	50	3	2047 to 2052	2055
46135	Sydenham Cross Street	Sydenham Mill Street	Wheatley Street	Local	Urban	Asphalt	Class 5	150	6.1	915	2022-04-30	90	1050	$ 157,500.00	1	3	2005	50	3	2047 to 2052	2055
51805	Bellrock Road	West End of Road	Bellrock Mill Street	Arterial	Rural	Asphalt	Class 3	3350	6.8	22780	2022-04-30	81	675	$ 2,261,250.00	2	5	2006	50	10	2028 to 2032	2056
44755	Oak Bluffs Road	South End of Road	Alf Patterson Road	Local	Rural	Asphalt	Class 4	3050	6.2	18910	2022-04-30	80	550	$ 1,677,500.00	2	3	2006	50	6	2040 to 2046	2056
42710	Grey Owl Road	Oak Bluffs Road	South End of Road	Local	Rural	Asphalt	Class 6	350	6.4	2240	2022-04-30	82	550	$ 192,500.00	2	3	2006	50	6	2040 to 2046	2056
41110	Canoe Lake Road	3.0km South of Westport	3.4km South of Westpor	Local	Rural	Asphalt	Class 4	350	6.5	2275	2022-04-30	80	550	$ 192,500.00	2	3	2007	50	6	2040 to 2046	2057
51230	Bedford Road	1.2km North of Freeman	1.5km North of Freeman	Arterial	Rural	Asphalt	Class 4	300	7.7	2310	2022-04-30	86	550	$ 165,000.00	1	5	2007	50	5	2040 to 2046	2057
42105	Fawn Brook Drive	Spooner Road	0.40km North of Spoone	Local	Rural	Asphalt	Class 5	400	6	2400	2022-04-30	86	550	$ 220,000.00	1	3	2007	50	3	2047 to 2052	2057
41020	Canoe Lake Road	0.8km North of Desert La	1.3km North of Desert L	Local	Rural	Asphalt	Class 4	500	6	3000	2022-04-30	62	550	$ 275,000.00	3	3	2008	50	9	2033 to 2039	2058
41455	Colebrook Road	5.30km East of Camden P	Road 38	Local	Rural	Asphalt	Class 4	1100	7.3	8030	2022-04-30	69	550	$ 605,000.00	3	3	2008	50	9	2033 to 2039	2058
40525	Boyce Road	0.7km West of Road 38	Road 38	Local	Rural	Asphalt	Class 4	680	5.5	3740	2022-04-30	89	550	$ 374,000.00	1	3	2008	50	3	2047 to 2052	2058
40705	Buck Bay Road	Westport Road	0.3km North of Westpor	Local	Rural	Asphalt	Class 4	200	5.5	1100	2022-04-30	74	550	$ 110,000.00	2	3	2009	50	6	2040 to 2046	2059
54335	Perth Road 10	3.90km North of Perth Ro	4.10km North of Perth R	Arterial	Rural	Asphalt	Class 3	200	6.7	1340	2022-04-30	85	675	$ 135,000.00	1	5	2009	50	5	2040 to 2046	2059
46165	Sydenham Walker Road	Rock Quarry Lane	Sydenham Church Street	Local	Rural	Asphalt	Class 4	400	6	2400	2022-04-30	88	550	$ 220,000.00	1	3	2009	50	3	2047 to 2052	2059
54680	Perth Road 10	Clear Lake Road	McComish Lane	Arterial	Rural	Asphalt	Class 3	2100	10	21000	2022-04-30	88	675	$ 1,417,500.00	1	5	2010	50	5	2040 to 2046	2060
43360	Keeley Road	Sydenham Road	0.3km East of Sydenham	Collector	Rural	Asphalt	Class 4	300	7.5	2250	2022-04-30	96	550	$ 165,000.00	1	4	2010	50	4	2040 to 2046	2060
42970	Holleford Road	Road 38	0.15km East of Road 38	Local	Urban	Asphalt	Class 4	150	7.7	1155	2022-04-30	87	1050	$ 157,500.00	1	3	2010	50	3	2047 to 2052	2060
45070	Piccadilly Road	Road 38	Arena Boundary Road	Local	Rural	Asphalt	Class 4	150	6.3	945	2022-04-30	89	550	$ 82,500.00	1	3	2010	50	3	2047 to 2052	2060
51920	Bellrock Road	Bellrock Mill Street	Long Swamp Road	Arterial	Rural	Asphalt	Class 3	2100	10	21000	2022-04-30	90	675	$ 1,417,500.00	1	5	2011	50	5	2040 to 2046	2061
52035	Bellrock Road	Long Swamp Road	Cross Road	Arterial	Rural	Asphalt	Class 3	3200	7	22400	2022-04-30	65	675	$ 2,160,000.00	3	5	2012	50	15	2028 to 2032	2062
45730	Sarah Street	Water Street	Battersea Road	Local	Rural	Asphalt	Class 5	200	7	1400	2022-04-30	87	550	$ 110,000.00	1	3	2012	50	3	2047 to 2052	2062
55140	Road 38	Kingston Road	Wilton Road 18	Arterial	Urban	Asphalt	Class 2	800	12.5	10000	2022-04-30	68	1690	$ 1,352,000.00	3	5	2018	45	15	2028 to 2032	2063
54105	Perth Road 10	Perth Road Crescent	1.40km North of Perth R	Arterial	Rural	Asphalt	Class 3	1400	10	14000	2022-04-30	74	675	$ 945,000.00	2	5	2013	50	10	2028 to 2032	2063
44995	Perth Road Crescent	Perth Road 10	Perth Road 10	Local	Urban	Asphalt	Class 4	600	7	4200	2022-04-30	89	1050	$ 630,000.00	1	3	2013	50	3	2047 to 2052	2063
46495	Wellington Street	Battersea Road	United Street	Local	Urban	Asphalt	Class 4	250	7	1750	2022-04-30	92	1050	$ 262,500.00	1	3	2013	50	3	2047 to 2052	2063
46710	Wilmer Road	0.05km West of Perth Ro	Perth Road 10	Local	Urban	Asphalt	Class 4	50	6.5	325	2022-04-30	92	1050	$ 52,500.00	1	3	2013	50	3	2047 to 2052	2063
40345	Battersea Water Street	North End of Road	Battersea Road	Local	Urban	Asphalt	Class 5	100	7	700	2022-04-30	92	1050	$ 105,000.00	1	3	2013	50	3	2047 to 2052	2063
41788	Deer Creek Drive	0.4km North of Spooner F	Whitetail Court	Local	Rural	Asphalt	Class 5	560	6	3360	2022-04-30	91	550	$ 308,000.00	1	3	2014	50	3	2047 to 2052	2064
40315	Battersea Cross Street	Wellington Street	Battersea Road	Local	Urban	Asphalt	Class 5	100	6.4	640	2022-04-30	92	1050	$ 105,000.00	1	3	2014	50	3	2047 to 2052	2064
42108	Fawn Brook Drive	0.4km North of Spooner F	Whitetail Court	Local	Rural	Asphalt	Class 5	260	6	1560	2022-04-30	94	550	$ 143,000.00	1	3	2014	50	3	2047 to 2052	2064
46545	Whitetail Court	Fawn Brook Drive	North End of Road	Local	Rural	Asphalt	Class 5	240	6	1440	2022-04-30	95	550	$ 132,000.00	1	3	2014	50	3	2047 to 2052	2064
58820	Yarker Road 4	Camden Portland Bounda	Wilton Road 18	Arterial	Rural	Asphalt	Class 3	3750	10	37500	2022-04-30	83	675	$ 2,531,250.00	2	5	2015	50	10	2028 to 2032	2065
56290	Rutledge Road	Wheatley Street	Storm Haven Lane	Arterial	Urban	Asphalt	Class 3	1100	10.4	11440	2022-04-30	83	1340	$ 1,474,000.00	2	5	2016	50	10	2028 to 2032	2066
44980	Percy Street	Bellrock Road	Bellrock Mill Street	Local	Rural	Asphalt	Class 5	250	3.2	800	2022-04-30	80	550	$ 137,500.00	2	3	2016	50	6	2040 to 2046	2066
44065	Main Street	Bellrock Road	Bellrock Mill Street	Local	Urban	Asphalt	Class 5	450	4.2	1890	2022-04-30	80	1050	$ 472,500.00	2	3	2016	50	6	2040 to 2046	2066
40435	Bellrock Mill Street	Bellrock Road	First Lake Road	Local	Urban	Asphalt	Class 5	250	5	1250	2022-04-30	82	1050	$ 262,500.00	2	3	2016	50	6	2040 to 2046	2066
42520	Goodrich Street	Percy Street	Main Street	Local	Rural	Asphalt	Class 6	100	3.7	370	2022-04-30	84	550	$ 55,000.00	2	3	2016	50	6	2040 to 2046	2066
56175	Rutledge Road	0.13km West of Sydenhar	Wheatley Street	Arterial	Urban	Asphalt	Class 3	550	10.4	5720	2022-04-30	89	1340	$ 737,000.00	1	5	2016	50	5	2040 to 2046	2066
43855	Leveque Road	Bellrock Mill Street	0.1km North of Bellrock	Local	Rural	Asphalt	Class 6	100	4	400	2022-04-30	86	550	$ 55,000.00	1	3	2016	50	3	2047 to 2052	2066
40465	Bellrock Pepper Street	Bellrock Road	First Lake Road	Local	Rural	Asphalt	Class 6	100	3.2	320	2022-04-30	87	550	$ 55,000.00	1	3	2016	50	3	2047 to 2052	2066
58705	Wilton Road 18	Yarker Road 4	0.65km West of Road 38	Arterial	Rural	Asphalt	Class 3	3300	6.7	22110	2022-04-30	64	675	$ 2,227,500.00	3	5	2018	50	15	2028 to 2032	2068
58130	Westport Road	1.10km East of Lee Road	0.76km West of Bressee	Arterial	Rural	Asphalt	Class 4	1300	9.1	11830	2022-04-30	74	550	$ 715,000.00	2	5	2018	50	10	2028 to 2032	2068
53400	Harrowsmith Road	Road 38	0.45km East of Road 38	Arterial	Urban	Asphalt	Class 3	450	7	3150	2022-04-01	84	1340	$ 603,000.00	2	5	2018	50	10	2028 to 2032	2068
58725	Wilton Road 18	0.65km West of Road 38	0.37km West of Road 38	Arterial	Urban	Asphalt	Class 3	280	12	3360	2022-05-01	84	1340	$ 375,200.00	2	5	2018	50	10	2028 to 2032	2068
0	Robinson Road	Wilton Road 18	Colebrook Road	Collector	Urban	Asphalt	Class 5	120	8	960	2022-04-30	75	1050	$ 126,000.00	2	4	2018	50	8	2033 to 2039	2068
41470	Colebrook Road East	Road 38	Kingston Road	Local	Urban	Asphalt	Class 5	100	6	600	2022-04-30	82	1050	$ 105,000.00	2	3	2018	50	6	2040 to 2046	2068
51000	Bedford Road	Portland Avenue	Alton Road	Arterial	Urban	Asphalt	Class 4	1000	7.7	7700	2022-04-30	86	1050	$ 1,050,000.00	1	5	2018	50	5	2040 to 2046	2068
58775	Wilton Road 18	0.12km West of Road 38	Road 38	Arterial	Urban	Asphalt	Class 3	120	11	1320	2022-05-03	89	1340	$ 160,800.00	1	5	2018	50	5	2040 to 2046	2068
58750	Wilton Road 18	0.37km West of Road 38	0.12km West of Road 38	Arterial	Urban	Asphalt	Class 3	250	8	2000	2022-05-02	93	1340	$ 335,000.00	1	5	2018	50	5	2040 to 2046	2068
50125	Battersea Road	Moreland Dixon Road	Sunbury Road	Arterial	Urban	Asphalt	Class 3	500	7.3	3650	2022-04-30	96	1340	$ 670,000.00	1	5	2018	50	5	2040 to 2046	2068
40180	Arena Boundary Road	2.15km East of Davey Rd	Piccadilly Road	Local	Rural	Asphalt	Class 4	450	6	2700	2022-04-30	90	550	$ 247,500.00	1	3	2018	50	3	2047 to 2052	2068
40030	Battersea Road	2.30km North of Burnt Hi	4.5km North of Burnt Hi	Arterial	Rural	Surface treated	Class 5	2200	6.7	14740	2022-04-30	29	450	$ 990,000.00	5	5	2003	30	25	2023	2022
44665	Battersea Road	Burnt Hills Road	1.70km North of Burnt H	Arterial	Rural	Surface treated	Class 5	1700	6.4	10880	2022-04-30	38	450	$ 765,000.00	5	5	2007	30	25	2023	2022
50675	Battersea Road	1.70km North of Burnt Hi	2.30km North of Burnt H	Arterial	Rural	Surface treated	Class 5	600	6.4	3840	2022-04-30	44	450	$ 270,000.00	4	5	2007	30	20	2024 to 2027	2022
51690	Alton Road	Road 38	Loughborough Portland	Local	Rural	Surface treated	Class 5	2700	5.6	15120	2022-04-30	30	270	$ 729,000.00	5	3	2003	30	15	2028 to 2032	2023
44890	North Shore Road	Hewlett Packard Road	Convery Lane	Local	Rural	Surface treated	Class 4	4000	5.7	22800	2022-04-30	42	270	$ 1,080,000.00	4	3	2007	30	12	2028 to 2032	2023
42655	Bedford Road	1.0km North of Salmon La	Desert Lake Road	Arterial	Rural	Surface treated	Class 4	3600	6.4	23040	2022-04-30	45	450	$ 1,620,000.00	4	5	2007	30	20	2024 to 2027	2024
43435	Ormsbee Road	Milburn Road	East End of Road	Local	Rural	Surface treated	Class 4	2650	6.2	16430	2022-04-30	30	270	$ 715,500.00	5	3	2014	30	15	2028 to 2032	2024
46240	Greenfield Road	West End of Road	0.70km West of Perth Ro	Local	Rural	Surface treated	Class 4	150	6	900	2022-04-30	40	270	$ 40,500.00	4	3	2000	30	12	2028 to 2032	2024
45945	Kerr Road	Petworth Road	North End of Road	Local	Rural	Surface treated	Class 4	600	4.3	2580	2022-04-30	48	270	$ 162,000.00	4	3	2003	30	12	2028 to 2032	2024
44920	Tom Watson Road	West End of Road	Watson Road	Local	Rural	Surface treated	Class 6	400	4.5	1800	2022-04-30	53	270	$ 108,000.00	4	3	2004	30	12	2028 to 2032	2024
58015	Spooner Road	0.45km West of Perth Ro	Perth Road 10	Local	Rural	Surface treated	Class 4	450	6	2700	2022-04-30	57	270	$ 121,500.00	3	3	1995	30	9	2033 to 2039	2024
41575	Orser Road	Stage Coach Road	1.20km East of Stage Co	Local	Rural	Surface treated	Class 4	1200	6.5	7800	2022-04-30	75	270	$ 324,000.00	2	3	2014	30	6	2040 to 2046	2024
42235	Westport Road	0.20km East of Burridge R	1.10km East of Lee Road	Arterial	Rural	Surface treated	Class 4	2500	6.8	17000	2022-04-30	54	450	$ 1,125,000.00	4	5	2008	30	20	2024 to 2027	2025
52495	Craig Road	Road 38	3.75km North of Road 3	Local	Rural	Surface treated	Class 4	3750	5	18750	2022-04-30	23	270	$ 1,012,500.00	5	3	2004	30	15	2028 to 2032	2025
43975	Florida Road	1.30km South of Henders	Henderson Road	Local	Rural	Surface treated	Class 4	1300	6.3	8190	2022-04-30	33	270	$ 351,000.00	5	3	2007	30	15	2028 to 2032	2025
45595	Desert Lake Road	Road 38	0.15km West of High Fal	Arterial	Rural	Surface treated	Class 5	2950	6.2	18290	2022-04-30	37	450	$ 1,327,500.00	5	5	2004	30	25	2023	2026
42025	Loughborough Portland Rd	Harrowsmith Road	Alton Road	Collector	Rural	Surface treated	Class 4	1400	6.4	8960	2022-04-30	45	375	$ 525,000.00	4	4	2004	30	16	2024 to 2027	2026
56750	Round Lake Road	4.10km East of Latimer Ro	Battersea Road	Local	Rural	Surface treated	Class 4	2200	6.1	13420	2022-04-30	41	270	$ 594,000.00	4	3	2007	30	12	2028 to 2032	2026
43030	Easy Street	West End of Road	Road 38	Local	Rural	Surface treated	Class 5	100	5.1	510	2022-04-30	50	270	$ 27,000.00	4	3	1995	30	12	2028 to 2032	2026
43735	Sunbury Road	0.60km West of Factory R	0.65km West of Hitchco	Arterial	Rural	Surface treated	Class 3	3200	7	22400	2022-04-30	62	855	$ 2,736,000.00	3	5	2011	50	15	2028 to 2032	2027
43045	Holleford Road	New Morin Road	Johnny Martin Road	Local	Rural	Surface treated	Class 4	2900	6.6	19140	2022-04-30	44	270	$ 783,000.00	4	3	2000	30	12	2028 to 2032	2027
51115	Latimer Road	Davidson Road	1.70km West of Perth Ro	Local	Rural	Surface treated	Class 4	2900	6.3	18270	2022-04-30	46	270	$ 783,000.00	4	3	2001	30	12	2028 to 2032	2027
40330	Holleford Road	Johnny Martin Road	Deer Park Lane	Local	Rural	Surface treated	Class 4	1600	6.6	10560	2022-04-30	49	270	$ 432,000.00	4	3	2011	30	12	2028 to 2032	2027
44515	Sunbury Road	0.65km West of Hitchcoc	Hitchcock Drive	Arterial	Rural	Surface treated	Class 3	700	7	4900	2022-04-30	72	855	$ 598,500.00	2	5	2003	50	10	2028 to 2032	2027
42535	Bedford Road	Alton Road	Freeman Road	Arterial	Rural	Surface treated	Class 4	2200	6.2	13640	2022-04-30	35	450	$ 990,000.00	5	5	1992	30	25	2023	2028
44905	Battersea Mill Street	Battersea Road	South End of Road	Local	Rural	Surface treated	Class 5	150	2.8	420	2022-04-30	38	270	$ 40,500.00	5	3	1990	30	15	2028 to 2032	2028
56865	Sunbury Road	Brewer Lake Road	1.30km East of Hitchcoc	Arterial	Rural	Surface treated	Class 3	1300	7	9100	2022-04-30	63	855	$ 1,111,500.00	3	5	2003	30	15	2028 to 2032	2028
43930	Long Swamp Road	German Road	2.05km South of Bellroc	Local	Rural	Surface treated	Class 6	2100	6.1	12810	2022-04-30	42	270	$ 567,000.00	4	3	2009	30	12	2028 to 2032	2028
45475	Gorr Road	Road 38	East End of Road	Local	Rural	Surface treated	Class 4	900	4.8	4320	2022-04-30	47	270	$ 243,000.00	4	3	1997	30	12	2028 to 2032	2028
43375	Keeley Road	0.3km East of Sydenham	Park Valley Road	Local	Rural	Surface treated	Class 4	2200	6.5	14300	2022-04-30	60	270	$ 594,000.00	3	3	2007	30	9	2033 to 2039	2028
42580	Graham Road	Park Street	West End of Road	Local	Rural	Surface treated	Class 5	500	4.7	2350	2022-04-30	47	270	$ 135,000.00	4	3	2011	30	12	2028 to 2032	2029

ID	Street	From	To	Classification	Roadside Environment	Surface Type	Maintenace Class	Length (m)	Width (m)	Pavement Area (m2)	Last Inspection Date	Inspection OCI	Cost $/m assumed	Replacement Value Estimate	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Install / Last Reconstruct Date	Useful Life	Risk	Timing of First Replacement (based on Risk)	Timing of First Replacement (based on Risk)
43315	Jamieson Road	1.30km East of Road 38	Loughborough Portland	Local	Rural	Surface treated	Class 4	2300	5.6	12880	2022-04-30	51	270	$ 621,000.00	4	3	2014	30	12	2028 to 2032	2029
43990	Vanluven Road	Holleford Road	Loughborough Portland	Local	Rural	Surface treated	Class 4	2400	6.1	14640	2022-04-30	53	270	$ 648,000.00	4	3	2004	30	12	2028 to 2032	2029
45640	Salmon Lake Road	Bedford Road	North End of Road	Local	Rural	Surface treated	Class 5	2100	6.5	13650	2022-04-30	54	270	$ 567,000.00	4	3	2007	30	12	2028 to 2032	2029
57095	Sunbury Road	Hitchcock Drive	Brewer Lake Road	Arterial	Rural	Surface treated	Class 3	1400	7	9800	2022-04-30	71	855	$ 1,197,000.00	2	5	2012	30	10	2028 to 2032	2029
40540	Bracken Road	Yarker Road 4	Mclean Road	Local	Rural	Surface treated	Class 4	1550	5.9	9145	2022-04-30	50	270	$ 418,500.00	4	3	2011	30	12	2028 to 2032	2030
42760	Henderson Road	Wilton Road 18	Yarker Road 4	Local	Rural	Surface treated	Class 5	1600	5.9	9440	2022-04-30	53	270	$ 432,000.00	4	3	2007	30	12	2028 to 2032	2030
42340	Freeman Road	Gould Lake Road	Bedford Road	Local	Rural	Surface treated	Class 4	1950	6.2	12090	2022-04-30	57	270	$ 526,500.00	3	3	2007	30	9	2033 to 2039	2030
44305	Mclean Road	Wallace Road	Colebrook Road	Local	Rural	Surface treated	Class 4	1350	5.9	7965	2022-04-30	55	270	$ 364,500.00	3	3	2011	30	9	2033 to 2039	2030
42265	Forest Road	Murvale Road	Stage Coach Road	Local	Rural	Surface treated	Class 5	1900	6.1	11590	2022-04-30	52	270	$ 513,000.00	4	3	2007	30	12	2028 to 2032	2031
41590	Cross Road	Bellrock Road	Verona Sand Road	Local	Rural	Surface treated	Class 4	550	4.5	2475	2022-04-30	53	270	$ 148,500.00	4	3	2009	30	12	2028 to 2032	2031
45205	Quinn Road West	Wilton Road 18	Road 38	Local	Rural	Surface treated	Class 4	1550	3.9	6045	2022-04-30	53	270	$ 418,500.00	4	3	2009	30	12	2028 to 2032	2031
44005	Loughborough Portland Rd	Alton Road	Jamieson Road	Collector	Rural	Surface treated	Class 4	1350	6.5	8775	2022-04-30	58	375	$ 506,250.00	3	4	2004	30	12	2028 to 2032	2031
41605	Loughborough Portland Rd	Jamieson Road	Vanluven Road	Collector	Rural	Surface treated	Class 4	700	6.5	4550	2022-04-30	64	375	$ 262,500.00	3	4	2004	30	12	2028 to 2032	2031
45025	River Road	West End of Road	Petworth Road	Local	Rural	Surface treated	Class 4	250	4	1000	2022-04-30	69	270	$ 67,500.00	3	3	1998	30	9	2033 to 2039	2031
40135	Latimer Road	Holmes Road	Davidson Road	Local	Rural	Surface treated	Class 4	1400	6	8400	2022-04-30	59	270	$ 378,000.00	3	3	2001	30	9	2033 to 2039	2031
45940	Factory Road	Washburn Road	Sunbury Road	Local	Rural	Surface treated	Class 4	1400	5.5	7700	2022-04-30	55	270	$ 378,000.00	3	3	2003	30	9	2033 to 2039	2031
44530	Fellows Road	West End of Road	Murvale Road	Local	Rural	Surface treated	Class 6	800	3.8	3040	2022-04-30	58	270	$ 216,000.00	3	3	1995	30	9	2033 to 2039	2031
42100	McGarvey Road	Battersea Road	0.15km North of Batters	Local	Rural	Surface treated	Class 4	150	5.8	870	2022-04-30	60	270	$ 40,500.00	3	3	1990	30	9	2033 to 2039	2031
42670	Peters Road	Harrowsmith Road	East End of Road	Local	Rural	Surface treated	Class 6	300	3.6	1080	2022-04-30	79	270	$ 81,000.00	2	3	1999	30	6	2040 to 2046	2031
45490	Arena Boundary Road	Second Lake Road	Snider Road	Local	Rural	Surface treated	Class 4	800	5.4	4320	2022-04-30	80	270	$ 216,000.00	2	3	2001	30	6	2040 to 2046	2031
41725	Horning Road	West End of Road	Sydenham Road	Local	Rural	Surface treated	Class 5	1550	5.6	8680	2022-04-30	82	270	$ 418,500.00	2	3	2001	30	6	2040 to 2046	2031
44455	Rockwood Place	Collins Drive	Moreland Dixon Road	Local	Rural	Surface treated	Class 5	200	7.2	1440	2022-04-30	84	270	$ 54,000.00	2	3	2001	30	6	2040 to 2046	2031
43075	York Road	South End of Road	Bellrock Road	Local	Rural	Surface treated	Class 4	1300	6.1	7930	2022-04-30	65	270	$ 351,000.00	3	3	2000	30	9	2033 to 2039	2032
42085	Murton Road	Road 38	1.35km East of Road 38	Local	Rural	Surface treated	Class 4	1850	5.9	10915	2022-04-30	55	270	$ 499,500.00	3	3	1996	30	9	2033 to 2039	2032
44275	Murton Road	1.35km East of Road 38	Murvale Road	Local	Rural	Surface treated	Class 4	900	6.5	5850	2022-04-30	58	270	$ 243,000.00	3	3	1996	30	9	2033 to 2039	2032
41710	Fairgrounds Road	Perth Road 10	Latimer Road	Local	Rural	Surface treated	Class 5	300	6.4	1920	2022-04-30	61	270	$ 81,000.00	3	3	1997	30	9	2033 to 2039	2032
44590	Davidson Road	Holmes Road	Mowoods Lane	Local	Rural	Surface treated	Class 4	1500	6.4	9600	2022-04-30	62	270	$ 405,000.00	3	3	1995	30	9	2033 to 2039	2032
44070	New Morin Road	Vanluven Road	Holleford Road	Local	Rural	Surface treated	Class 4	1700	5.7	9690	2022-04-30	62	270	$ 459,000.00	3	3	1996	30	9	2033 to 2039	2032
42985	Mallen Road	Craig Road	0.10km North of Craig R	Local	Rural	Surface treated	Class 6	100	4	400	2022-04-30	63	270	$ 27,000.00	3	3	1995	30	9	2033 to 2039	2032
40600	Holleford Road	0.15km East of Road 38	Vanluven Road	Local	Rural	Surface treated	Class 4	1600	6.5	10400	2022-04-30	66	270	$ 432,000.00	3	3	2003	30	9	2033 to 2039	2032
45160	Crow Lake Road	0.45km West of Badour R	0.10km East of Badour R	Local	Rural	Surface treated	Class 4	550	6.4	3520	2022-04-30	59	270	$ 148,500.00	3	3	2004	30	9	2033 to 2039	2032
46270	Station Street	Walker Street	Bank Street	Local	Urban	Surface treated	Class 5	100	5	500	2022-04-30	55	1050	$ 105,000.00	3	3	2005	30	9	2033 to 2039	2032
50750	Davidson Road	Mowoods Lane	Latimer Road	Local	Rural	Surface treated	Class 4	1300	6.4	8320	2022-04-30	75	270	$ 351,000.00	2	3	2002	30	6	2040 to 2046	2032
42370	Bradford Road	Wolfe Swamp Road	Ellerbeck Road	Local	Rural	Surface treated	Class 4	650	5.5	3575	2022-04-30	68	270	$ 175,500.00	3	3	2003	30	9	2033 to 2039	2033
43705	Frontenac Road	Mount Chesney Road	Battersea Road	Local	Rural	Surface treated	Class 4	500	5.5	2750	2022-04-30	69	270	$ 135,000.00	3	3	2003	30	9	2033 to 2039	2033
45985	Latimer Road	Davidson Road	Holmes Road	Collector	Rural	Surface treated	Class 4	2300	6	13800	2022-04-30	70	375	$ 862,500.00	2	4	1992	30	8	2033 to 2039	2033
40585	Stage Coach Road	Railton Road	Campbell Road	Collector	Rural	Surface treated	Class 4	2200	6.5	14300	2022-04-30	73	375	$ 825,000.00	2	4	1995	30	8	2033 to 2039	2033
40045	Bradford Road	2.00km East of Camden P	Wolfe Swamp Road	Collector	Rural	Surface treated	Class 4	2500	5.7	14250	2022-04-30	80	375	$ 937,500.00	2	4	1993	30	8	2033 to 2039	2033
45175	Alton Road	Loughborough Portland R	Bedford Road	Collector	Rural	Surface treated	Class 4	3700	6	22200	2022-04-30	80	375	$ 1,387,500.00	2	4	2003	30	8	2033 to 2039	2033
43210	Mount Chesney Road	Frontenac Road	Beach Nut Road	Local	Rural	Surface treated	Class 4	1600	6.1	9760	2022-04-30	77	270	$ 432,000.00	2	3	2001	30	6	2040 to 2046	2033
41695	Quarry Road	0.40km North of Boyce R	1.30km North of Boyce R	Local	Rural	Surface treated	Class 6	900	5.5	4950	2022-04-30	70	270	$ 243,000.00	2	3	2003	30	6	2040 to 2046	2033
43015	Davidson Road	Latimer Road	Holmes Road	Local	Rural	Surface treated	Class 4	1000	6.4	6400	2022-04-30	71	270	$ 270,000.00	2	3	2003	30	6	2040 to 2046	2033
43105	Holleford Road	Trousdale Road	New Morin Road	Local	Rural	Surface treated	Class 4	1800	6.1	10980	2022-04-30	72	270	$ 486,000.00	2	3	2003	30	6	2040 to 2046	2033
45415	Holmes Road	Silverwood Drive	Davidson Road	Local	Rural	Surface treated	Class 4	900	6.4	5760	2022-04-30	73	270	$ 243,000.00	2	3	2003	30	6	2040 to 2046	2033
40645	Rideau Road	Burnt Hills Road	0.75km North of Burnt H	Local	Rural	Surface treated	Class 4	950	4.9	4655	2022-04-30	76	270	$ 256,500.00	2	3	1993	30	6	2040 to 2046	2033
42505	Bradshaw Road	Steele Road	East End of Road	Local	Rural	Surface treated	Class 4	1900	4.6	8740	2022-04-30	78	270	$ 513,000.00	2	3	2003	30	6	2040 to 2046	2033
46675	German Road	1.65km North of Petworth	Long Swamp Road	Local	Rural	Surface treated	Class 4	1500	5.5	8250	2022-04-30	78	270	$ 405,000.00	2	3	2003	30	6	2040 to 2046	2033
40930	Wilmer Road	McFadden Road	Ritchie Road	Local	Rural	Surface treated	Class 4	800	5.3	4240	2022-04-30	78	270	$ 216,000.00	2	3	2003	30	6	2040 to 2046	2033
41275	Camden Portland Boundar	Yarker Road 4	Colebrook Road	Local	Rural	Surface treated	Class 4	2850	5.6	15960	2022-04-30	79	270	$ 769,500.00	2	3	2003	30	6	2040 to 2046	2033
46105	Church Road (Bellrock)	Bellrock Road	Mary Moore Road	Local	Rural	Surface treated	Class 4	1500	5.3	7950	2022-04-30	79	270	$ 405,000.00	2	3	2003	30	6	2040 to 2046	2033
41335	Switzer Road	Portland Avenue	North End of Road	Local	Rural	Surface treated	Class 6	200	3	600	2022-04-30	80	270	$ 54,000.00	2	3	2003	30	6	2040 to 2046	2033
44080	Clark Road	McConnell Road	East End of Road	Local	Rural	Surface treated	Class 5	900	3.8	3420	2022-04-30	82	270	$ 243,000.00	2	3	2003	30	6	2040 to 2046	2033
45430	Petworth Road	Kerr Road	Road 38	Local	Rural	Surface treated	Class 4	3550	6.3	22365	2022-04-30	83	270	$ 958,500.00	2	3	2003	30	6	2040 to 2046	2033
45055	Maple Crest Road	Lakefield Drive	0.80km East of Lakefield	Local	Rural	Surface treated	Class 5	800	5.8	4640	2022-04-30	83	550	$ 440,000.00	2	3	1992	30	6	2040 to 2046	2033
41515	Rideau Road	0.75km North of Burnt Hi	North End of Road	Local	Rural	Surface treated	Class 4	100	4.5	450	2022-04-30	84	270	$ 27,000.00	2	3	2003	30	6	2040 to 2046	2033
44545	Murvale Road	Scanlan Road	Amey Road	Local	Rural	Surface treated	Class 4	1400	6.5	9100	2022-04-30	90	270	$ 378,000.00	1	3	2003	30	3	2047 to 2052	2033
44560	Copper Kettle Drive	Lakefield Drive	Maple Crest Court	Local	Rural	Surface treated	Class 5	400	5.8	2320	2022-04-30	90	550	$ 220,000.00	1	3	1992	30	3	2047 to 2052	2033
46315	Murvale Road	Murton Road	Scanlan Road	Local	Rural	Surface treated	Class 4	1550	6.5	10075	2022-04-30	93	270	$ 418,500.00	1	3	2003	30	3	2047 to 2052	2033
57900	Westport Road	New Road	0.20km East of Burridge	Arterial	Rural	Surface treated	Class 4	3400	6.6	22440	2022-04-30	55	450	$ 1,530,000.00	3	5	2018	30	15	2028 to 2032	2034
43600	Quarry Road	Boyce Road	0.40km North of Boyce R	Local	Rural	Surface treated	Class 6	400	5	2000	2022-04-30	69	270	$ 108,000.00	3	3	2004	30	9	2033 to 2039	2034
52610	Lakefield Drive	2.00km South of Holmes	1.30km South of Holmes	Local	Rural	Surface treated	Class 4	700	6.2	4340	2022-04-30	77	270	$ 189,000.00	2	3	2004	30	6	2040 to 2046	2034
46015	Desert Lake Road	0.15km West of High Falls	0.15km East of High Falls	Arterial	Rural	Surface treated	Class 5	300	6.7	2010	2022-04-30	89	450	$ 135,000.00	1	5	2004	30	5	2040 to 2046	2034
40245	Trousdale Road	Hinchinbrooke Road	Holleford Road	Local	Rural	Surface treated	Class 4	1700	6.2	10540	2022-04-30	55	270	$ 459,000.00	3	3	2005	30	9	2033 to 2039	2035
43000	Cedarwoods Drive	Road 38	Valleyview Drive	Local	Rural	Surface treated	Class 5	360	6.9	2484	2022-04-30	66	270	$ 97,200.00	3	3	2005	30	9	2033 to 2039	2035
50625	Holleford Road	Vanluven Road	Trousdale Road	Local	Rural	Surface treated	Class 4	1350	6.2	8370	2022-04-30	83	270	$ 364,500.00	2	3	2005	30	6	2040 to 2046	2035
45010	Petworth Road	River Road	Kerr Road	Local	Rural	Surface treated	Class 4	3250	6.7	21775	2022-04-30	88	270	$ 877,500.00	1	3	1998	30	3	2047 to 2052	2035
46780	Petworth Road	Garrison Court	River Road	Local	Rural	Surface treated	Class 4	1250	6.7	8375	2022-04-30	90	270	$ 337,500.00	1	3	1998	30	3	2047 to 2052	2036
45655	Verona Sand Road	West End of Road	Cross Road	Local	Rural	Surface treated	Class 4	2200	5	11000	2022-04-30	55	270	$ 594,000.00	3	3	2007	30	9	2033 to 2039	2037
42010	Duff Road	Round Lake Road	North End of Road	Local	Rural	Surface treated	Class 5	2250	6.1	13725	2022-04-30	63	270	$ 607,500.00	3	3	2007	30	9	2033 to 2039	2037
45550	Round Lake Road	1.20km East of Latimer Rd	2.20km East of Latimer R	Local	Rural	Surface treated	Class 6	1000	6.3	6300	2022-04-30	68	270	$ 270,000.00	3	3	2007	30	9	2033 to 2039	2037
45505	Rosedale Road	Alton Road	Freeman Road	Local	Rural	Surface treated	Class 4	1350	6.3	8505	2022-04-30	85	270	$ 364,500.00	1	3	2007	30	3	2047 to 2052	2037
41785	Deer Creek Drive	Spooner Road	0.40km North of Spoone	Local	Rural	Surface treated	Class 5	400	6	2400	2022-04-30	90	270	$ 108,000.00	1	3	2007	30	3	2047 to 2052	2037
45040	Orser Road	West End of Road	Stage Coach Road	Local	Rural	Surface treated	Class 4	1200	6	7200	2022-04-30	54	270	$ 324,000.00	4	3	1998	30	12	2028 to 2032	2038
44695	Norway Road	McFadden Road	Wilmer Road	Local	Rural	Surface treated	Class 4	1900	5.2	9880	2022-04-30	68	270	$ 513,000.00	3	3	2008	30	9	2033 to 2039	2038
40960	Greenfield Road	0.70km West of Perth Ro	Perth Road 10	Local	Rural	Surface treated	Class 4	700	6.7	4690	2022-04-30	74	270	$ 189,000.00	2	3	2000	30	6	2040 to 2046	2038
42115	Spooner Road	West End of Road	0.45km West of Perth R	Local	Rural	Surface treated	Class 4	700	6	4200	2022-04-30	57	270	$ 189,000.00	3	3	1995	30	9	2033 to 2039	2039
45670	Verona Sand Road	Cross Road	0.70km East of Cross Ro	Local	Rural	Surface treated	Class 4	700	5.4	3780	2022-04-30	56	270	$ 189,000.00	3	3	2009	30	9	2033 to 2039	2039
46750	Wolfe Swamp Road	Colebrook Road	Petworth Road	Local	Rural	Surface treated	Class 4	2900	6.3	18270	2022-04-30	58	270	$ 783,000.00	3	3	2009	30	9	2033 to 2039	2039
41050	Canoe Lake Road	Desert Lake Road	Holsgrove Lane	Local	Rural	Surface treated	Class 4	2000	6.7	13400	2022-04-30	62	270	$ 540,000.00	3	3	2009	30	9	2033 to 2039	2039
43870	Leveque Road	0.10km North of Bellrock	Bellrock Pero Road	Local	Rural	Surface treated	Class 6	1000	6	6000	2022-04-30	68	270	$ 270,000.00	3	3	2009	30	9	2033 to 2039	2039
45370	Redmond Road	0.25km West of Holleford	Holleford Road	Local	Rural	Surface treated	Class 6	250	6.4	1600	2022-04-30	74	270	$ 67,500.00	2	3	2009	30	6	2040 to 2046	2039
42595	Graham Road	Park Street	Road 38	Local	Rural	Surface treated	Class 5	200	4.7	940	2022-04-30	77	270	$ 54,000.00	2	3	2009	30	6	2040 to 2046	2039
40165	Arena Boundary Road	Davey Road	2.15km East of Davey Rd	Local	Rural	Surface treated	Class 4	2150	6	12900	2022-04-30	64	270	$ 580,500.00	3	3	2010	30	9	2033 to 2039	2040
43690	Latimer Road	Dover Road	Davidson Road	Collector	Rural	Surface treated	Class 4	950	6.4	6080	2022-04-30	75	375	$ 356,250.00	2	4	2010	30	8	2033 to 2039	2040
42550	Holmes Road	Heska Crescent	Heska Crescent	Local	Rural	Surface treated	Class 4	1350	6.7	9045	2022-04-30	80	270	$ 364,500.00	2	3	2000	30	6	2040 to 2046	2040
56980	Mount Chesney Road	West End of Road	Battersea Road	Local	Rural	Surface treated	Class 5	1000	5.4	5400	2022-04-30	76	270	$ 270,000.00	2	3	2002	30	6	2040 to 2046	2040

ID	Street	From	To	Classification	Roadside Environment	Surface Type	Maintenace Class	Length (m)	Width (m)	Pavement Area (m2)	Last Inspection Date	Inspection OCI	Cost $/m assumed	Replacement Value Estimate	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Install / Last Reconstruct Date	Useful Life	Risk	Timing of First Replacement (based on Risk)	Timing of First Replacement (based on Risk)
43615	Lakefield Drive	1.30km South of Holmes I	Holmes Road	Local	Rural	Surface treated	Class 4	1300	5.4	7020	2022-04-30	72	270	$ 351,000.00	2	3	1990	30	6	2040 to 2046	2040
43095	Holmes Road	Heska Crescent	Silverwood Drive	Local	Rural	Surface treated	Class 4	600	6.4	3840	2022-04-30	73	270	$ 162,000.00	2	3	2010	30	6	2040 to 2046	2040
42490	German Road	Petworth Road	1.65km North of Petwor	Local	Rural	Surface treated	Class 4	1650	6.1	10065	2022-04-30	74	270	$ 445,500.00	2	3	1996	30	6	2040 to 2046	2040
42790	Heska Crescent	Holmes Road	Holmes Road	Local	Rural	Surface treated	Class 5	1250	6.7	8375	2022-04-30	75	270	$ 337,500.00	2	3	2010	30	6	2040 to 2046	2040
43450	Kildeer Drive	Pine Ridge Road	North End of Road	Local	Rural	Surface treated	Class 6	200	5.1	1020	2022-04-30	75	270	$ 54,000.00	2	3	1996	30	6	2040 to 2046	2040
43345	Johns Way Road	Heska Crescent	Heska Crescent	Local	Rural	Surface treated	Class 6	300	6.5	1950	2022-04-30	75	270	$ 81,000.00	2	3	2010	30	6	2040 to 2046	2040
41740	Davidson Road	Latimer Road	Perth Road 10	Local	Rural	Surface treated	Class 4	2600	6.4	16640	2022-04-30	76	270	$ 702,000.00	2	3	1995	30	6	2040 to 2046	2040
40000	Abernathy Road	Ida Hill Road	0.8km East of Ida Hill Ro	Local	Rural	Surface treated	Class 4	800	5.9	4720	2022-04-30	76	270	$ 216,000.00	2	3	2010	30	6	2040 to 2046	2040
43630	Lakeside Road	West End of Road	Duff Road	Local	Rural	Surface treated	Class 4	300	4.8	1440	2022-04-30	79	270	$ 81,000.00	2	3	1994	30	6	2040 to 2046	2040
45535	Round Lake Road	Latimer Road	1.20km East of Latimer F	Local	Rural	Surface treated	Class 4	1200	6.2	7440	2022-04-30	79	270	$ 324,000.00	2	3	1995	30	6	2040 to 2046	2040
45970	Stage Coach Road	Orser Road	Railton Road	Local	Rural	Surface treated	Class 4	2900	5.6	16240	2022-04-30	79	270	$ 783,000.00	2	3	1995	30	6	2040 to 2046	2040
46420	Washburn Road	Ida Hill Road	Factory Road	Local	Rural	Surface treated	Class 4	1600	6.6	10560	2022-04-30	80	270	$ 432,000.00	2	3	1994	30	6	2040 to 2046	2040
42415	Garrison Court	South End of Road	Petworth Road	Local	Rural	Surface treated	Class 5	450	5.5	2475	2022-04-30	80	270	$ 121,500.00	2	3	1995	30	6	2040 to 2046	2040
44470	Mount Chesney Road	Battersea Road	Frontenac Road	Local	Rural	Surface treated	Class 4	400	5.8	2320	2022-04-30	81	270	$ 108,000.00	2	3	1995	30	6	2040 to 2046	2040
45340	Randy Clark Road	West End of Road	Battersea Road	Local	Rural	Surface treated	Class 4	2200	6.1	13420	2022-04-30	82	270	$ 594,000.00	2	3	1997	30	6	2040 to 2046	2040
44185	Masonville Road	North End of Road	Craig Road	Local	Rural	Surface treated	Class 6	250	3.5	875	2022-04-30	82	270	$ 67,500.00	2	3	1996	30	6	2040 to 2046	2040
40945	Camden Portland Boundar	Colebrook Road	Petworth Road	Local	Rural	Surface treated	Class 4	2100	5.5	11550	2022-04-30	84	270	$ 567,000.00	2	3	1996	30	6	2040 to 2046	2040
45835	Silverwood Drive	Holmes Road	North End of Road	Local	Rural	Surface treated	Class 4	950	5.9	5605	2022-04-30	84	270	$ 256,500.00	2	3	2010	30	6	2040 to 2046	2040
43720	Campbell Road	0.5km West of Stage Coac	Stage Coach Road	Local	Rural	Surface treated	Class 4	2000	6.4	12800	2022-04-30	85	270	$ 540,000.00	1	3	2000	30	3	2047 to 2052	2040
44485	Gould Lake Road	Freeman Road	0.85km North of Freema	Local	Rural	Surface treated	Class 4	900	6.1	5490	2022-04-30	85	270	$ 243,000.00	1	3	2000	30	3	2047 to 2052	2040
43060	Holleford Road	Deer Park Lane	Desert Lake Road	Local	Rural	Surface treated	Class 4	2700	6.6	17820	2022-04-30	60	270	$ 729,000.00	3	3	2011	30	9	2033 to 2039	2041
46375	Wallace Road	Camden Portland Bounda	Mclean Road	Local	Rural	Surface treated	Class 4	3300	5.6	18480	2022-04-30	60	270	$ 891,000.00	3	3	2011	30	9	2033 to 2039	2041
42955	Hogan Road	West End of Road	Wilmer Road	Local	Rural	Surface treated	Class 4	1900	4.9	9310	2022-04-30	67	270	$ 513,000.00	3	3	2011	30	9	2033 to 2039	2041
43120	Holmes Road	Davidson Road	Latimer Road	Local	Rural	Surface treated	Class 4	1400	6.7	9380	2022-04-30	67	270	$ 378,000.00	3	3	2011	30	9	2033 to 2039	2041
46690	Wilmer Road	Ritchie Road	Norway Road	Local	Rural	Surface treated	Class 4	1750	5.3	9275	2022-04-30	71	270	$ 472,500.00	2	3	2011	30	6	2040 to 2046	2041
46660	Wilmer Road	Rutledge Road	McFadden Road	Local	Rural	Surface treated	Class 4	4750	6.7	31825	2022-04-30	72	270	$ 1,282,500.00	2	3	2011	30	6	2040 to 2046	2041
45130	Princess Road	West End of Road	0.15km West of Batters	Local	Urban	Surface treated	Class 5	1650	6.1	10065	2022-04-30	75	1050	$ 1,732,500.00	2	3	2011	30	6	2040 to 2046	2041
43825	Leland Road	0.30km East of Perth Roa	1.60km East of Perth Ro	Local	Rural	Surface treated	Class 4	1600	6.3	10080	2022-04-30	77	270	$ 432,000.00	2	3	2011	30	6	2040 to 2046	2041
46705	Wilmer Road	Norway Road	0.05km West of Perth Ro	Local	Rural	Surface treated	Class 4	700	5.4	3780	2022-04-30	83	270	$ 189,000.00	2	3	2011	30	6	2040 to 2046	2041
45220	Railton Road	Murvale Road	Stage Coach Road	Collector	Rural	Surface treated	Class 4	1800	6.7	12060	2022-04-30	88	375	$ 675,000.00	1	4	2011	30	4	2040 to 2046	2041
43810	Leland Road	Perth Road 10	0.30km East of Perth Ro	Local	Rural	Surface treated	Class 4	300	6.2	1860	2022-04-30	85	270	$ 81,000.00	1	3	2011	30	3	2047 to 2052	2041
45460	Ritchie Road	Wilmer Road	Perth Road 10	Local	Rural	Surface treated	Class 4	1900	6.6	12540	2022-04-30	66	270	$ 513,000.00	3	3	2012	30	9	2033 to 2039	2042
45385	Revell Road	Bank Street	North End of Road	Local	Urban	Surface treated	Class 5	900	6.1	5490	2022-04-30	66	1050	$ 945,000.00	3	3	2012	30	9	2033 to 2039	2042
44380	Middle Woodlands Drive	Autumn Ridge Drive	South End of Road	Local	Rural	Surface treated	Class 6	500	7	3500	2022-04-30	66	270	$ 135,000.00	3	3	2012	30	9	2033 to 2039	2042
44635	North Shore Crescent	Perth Road 10	Perth Road 10	Local	Rural	Surface treated	Class 4	1100	6.5	7150	2022-04-30	67	270	$ 297,000.00	3	3	2012	30	9	2033 to 2039	2042
41485	Collins Drive	Autumn Ridge Drive	West End of Road	Local	Rural	Surface treated	Class 6	150	7	1050	2022-04-30	69	270	$ 40,500.00	3	3	2012	30	9	2033 to 2039	2042
44770	Old Boy Road	Perth Road 10	Holmes Road	Local	Rural	Surface treated	Class 4	1600	6.4	10240	2022-04-30	72	270	$ 432,000.00	2	3	2012	30	6	2040 to 2046	2042
46570	White Lake Road	Buck Bay Road	1.70km East of Buck Bay	Local	Rural	Surface treated	Class 4	1700	6.1	10370	2022-04-30	75	270	$ 459,000.00	2	3	2012	30	6	2040 to 2046	2042
44230	McConnell Road	South End of Road	Clark Road	Local	Rural	Surface treated	Class 5	1600	4.5	7200	2022-04-30	75	270	$ 432,000.00	2	3	2012	30	6	2040 to 2046	2042
44245	McConnell Road	Clark Road	Yarker Road 4	Local	Rural	Surface treated	Class 5	1450	5.5	7975	2022-04-30	76	270	$ 391,500.00	2	3	2012	30	6	2040 to 2046	2042
40240	Autumn Ridge Drive	Middle Woodland Drive	South End of Road	Local	Rural	Surface treated	Class 6	300	7.2	2160	2022-04-30	78	270	$ 81,000.00	2	3	2012	30	6	2040 to 2046	2042
40570	Bradford Road	Camden Portland Bounda	2.00km East of Camden	Local	Rural	Surface treated	Class 4	500	5.7	2850	2022-04-30	81	270	$ 135,000.00	2	3	2012	30	6	2040 to 2046	2042
43585	Lakefield Drive	South End of Road	Holmes Road	Local	Rural	Surface treated	Class 4	600	6.2	3720	2022-04-30	81	270	$ 162,000.00	2	3	2012	30	6	2040 to 2046	2042
41550	Country Woods Drive	Campbell Road	South End of Road	Local	Rural	Surface treated	Class 4	700	6	4200	2022-04-30	84	270	$ 189,000.00	2	3	2012	30	6	2040 to 2046	2042
42700	Greenfield Road	0.77km East of Perth Roa	Duff Road	Local	Rural	Surface treated	Class 4	830	6.1	5063	2022-04-30	84	270	$ 224,100.00	2	3	2012	30	6	2040 to 2046	2042
46150	Sydenham Walker Road	Loughborough Portland R	Rock Quarry Lane	Local	Rural	Surface treated	Class 4	1000	6.4	6400	2022-04-30	84	270	$ 270,000.00	2	3	2012	30	6	2040 to 2046	2042
40300	Bank Street	Revell Road	Revell Road	Local	Rural	Surface treated	Class 5	500	6	3000	2022-04-30	86	270	$ 135,000.00	1	3	2012	30	3	2047 to 2052	2042
43135	Holmes Road	Latimer Road	Old Boy Road	Local	Rural	Surface treated	Class 4	400	6.4	2560	2022-04-30	87	270	$ 108,000.00	1	3	2012	30	3	2047 to 2052	2042
42055	Ellerbeck Road	Bradford Road	Petworth Road	Local	Rural	Surface treated	Class 6	1500	4.5	6750	2022-04-30	58	270	$ 405,000.00	3	3	2013	30	9	2033 to 2039	2043
40150	Arena Boundary Road	Snider Road	Davey Road	Local	Rural	Surface treated	Class 4	2150	4.7	10105	2022-04-30	63	270	$ 580,500.00	3	3	2013	30	9	2033 to 2039	2043
40780	Burnett Road	South End of Road	Road 38	Local	Rural	Surface treated	Class 4	300	5.9	1770	2022-04-30	69	270	$ 81,000.00	3	3	2013	30	9	2033 to 2039	2043
40201	Burnt Hills Road	1.8km East of Battersea F	5.0km East of Battersea	Local	Rural	Surface treated	Class 4	3250	5.8	18850	2022-04-30	70	270	$ 877,500.00	2	3	2013	30	6	2040 to 2046	2043
40270	Badour Road	South End of Road	Crow Lake Road	Local	Rural	Surface treated	Class 4	2200	5.2	11440	2022-04-30	75	270	$ 594,000.00	2	3	2013	30	6	2040 to 2046	2043
40510	Boyce Road	Watson Road	0.7km West of Road 38	Local	Rural	Surface treated	Class 4	1780	5.5	9790	2022-04-30	75	270	$ 480,600.00	2	3	2013	30	6	2040 to 2046	2043
41065	Canoe Lake Road	Holsgrove Lane	James Wilson Road	Local	Rural	Surface treated	Class 4	2300	6	13800	2022-04-30	76	270	$ 621,000.00	2	3	2013	30	6	2040 to 2046	2043
46735	Wolfe Lake Road	Westport Road	North End of Road	Local	Rural	Surface treated	Class 4	2200	6	13200	2022-04-30	77	270	$ 594,000.00	2	3	2013	30	6	2040 to 2046	2043
42250	Forest Hill Point	Valleyview Drive	South End of Road	Local	Rural	Surface treated	Class 6	400	6.7	2680	2022-04-30	78	270	$ 108,000.00	2	3	2013	30	6	2040 to 2046	2043
43180	Holmes Road	Lakefield Drive	Davidson Road	Local	Rural	Surface treated	Class 4	1500	6.5	9750	2022-04-30	80	270	$ 405,000.00	2	3	2013	30	6	2040 to 2046	2043
44365	Mica Point Road	South End of Road	Badour Road	Local	Rural	Surface treated	Class 6	450	4.5	2025	2022-04-30	82	270	$ 121,500.00	2	3	2013	30	6	2040 to 2046	2043
44680	Norway Road	Draper Lake Road	Charlie Green Road	Local	Rural	Surface treated	Class 4	100	5.2	520	2022-04-30	84	270	$ 27,000.00	2	3	2013	30	6	2040 to 2046	2043
45715	Sands Road	Battersea Road	East End of Road	Local	Rural	Surface treated	Class 4	2600	6.7	17420	2022-04-30	84	270	$ 702,000.00	2	3	2013	30	6	2040 to 2046	2043
43665	Norway Road	Draper Lake Road	Norway Road	Local	Rural	Surface treated	Class 6	150	5.8	870	2022-04-30	84	270	$ 40,500.00	2	3	2013	30	6	2040 to 2046	2043
40975	Campbell Road	Murvale Road	Stage Coach Road	Local	Rural	Surface treated	Class 4	2000	6.4	12800	2022-04-30	85	270	$ 540,000.00	1	3	2013	30	3	2047 to 2052	2043
44395	Milburn Road	Ida Hill Road	2.0km West of Ida Hill Ro	Local	Rural	Surface treated	Class 4	2000	6.5	13000	2022-04-30	85	270	$ 540,000.00	1	3	2013	30	3	2047 to 2052	2043
57670	Westport Road	2.70km West of Buck Bay	Buck Bay Road	Arterial	Rural	Surface treated	Class 4	2700	6.4	17280	2022-04-30	67	450	$ 1,215,000.00	3	5	2014	30	15	2028 to 2032	2044
51345	Bedford Road	1.5km North of Freeman I	Busch Lane	Arterial	Rural	Surface treated	Class 4	4050	6.2	25110	2022-04-30	72	450	$ 1,822,500.00	2	5	2014	30	10	2028 to 2032	2044
43945	Loughborough Drive Road	South End of Road	Sydenham Road	Local	Rural	Surface treated	Class 6	500	4.3	2150	2022-04-30	64	270	$ 135,000.00	3	3	2014	30	9	2033 to 2039	2044
45955	Spooner Road	Perth Road 10	East End of Road	Local	Rural	Surface treated	Class 4	550	6	3300	2022-04-30	66	270	$ 148,500.00	3	3	2014	30	9	2033 to 2039	2044
46300	Valleyview Drive	South End of Road	Cedarwoods Drive	Local	Rural	Surface treated	Class 5	500	6.3	3150	2022-04-30	67	270	$ 135,000.00	3	3	2014	30	9	2033 to 2039	2044
44575	Mustard Road	East End of Road	Craig Road	Local	Rural	Surface treated	Class 6	250	3.5	875	2022-04-30	68	270	$ 67,500.00	3	3	2014	30	9	2033 to 2039	2044
43195	Holmes Road	Davidson Road	Moreland Dixon Road	Local	Rural	Surface treated	Class 4	600	6.1	3660	2022-04-30	72	270	$ 162,000.00	2	3	2014	30	6	2040 to 2046	2044
40966	Milburn Road	Battersea Road	Ida Hill Road	Local	Rural	Surface treated	Class 4	850	6.5	5525	2022-04-30	73	270	$ 229,500.00	2	3	2014	30	6	2040 to 2046	2044
41185	Cedarwoods Drive	Valleyview Drive	0.30km North of Valleyv	Local	Rural	Surface treated	Class 5	310	6.9	2139	2022-04-30	73	270	$ 83,700.00	2	3	2014	30	6	2040 to 2046	2044
46510	Wellington Street	United Street	Milburn Road	Local	Rural	Surface treated	Class 4	550	6.5	3575	2022-04-30	74	270	$ 148,500.00	2	3	2014	30	6	2040 to 2046	2044
41005	Canoe Lake Road	Desert Lake Road	0.8km North of Desert La	Local	Rural	Surface treated	Class 4	850	6	5100	2022-04-30	75	270	$ 229,500.00	2	3	2014	30	6	2040 to 2046	2044
43570	Lake Road	0.60km West of Lower Ro	Lower Round Lake Road	Local	Rural	Surface treated	Class 6	600	5	3000	2022-04-30	75	270	$ 162,000.00	2	3	2014	30	6	2040 to 2046	2044
45520	Round Lake Road	Moreland Dixon Road	Latimer Road	Local	Rural	Surface treated	Class 5	800	6	4800	2022-04-30	79	270	$ 216,000.00	2	3	2014	30	6	2040 to 2046	2044
44950	Park Street	Centennial Park Road	Graham Road	Local	Rural	Surface treated	Class 5	200	7.1	1420	2022-04-30	80	270	$ 54,000.00	2	3	2014	30	6	2040 to 2046	2044
44965	Park Valley Road	South End of Road	Keeley Road	Local	Rural	Surface treated	Class 4	450	7.3	3285	2022-04-30	81	270	$ 121,500.00	2	3	2014	30	6	2040 to 2046	2044
41380	Cliffside Drive	Railton Road	North End of Road	Local	Rural	Surface treated	Class 5	800	6.4	5120	2022-04-30	82	270	$ 216,000.00	2	3	2014	30	6	2040 to 2046	2044
40495	Botting Road	Bedford Road	Sills Bay Road	Local	Rural	Surface treated	Class 4	750	6.2	4650	2022-04-30	84	270	$ 202,500.00	2	3	2014	30	6	2040 to 2046	2044
40210	Ashwood Drive	Rutledge Road	North End of Road	Local	Rural	Surface treated	Class 5	800	5.6	4480	2022-04-30	87	550	$ 440,000.00	1	3	2014	30	3	2047 to 2052	2044
40967	Milburn Road	2.9km East of Battersea R	0.45km East of Ormsbee	Local	Rural	Surface treated	Class 4	1450	6.5	9425	2022-04-30	90	270	$ 391,500.00	1	3	2014	30	3	2047 to 2052	2044
44350	Meadow Ridge Road	Park Valley Road	East End of Road	Local	Rural	Surface treated	Class 6	130	7.3	949	2022-04-30	90	270	$ 35,100.00	1	3	2014	30	3	2047 to 2052	2044
44410	Milburn Road	1.80km South of Batterse	Wellington Street	Local	Rural	Surface treated	Class 4	1800	6.5	11700	2022-04-30	92	270	$ 486,000.00	1	3	2014	30	3	2047 to 2052	2044
53070	Desert Lake Road	2.55km West of Bedford I	1.90km West of Bedford	Arterial	Rural	Surface treated	Class 5	650	6.7	4355	2022-04-30	75	450	$ 292,500.00	2	5	2015	30	10	2028 to 2032	2045

ID	Street	From	To	Classification	Roadside Environment	Surface Type	Maintenace Class	Length (m)	Width (m)	Pavement Area (m2)	Last Inspection Date	Inspection OCI	Cost $/m assumed	Replacement Value Estimate	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Install / Last Reconstruct Date	Useful Life	Risk	Timing of First Replacement (based on Risk)	Timing of First Replacement (based on Risk)
53300	Desert Lake Road	1.70km West of Bedford I	Bedford Road	Arterial	Rural	Surface treated	Class 5	1700	6.7	11390	2022-04-30	76	450	$ 765,000.00	2	5	2015	30	10	2028 to 2032	2045
52955	Desert Lake Road	Deyos Road	Holleford Road	Arterial	Rural	Surface treated	Class 5	2800	6.7	18760	2022-04-30	80	450	$ 1,260,000.00	2	5	2015	30	10	2028 to 2032	2045
41410	Colebrook Road	1.70km East of Cambden	2.70km East of Cambder	Local	Rural	Surface treated	Class 4	1000	6.5	6500	2022-04-30	58	270	$ 270,000.00	3	3	2015	30	9	2033 to 2039	2045
42160	First Lake Road	0.70km North of Bellrock	1.70km North of Bellrock	Local	Rural	Surface treated	Class 4	1000	6	6000	2022-04-30	59	270	$ 270,000.00	3	3	2015	30	9	2033 to 2039	2045
44440	Morrison Road	West End of Road	Wilmer Road	Local	Rural	Surface treated	Class 4	1200	5.5	6600	2022-04-30	60	270	$ 324,000.00	3	3	2015	30	9	2033 to 2039	2045
41425	Colebrook Road	2.70km East of Cambden	3.80km East of Cambder	Local	Rural	Surface treated	Class 4	1100	6.5	7150	2022-04-30	64	270	$ 297,000.00	3	3	2015	30	9	2033 to 2039	2045
41395	Colebrook Road	Cambden Portland Bound	1.70km East of Cambder	Local	Rural	Surface treated	Class 4	1700	6.5	11050	2022-04-30	65	270	$ 459,000.00	3	3	2015	30	9	2033 to 2039	2045
42640	Green Bay Road	Burns Road	Burridge Road	Local	Rural	Surface treated	Class 4	2900	6	17400	2022-04-30	65	270	$ 783,000.00	3	3	2015	30	9	2033 to 2039	2045
44170	Mary Moore Road	Church Road (Bellrock)	2.07km North of Church	Local	Rural	Surface treated	Class 4	2200	5.5	12100	2022-04-30	65	270	$ 594,000.00	3	3	2015	30	9	2033 to 2039	2045
46405	Washburn Road	Battersea Road	Ida Hill Road	Local	Rural	Surface treated	Class 4	2000	6.2	12400	2022-04-30	66	270	$ 540,000.00	3	3	2015	30	9	2033 to 2039	2045
45190	Quinn Road East	Road 38	East End of Road	Local	Rural	Surface treated	Class 4	1600	5.2	8320	2022-04-30	67	270	$ 432,000.00	3	3	2015	30	9	2033 to 2039	2045
42865	Hinchinbrooke Road	0.20km North of Road 38	0.29km North of Trousda	Local	Rural	Surface treated	Class 5	1000	6.4	6400	2022-04-30	67	270	$ 270,000.00	3	3	2015	30	9	2033 to 2039	2045
41035	Canoe Lake Road	1.3km North of Desert Lal	2.8km North of Desert La	Local	Rural	Surface treated	Class 4	1500	6.7	10050	2022-04-30	68	270	$ 405,000.00	3	3	2015	30	9	2033 to 2039	2045
41440	Colebrook Road	3.80km East of Cambden	5.30km East of Cambder	Local	Rural	Surface treated	Class 4	1500	6.5	9750	2022-04-30	68	270	$ 405,000.00	3	3	2015	30	9	2033 to 2039	2045
44155	Mary Moore Road	2.07km North of Church R	3.17km North of Church	Local	Rural	Surface treated	Class 4	1100	5.5	6050	2022-04-30	69	270	$ 297,000.00	3	3	2015	30	9	2033 to 2039	2045
45280	Railton Road	0.05km East of Sydenham	Cliffside Drive	Collector	Rural	Surface treated	Class 4	2900	6.4	18560	2022-04-30	82	375	$ 1,087,500.00	2	4	2015	30	8	2033 to 2039	2045
46450	Washburn Road	1.00km East of Factory Rd	East End of Road	Local	Rural	Surface treated	Class 4	3150	6.3	19845	2022-04-30	70	270	$ 850,500.00	2	3	2015	30	6	2040 to 2046	2045
42070	Ernie Road	West End of Road	Lower Round Lake Road	Local	Rural	Surface treated	Class 6	400	5.5	2200	2022-04-30	73	270	$ 108,000.00	2	3	2015	30	6	2040 to 2046	2045
44260	McFadden Road	Wilmer Road	Norway Road	Local	Rural	Surface treated	Class 4	1850	6.7	12395	2022-04-30	74	270	$ 499,500.00	2	3	2015	30	6	2040 to 2046	2045
40375	Bear Creek Road	Battersea Road	East End of Road	Local	Rural	Surface treated	Class 4	2700	5.8	15660	2022-04-30	75	270	$ 729,000.00	2	3	2015	30	6	2040 to 2046	2045
41755	Davidson Road	Perth Road 10	Holmes Road	Local	Rural	Surface treated	Class 4	500	6	3000	2022-04-30	75	270	$ 135,000.00	2	3	2015	30	6	2040 to 2046	2045
43165	Holmes Road	Perth Road 10	Lakefield Drive	Local	Rural	Surface treated	Class 4	1400	6.3	8820	2022-04-30	75	270	$ 378,000.00	2	3	2015	30	6	2040 to 2046	2045
46525	Wellington Street	Milburn Road	East End of Road	Local	Rural	Surface treated	Class 4	1700	6.5	11050	2022-04-30	75	270	$ 459,000.00	2	3	2015	30	6	2040 to 2046	2045
43255	Ida Hill Road	Sunbury Road	Milburn Road	Local	Rural	Surface treated	Class 4	1900	6.8	12920	2022-04-30	77	270	$ 513,000.00	2	3	2015	30	6	2040 to 2046	2045
46435	Washburn Road	Factory Road	1.00km East of Factory R	Local	Rural	Surface treated	Class 4	1000	6.3	6300	2022-04-30	77	270	$ 270,000.00	2	3	2015	30	6	2040 to 2046	2045
42355	Freeman Road	Bedford Road	Sills Bay Road	Local	Rural	Surface treated	Class 4	800	6.2	4960	2022-04-30	78	270	$ 216,000.00	2	3	2015	30	6	2040 to 2046	2045
43150	Holmes Road	Old Boy Road	Perth Road 10	Local	Rural	Surface treated	Class 4	1200	6.4	7680	2022-04-30	79	270	$ 324,000.00	2	3	2015	30	6	2040 to 2046	2045
46345	Vienna Crescent	Sumac Road	North End of Road	Local	Rural	Surface treated	Class 4	350	6.4	2240	2022-04-30	79	270	$ 94,500.00	2	3	2015	30	6	2040 to 2046	2045
41260	Charlie Green Road	Little Long Lake Road	Norway Road	Local	Rural	Surface treated	Class 4	2200	6	13200	2022-04-30	80	270	$ 594,000.00	2	3	2015	30	6	2040 to 2046	2045
43390	Keeley Road	Park Valley Road	Rutledge Road	Local	Rural	Surface treated	Class 4	2200	6.4	14080	2022-04-30	80	270	$ 594,000.00	2	3	2015	30	6	2040 to 2046	2045
42685	Greenfield Road	Perth Road 10	0.77km East of Perth Ro	Local	Rural	Surface treated	Class 4	770	6.5	5005	2022-04-30	81	270	$ 207,900.00	2	3	2015	30	6	2040 to 2046	2045
45820	Sills Bay Road	Botting Road	North End of Road	Local	Rural	Surface treated	Class 4	1700	6.2	10540	2022-04-30	81	270	$ 459,000.00	2	3	2015	30	6	2040 to 2046	2045
41365	Clearwater Road	Bedford Road	Botting Road	Local	Rural	Surface treated	Class 5	500	5.1	2550	2022-04-30	81	270	$ 135,000.00	2	3	2015	30	6	2040 to 2046	2045
40489	Bob's Lake Road	Green Bay Road	Bradshaw Road	Local	Rural	Surface treated	Class 4	4200	5	21000	2022-04-30	82	270	$ 1,134,000.00	2	3	2015	30	6	2040 to 2046	2045
45880	Snider Road	2.00km South of Arena Bo	Road 38	Local	Rural	Surface treated	Class 4	3000	6.2	18600	2022-04-30	82	270	$ 810,000.00	2	3	2015	30	6	2040 to 2046	2045
46075	Sumac Road	Sydenham Road	East End of Road	Local	Rural	Surface treated	Class 4	1150	6.9	7935	2022-04-30	82	270	$ 310,500.00	2	3	2015	30	6	2040 to 2046	2045
45250	Railton Road	0.55km East of Stage Coa	Sydenham Road	Local	Rural	Surface treated	Class 4	1200	6.7	8040	2022-04-30	83	270	$ 324,000.00	2	3	2015	30	6	2040 to 2046	2045
44685	Norway Road	Charlie Green Road	McFadden Road	Local	Rural	Surface treated	Class 4	350	5.2	1820	2022-04-30	84	270	$ 94,500.00	2	3	2015	30	6	2040 to 2046	2045
45865	Snider Road	Arena Boundary Road	2.00km South of Arena B	Local	Rural	Surface treated	Class 4	2000	6.2	12400	2022-04-30	84	270	$ 540,000.00	2	3	2015	30	6	2040 to 2046	2045
42880	Hinchinbrooke Road	0.29km North of Trousda	0.99km North of Trousda	Local	Rural	Surface treated	Class 5	700	6.7	4690	2022-04-30	84	270	$ 189,000.00	2	3	2015	30	6	2040 to 2046	2045
45235	Railton Road	Stage Coach Road	0.55km East of Stage Co	Collector	Rural	Surface treated	Class 4	550	6.4	3520	2022-04-30	92	375	$ 206,250.00	1	4	2015	30	4	2040 to 2046	2045
43480	Kingsmere Lane	Railton Road	North End of Road	Local	Rural	Surface treated	Class 5	700	6.1	4270	2022-04-30	87	270	$ 189,000.00	1	3	2015	30	3	2047 to 2052	2045
41635	Daley Road	Railton Road	0.60km North of Railton	Local	Rural	Surface treated	Class 4	600	6	3600	2022-04-30	90	270	$ 162,000.00	1	3	2015	30	3	2047 to 2052	2045
46765	Wurtz Crescent	Vienna Crescent	0.05km North of Vienna	Local	Rural	Surface treated	Class 6	50	7.3	365	2022-04-30	92	270	$ 13,500.00	1	3	2015	30	3	2047 to 2052	2045
41650	Daley Road	0.60km North of Railton R	North End of Road	Local	Rural	Surface treated	Class 4	500	6	3000	2022-04-30	93	270	$ 135,000.00	1	3	2015	30	3	2047 to 2052	2045
50875	Battersea Road	4.5km North of Burnt Hill	East End of Road	Arterial	Rural	Surface treated	Class 5	6100	6.7	40870	2022-04-30	62	450	$ 2,745,000.00	3	5	2016	30	15	2028 to 2032	2046
51460	Bedford Road	Busch Lane	Salmon Lake Road	Arterial	Rural	Surface treated	Class 4	2400	6.7	16080	2022-04-30	75	450	$ 1,080,000.00	2	5	2016	30	10	2028 to 2032	2046
51575	Bedford Road	Salmon Lake Road	1.0km North of Salmon L	Arterial	Rural	Surface treated	Class 4	1000	6.4	6400	2022-04-30	77	450	$ 450,000.00	2	5	2016	30	10	2028 to 2032	2046
52725	Desert Lake Road	0.15km East of High Falls	Bauder Drive	Arterial	Rural	Surface treated	Class 5	1550	6.7	10385	2022-04-30	79	450	$ 697,500.00	2	5	2016	30	10	2028 to 2032	2046
52840	Desert Lake Road	Bauder Drive	Deyos Road	Arterial	Rural	Surface treated	Class 5	2200	6.7	14740	2022-04-30	83	450	$ 990,000.00	2	5	2016	30	10	2028 to 2032	2046
41905	Devil Lake Road	Centreville Road	Westport Road	Local	Rural	Surface treated	Class 6	1650	6.7	11055	2022-04-30	65	270	$ 445,500.00	3	3	2016	30	9	2033 to 2039	2046
43300	Jamieson Road	Road 38	1.30km East of Road 38	Local	Rural	Surface treated	Class 4	1300	5.6	7280	2022-04-30	66	270	$ 351,000.00	3	3	2016	30	9	2033 to 2039	2046
42940	Hitchcock Drive	West End of Road	Sunbury Road	Local	Rural	Surface treated	Class 4	850	6.1	5185	2022-04-30	68	270	$ 229,500.00	3	3	2016	30	9	2033 to 2039	2046
41230	Centreville Road	Devil Lake Road	0.40km East of Devil Lak	Local	Rural	Surface treated	Class 4	400	6	2400	2022-04-30	70	270	$ 108,000.00	2	3	2016	30	6	2040 to 2046	2046
40810	Burnt Hills Road	Battersea Road	1.2km East of Battersea	Local	Rural	Surface treated	Class 4	1200	5.8	6960	2022-04-30	71	270	$ 324,000.00	2	3	2016	30	6	2040 to 2046	2046
40870	Burnt Hills Road	0.61km West of Carrying	0.49km East of Rideau R	Local	Rural	Surface treated	Class 4	1700	5.3	9010	2022-04-30	71	270	$ 459,000.00	2	3	2016	30	6	2040 to 2046	2046
41125	Canoe Lake Road	Westport Road	3.0km South of Westpor	Local	Rural	Surface treated	Class 4	3000	6	18000	2022-04-30	71	270	$ 810,000.00	2	3	2016	30	6	2040 to 2046	2046
46060	Stone Point Road	North End of Road	Hitchcock Drive	Local	Rural	Surface treated	Class 6	1150	6.7	7705	2022-04-30	75	270	$ 310,500.00	2	3	2016	30	6	2040 to 2046	2046
42325	Freeman Road	1.05km West of Gould Lal	Gould Lake Road	Local	Rural	Surface treated	Class 5	1150	6.2	7130	2022-04-30	76	270	$ 310,500.00	2	3	2016	30	6	2040 to 2046	2046
40825	Burnt Hills Road	1.2km East of Battersea R	1.4km East of Battersea	Local	Rural	Surface treated	Class 4	200	6.5	1300	2022-04-30	79	270	$ 54,000.00	2	3	2016	30	6	2040 to 2046	2046
40855	Burnt Hills Road	5.0km East of Battersea R	0.61km West of Carrying	Local	Rural	Surface treated	Class 4	1000	5.8	5800	2022-04-30	80	270	$ 270,000.00	2	3	2016	30	6	2040 to 2046	2046
41245	Centreville Road	0.40km East of Devil Lake	0.80km East of Devil Lak	Local	Rural	Surface treated	Class 4	400	6	2400	2022-04-30	81	270	$ 108,000.00	2	3	2016	30	6	2040 to 2046	2046
46555	White Lake Road	West End of Road	Buck Bay Road	Local	Rural	Surface treated	Class 4	1100	6.7	7370	2022-04-30	83	270	$ 297,000.00	2	3	2016	30	6	2040 to 2046	2046
44110	Maple Hill Way	South End of Road	Hitchcock Drive	Local	Rural	Surface treated	Class 6	300	6.5	1950	2022-04-30	83	270	$ 81,000.00	2	3	2016	30	6	2040 to 2046	2046
40360	Bauder Road	Desert Lake Road	East End of Road	Local	Rural	Surface treated	Class 4	1200	4.2	5040	2022-04-30	84	270	$ 324,000.00	2	3	2016	30	6	2040 to 2046	2046
40840	Burnt Hills Road	1.4km East of Battersea R	1.8km East of Battersea	Local	Rural	Surface treated	Class 4	400	6.2	2480	2022-04-30	85	270	$ 108,000.00	1	3	2016	30	3	2047 to 2052	2046
42145	First Lake Road	Bellrock Mill Street	0.70km North of Bellrock	Local	Rural	Surface treated	Class 4	700	5.2	3640	2022-04-30	86	270	$ 189,000.00	1	3	2016	30	3	2047 to 2052	2046
42475	German Road	Long Swamp Road	0.20km South of Long Sv	Local	Rural	Surface treated	Class 4	200	5.3	1060	2022-04-30	90	270	$ 54,000.00	1	3	1997	30	3	2047 to 2052	2047
45805	Short Street	Bank Street	North End of Road	Local	Rural	Surface treated	Class 5	50	4.7	235	2022-04-30	91	270	$ 13,500.00	1	3	1997	30	3	2047 to 2052	2047
42895	Hinchinbrooke Road	0.99km North of Trousda	Moore Farm Lane	Local	Rural	Surface treated	Class 5	1400	6.4	8960	2022-04-30	93	270	$ 378,000.00	1	3	2021	30	3	2047 to 2052	2047
57785	Westport Road	Buck Bay Road	New Road	Arterial	Rural	Surface treated	Class 4	7700	6.6	50820	2022-04-30	62	450	$ 3,465,000.00	3	5	2018	30	15	2028 to 2032	2048
44800	Opinicon Road	Perth Road 10	4.40km East of Perth Ro	Local	Rural	Surface treated	Class 5	4400	6.5	28600	2022-04-30	73	270	$ 1,188,000.00	2	3	2018	30	6	2040 to 2046	2048
44815	Opinicon Road	4.40km East of Perth Roa	7.70km East of Perth Ro	Local	Rural	Surface treated	Class 5	3300	6.5	21450	2022-04-30	76	270	$ 891,000.00	2	3	2018	30	6	2040 to 2046	2048
44830	Opinicon Road	7.70km East of Perth Roa	Post Office Gate Lane	Local	Rural	Surface treated	Class 5	3950	6.5	25675	2022-04-30	76	270	$ 1,066,500.00	2	3	2018	30	6	2040 to 2046	2048
44860	Opinicon Road	1.70km East of Post Offic	4.65km East of Post Offi	Local	Rural	Surface treated	Class 5	2950	6.5	19175	2022-04-30	80	270	$ 796,500.00	2	3	2018	30	6	2040 to 2046	2048
44845	Opinicon Road	Post Office Gate Lane	1.70km East of Post Offi	Local	Rural	Surface treated	Class 5	1700	6.5	11050	2022-04-30	83	270	$ 459,000.00	2	3	2018	30	6	2040 to 2046	2048
40720	Buck Bay Road	0.3km North of Westport	White Lake Road	Local	Rural	Surface treated	Class 4	1700	5.7	9690	2022-04-30	88	270	$ 459,000.00	1	3	2018	30	3	2047 to 2052	2048
53185	Desert Lake Road	1.90km West of Bedford I	1.70km West of Bedford	Arterial	Rural	Surface treated	Class 5	200	6.2	1240	2022-04-30	80	450	$ 90,000.00	2	5	2019	30	10	2028 to 2032	2049
45580	Round Lake Road	3.50km East of Latimer Rd	4.10km East of Latimer R	Local	Rural	Surface treated	Class 4	600	6.3	3780	2022-04-30	81	270	$ 162,000.00	2	3	2019	30	6	2040 to 2046	2049
40075	Amey Road	West End of Road	Murvale Road	Local	Rural	Surface treated	Class 4	950	4.2	3990	2022-04-30	84	270	$ 256,500.00	2	3	2019	30	6	2040 to 2046	2049
45745	Scanlan Court	Scanlan Road	North End of Road	Local	Rural	Surface treated	Class 6	200	6.1	1220	2022-04-30	85	270	$ 54,000.00	1	3	2019	30	3	2047 to 2052	2049
41155	Carrying Place Road	South End of Road	1.0km South of Burnt Hi	Local	Rural	Surface treated	Class 4	4800	6	28800	2022-04-30	87	270	$ 1,296,000.00	1	3	2019	30	3	2047 to 2052	2049
46480	Watson Road	Petworth Road	Boyce Road	Local	Rural	Surface treated	Class 4	1400	6.4	8960	2022-04-30	88	270	$ 378,000.00	1	3	2019	30	3	2047 to 2052	2049
45760	Scanlan Road	West End of Road	0.50km West of Murvale	Local	Rural	Surface treated	Class 5	950	6.5	6175	2022-04-30	90	270	$ 256,500.00	1	3	2019	30	3	2047 to 2052	2049
45775	Scanlan Road	0.50km West of Murvale	Murvale Road	Local	Rural	Surface treated	Class 5	500	6	3000	2022-04-30	90	270	$ 135,000.00	1	3	2019	30	3	2047 to 2052	2049
45565	Round Lake Road	2.20km East of Latimer Rd	3.50km East of Latimer R	Local	Rural	Surface treated	Class 4	1300	6.1	7930	2022-04-30	93	270	$ 351,000.00	1	3	2019	30	3	2047 to 2052	2049

ID	Street	From	To	Classification	Roadside Environment	Surface Type	Maintenace Class	Length (m)	Width (m)	Pavement Area (m2)	Last Inspection Date	Inspection OCI	Cost $/m assumed	Replacement Value Estimate	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Install / Last Reconstruct Date	Useful Life	Risk	Timing of First Replacement (based on Risk)	Timing of First Replacement (based on Risk)
44650	North Shore Road	North Shore Crescent	Hewlett Packard Road	Local	Rural	Surface treated	Class 4	5800	6.3	36540	2022-04-30	67	270	$ 1,566,000.00	3	3	2020	30	9	2033 to 2039	2050
40735	Buck Bay Road	White Lake Road	2.6km North of White La	Local	Rural	Surface treated	Class 4	2650	6.7	17755	2022-04-30	73	270	$ 715,500.00	2	3	2020	30	6	2040 to 2046	2050
46030	Steele Road	South End of Road	Bradshaw Road	Local	Rural	Surface treated	Class 4	2200	5	11000	2022-04-30	80	270	$ 594,000.00	2	3	2020	30	6	2040 to 2046	2050
40750	Buck Bay Road	2.6km North of White Lak	Bob's Lake Road	Local	Rural	Surface treated	Class 4	3800	5.5	20900	2022-04-30	87	270	$ 1,026,000.00	1	3	2020	30	3	2047 to 2052	2050
41935	Deyos Road	Morey Lane	James Wilson Road	Local	Rural	Surface treated	Class 4	2500	4.5	11250	2022-04-30	73	270	$ 675,000.00	2	3	2021	30	6	2040 to 2046	2051
40765	Bunker Hill Road	Westport Road	James Wilson Road	Local	Rural	Surface treated	Class 4	2600	5	13000	2022-04-30	76	270	$ 702,000.00	2	3	2021	30	6	2040 to 2046	2051
41950	Deyos Road	Desert Lake Road	Morey Lane	Local	Rural	Surface treated	Class 4	1100	4	4400	2022-04-30	87	270	$ 297,000.00	1	3	2021	30	3	2047 to 2052	2051
41170	Carrying Place Road	1.0km South of Burnt Hills	Burnt Hills Road	Local	Rural	Surface treated	Class 4	1050	6	6300	2022-04-30	90	270	$ 283,500.00	1	3	2021	30	3	2047 to 2052	2051
42910	Hinchinbrooke Road	Moore Farm Lane	Desert Lake Road	Local	Rural	Surface treated	Class 5	4400	6.2	27280	2022-04-30	94	270	$ 1,188,000.00	1	3	2021	30	3	2047 to 2052	2051
58245	Westport Road	0.76km West of Bresee R	Bresee Road	Arterial	Rural	Surface treated	Class 4	1200	6.6	7920	2022-04-30	100	450	$ 540,000.00	1	5	2022	30	5	2040 to 2046	2052
58360	Westport Road	Bresee Road	Concession 12	Arterial	Rural	Surface treated	Class 4	1400	6.6	9240	2022-04-30	100	450	$ 630,000.00	1	5	2022	30	5	2040 to 2046	2052
58475	Westport Road	Concession 12	Devil Lake Road	Arterial	Rural	Surface treated	Class 4	1350	6.6	8910	2022-04-30	100	450	$ 607,500.00	1	5	2022	30	5	2040 to 2046	2052
44020	Lower Round Lake Road	Round Lake Road	Ernie Road	Local	Rural	Surface treated	Class 4	2100	6.6	13860	2022-04-30	100	270	$ 567,000.00	1	3	2022	30	3	2047 to 2052	2052
44035	Lower Round Lake Road	Ernie Road	East End of Road	Local	Rural	Surface treated	Class 4	1450	6.2	8990	2022-04-30	100	270	$ 391,500.00	1	3	2022	30	3	2047 to 2052	2052
														$ 266,467,700.00							

Bridges & Culverts (OSIM)

Site No.	Name	Bridge/ Culvert	Type	Road Class	Posted Speed	Year Constructed/ Rehabilitated	AGE (2022)	# of Spans	Total Length (m)	Width / Span (m)	Road Width (m)	Existing Surface Area (m2)	Historical Cost ($)	Replacement Cost ($000)	BCI	Health & Safety Risk	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement- Based on Risk	Timing of First Replacement (based on life cycle)	Timing of First Replacement (based on risk)	Timing of Second Replacement (life cycle)
63280	Fish Creek Bridge (B30)	Bridge	T-Beam	Local	80	1927	95	1	6.7	5.2	4.4	35	7,357	1,550,000	8.1		0%	5	4	1927	75	20	2024 to 2027		2023	2098
63360	Shales Road Culvert (B41)	Bridge	Frame, Inclined Legs	Local	80	1955	67	1	3.0	5.5	4.7	17	7,563	450,000	31.9		11%	5	4	1955	75	20	2024 to 2027		2025	2100
63290	Eagle Creek Culvert (B31)	Bridge	Rigid Frame, Vertical Legs	Local	80	1945	77	1	3.9	5.4	4.6	21	11,080	982,000	38.5		0%	4	4	1945	75	16	2024 to 2027		2025	2100
63460	Buck Bay Rd Bridge (N of White Lake) (B52)	Bridge	Rigid Frame, Vertical Legs	Local	80	2008	14	1	3.8	4.5	5.0	17	38,840	850,000	52.4		81%	3	4	2008	75	12	2028 to 2032		2030	2105
63350	Long Swamp Rd Bridge Closed (B39)	Bridge	I-beam or Girders	Local	80	1940	82	1	11.9	4.6	4.0	55	16,655	665,000	0.1		0%	5	4	1940	75	20	2024 to 2027		2031	2106
63370	Railton Road Bridge (B42)	Bridge	Rigid Frame, Vertical Legs	Local	50	1928	94	1	6.1	5.4	4.9	30	7,370	850,000	28.7		0%	5	4	1928	75	20	2024 to 2027		2033	2108
63210	Bedford Mills Road Culvert (B23)	Bridge	Rigid Frame, Vertical Legs	Local	80	1940	82	1	3.6	8.0	4.5	29	16,857	350,000	46.2		0%	3	4	1940	75	12	2028 to 2032		2035	2110
63270	Buck Bay Bridge (Green Bay Rd) (B29)	Bridge	Rigid Frame, Vertical Legs	Local	80	1965	57	1	6.7	9.1	4.5	61	21,164	645,000	70.2		24%	2	4	1965	75	8	based on life cycle	2076	2040	2115
63080	Sydenham Lake Bridge and Dam (B08)	Bridge	Rectangle Culvert	Collector	50	1978	44	2	8.0	12.2	6.8	98	157,069	1,115,000	71.2		41%	2	4	1978	75	8	based on life cycle	2076	2053	
63010	Battersea Bridge (B01)	Bridge	Rigid Frame, Vertical Legs	Arterial	50	1979	43	1	8.2	11.2	8.6	92	148,430	1,050,000	72.2		43%	2	5	1979	75	10	2028 to 2032		2054	
63330	First Lake Road Bridge (B37)	Bridge	Rigid Frame, Vertical Legs	Local	80	1995	27	1	8.3	10.0	6.4	83	279,066	950,000	74.6		64%	2	4	1995	75	8	based on life cycle	2070	2070	
63190	Bedford Mills Bridge (B21)	Bridge	T-Beam	Arterial	80	1997	25	1	19.1	9.9	8.8	189	117,766	2,125,000	67.5		67%	2	5	1997	75	10	2028 to 2032		2072	
63440	Opinicon Lake Bridge (B50)	Bridge	I-beam or Girders	Local	80	2001	21	1	12.0	5.7	5.3	68	8,578	850,000	28.4		72%	5	4	2001	75	20	2024 to 2027		2076	
63200	Sunbury Road Canal Overpass (B22) 50/50	Bridge	I-beam or Girders	Arterial	80	2005	17	3	74.7	11.7	9.0	874	1,132,096	5,000,000	73.7		77%	2	5	2005	75	10	2028 to 2032		2080	
63400	Mitchell Creek Bridge (B45)	Bridge	Earth Filled Arch	Local	10	2007	15	1	9.8	5.1	5.1	50	526,798	900,000	74.3		80%	2	4	2007	75	8	based on life cycle	2082	2082	
63070	Rutledge Road Bridge (B07)	Bridge	Rigid Frame, Vertical Legs	Collector	50	2008	14	1	6.3	14.2	13.3	89	251,377	980,000	65.0		81%	2	4	2008	75	8	based on life cycle	2083	2083	
63300	12th Concession Bridge (B32)	Bridge	Rigid Frame, Vertical Legs	Local	80	2009	13	1	4.0	6.4	5.6	26	115,000	350,000	75.0		83%	1	4	2009	75	4	based on life cycle	2084	2084	
63020	Loughborough Lake Bridge (B02)	Bridge	I-beam or Girders	Arterial	80	2010	12	3	43.6	12.5	9.9	545	1,500,000	6,280,000	74.6		84%	2	5	2010	75	10	2028 to 2032		2085	
63550	Maynard Structure (B48)	Bridge	I-beam or Girders	Local	80	2012	10	1	24.6	7.5	7.5	185	354,213	2,550,000	69.0		87%	2	4	2012	75	8	based on life cycle	2087	2087	
63380	Church Street Culvert (B43)	Bridge	Rigid Frame, Vertical Legs	Local	50	2013	9	1	6.0	8.0	7.6	48	11,130	275,000	29.4		88%	5	4	2013	75	20	2024 to 2027		2088	
63561	Petworth Bridge (B40)	Bridge	Through Truss	Arterial	80	2013	9	1	23.3	4.2	4.4	98	21,482	1,225,000	73.2		88%	2	5	2013	75	10	2028 to 2032		2088	
63540	Road 38 (Hardwood Creek Verona) Bridge	Bridge	I-beam or Girders	Arterial	60	2013	9	1	12.2	15.4	13.1	188	103,487	2,145,000	68.3		88%	2	5	2013	75	10	2028 to 2032		2088	
63160	High Falls Bridge Desert Lk Rd (B18)	Bridge	Rectangular Culvert	Collector	80	2014	8	2	10.5	9.0	5.2	95	876,000	1,100,000	75.0		89%	1	4	2014	75	4	based on life cycle	2089	2089	
63250	Buck Bay Road Bridge, N of Wesport Rd (B27)	Bridge	Rigid Frame, Vertical Legs	Local	80	2022	0	1	7.1	7.2	7.0	51	706,171	707,000	100.0		100%	1	4	2022	75	4	based on life cycle	2097	2097	
														$ 33,944,000												
63060	Burego Lane Culvert (B06)	Culvert	Round Culvert (Twin)	Local	80	1993	29	2	9.3	3.8	3.8	35	69678	78,000	0.3		42%	5	3	1993	50	15	2028 to 2032		2023	2073
63120	Bracken Culvert (B13)	Culvert	Arch Culvert	Arterial	80	1966	56	1	21.0	4.4	6.9	92	81215	527,200	38.1		25%	4	4	1966	75	16	2024 to 2027		2024	2099
63110	Murvale Creek Culvert (B12)	Culvert	Arch Culvert	Arterial	80	1993	29	1	29.6	3.7	7.1	108	139100	796,860	60.3		42%	2	4	1993	50	8	based on life cycle	2053	2025	2075
63130	Culvert Under Road 38 (B14)	Culvert	Rectangular Culvert	Arterial	80	1965	57	1	22.2	4.2	7.1	93	71606	480,000	68.8		24%	2	4	1965	75	8	based on life cycle	2075	2025	2100
63040	Buck Lake Culvert (B04)	Culvert	Round Culvert	Arterial	80	1970	52	1	17.2	3.2	7.0	55	43572	1,035,000	53.1		0%	3	4	1970	50	12	2028 to 2032		2026	2076
63510	Clair Road Culvert (B36)	Culvert	Rigid Frame, Vertical Legs	Local	80	1965	57	1	3.5	4.8	4.1	17	11195	230,000	25.5		0%	5	3	1965	50	15	2028 to 2032		2027	2077
63180	Devil Lake Culvert (B20)	Culvert	Round Culvert	Collector	60	1965	57	1	24.8	3.6	7.0	89	63754	1,092,500	54.7		0%	3	3	1965	50	9	based on life cycle	2050	2028	2078
63170	Road 38 Bridge (B19)	Culvert	Rigid Frame, Vertical Legs	Arterial	80	1996	26	1	28.1	3.7	11.0	104	60609	862,500	69.7		48%	2	4	1996	50	8	based on life cycle	2058	2029	2079
63340	Craig Creek Culvert (B38)	Culvert	Arch Culvert	Local	80	1998	24	1	22.0	4.7	5.3	103	191194	805,000	65.8		52%	2	3	1998	50	6	based on life cycle	2048	2031	2081
64003	Anderson Rd Culvert (03-CULV)	Culvert	Rigid Frame, Vertical Legs	Local	80	1962	60	1	3.0	6.0	5.4	18	11661	180,000	69.1		0%	2	3	1962	50	6	based on life cycle	2058	2034	2084
63410	Milburn Creek Culvert (B46)	Culvert	Arch Culvert	Local	80	1980	42	1	19.5	5.5	6.5	107	236337	435,000	75.0		16%	1	3	1980	50	3	based on life cycle	2061	2035	2085
63310	Colebrook Road Culvert (B33)	Culvert	Arch Culvert	Local	50	1980	42	1	19.9	3.7	7.3	74	94579	350,000	63.8		16%	2	3	1980	50	6	based on life cycle	2055	2045	2095
63320	Watson Road Culvert (B34)	Culvert	Arch Culvert	Local	80	1981	41	1	11.2	3.6	6.0	40	99885	180,000	63.8		18%	2	3	1981	50	6	based on life cycle	2055	2045	2095
63050	Sydenham Road Culvert Bridge (B05)	Culvert	Rigid Frame, Vertical Legs	Local	80	1980	42	1	22.2	4.3	4.3	95	192631	522,004	73.8		44%	2	3	1980	75	6	based on life cycle	2078	2055	
63140	Depot Creek Culvert (B16)	Culvert	Rectangular Culvert	Collector	80	1980	42	1	27.5	6.1	10.6	168	295812	950,000	72.1		44%	2	3	1980	75	6	based on life cycle	2077	2055	
63150	Bellrock Rd. Culvert (B17)	Culvert	Rectangular Culvert	Collector	80	1980	42	1	20.3	3.0	8.0	61	107360	440,000	74.1		44%	2	3	1980	75	6	based on life cycle	2079	2055	
63220	Massassauga Road Culvert (B24)	Culvert	Rigid Frame, Vertical Legs	Local	80	2015	7	1	12.0	4.5	4.5	54	239000	160,000	92.1		86%	1	3	2015	50	3	based on life cycle	2065	2065	2115
63390	Salmon Lake Rd Culvert / Otter Lake (B44)	Culvert	Round Culvert	Collector	80	2016	6	1	25.2	3.6	9.0	91	350000	525,000	88.7		88%	1	3	2016	50	3	based on life cycle	2066	2066	2116
63090	Little Long Lake Culvert (B10)	Culvert	Rigid Frame, Vertical Legs	Local	60	1992	30	1	4.8	15.4	7.5	74	44904	365,650	41.3		60%	4	3	1992	75	12	2028 to 2032		2067	
	Desert Lake Causeway (14-CULV)	Culvert	Arch Culverts (3)	Collector	60	2019	3	3	18.0	3.6	6.0	65	0	635,000	98.9		94%	1	3	2019	50	3	based on life cycle	2069	2069	2119
63560	Petworth Road Culvert (B35)	Culvert	Round Culvert (Twin)	Local	80	2020	2	2	22.2	3.6	6.5	80	0	450,000	98.9		96%	1	3	2020	50	3	based on life cycle	2070	2070	2120
														$ 11,099,714												

$ 45,043,714

Water Treatment and Storage Facilities

Type	Asset Description	Construction Year	Useful Life	Historical Construction Cost	2022 Replacement Cost*	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life (yrs)	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement (based on life cycle)	Timing of First Replacement	Timing of Second Replacement (Life Cycle)	Timing of Third Replacement (Life Cycle)	Tming of Fourth Replacement (Life Cycle)
WTP	Raw Water Intake (400mm)	2005	100	$227,000.00	$ 375,196.41	83%	1	5	2005	100	5	based on life cycle	2105	2105			
Storage	Elevated Water Storage Tower	2005	100	$996,000.00	$ 1,646,236.25	83%	1	4	2005	100	4	based on life cycle	2105	2105			
WTP	Treatment Plant	2005	50	$2,971,176.00	$ 4,910,901.22	66%	2	5	2005	50	10	2028 to 2032		2055	2105		
WTP	Plant Upgrades (UV & GAC contactors)	2010	25	$1,009,881.00	$ 1,439,848.83	52%	3	5	2010	25	15	2028 to 2032		2035	2060	2085	2110
TOTAL				$5,204,057.00	$8,372,182.71												

Water Main

Asset ID	Street Name	Intersection 1	Intersection 2	DIAMETER (mm)	LENGTH (m)	QUANTITY	UNIT PRICE ($)	CONST YEAR	USEFUL LIFE (YRS)	HISTORIC COST	2022 Replacement Cost (inflation accounted)	*Replacement Cost ($/unit)	2022 Replacement Cost	REMAINING LIFE (YRS)	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement-Based on life cycle	Timing of First Replacement
Water Main																							
95001	Point Rd	Wheatley	Water Plant	250	279.1		200	2005	90	$ 55,816.00	$ 92,255.34	491.73	$ 137,231.21	73	81%	1	5	2005	90	5	based on life cycle	2095	2095
95002	Wheatley St	George	Point	250	17.2		200	2005	90	$ 3,444.00	$ 5,692.41	491.73	$ 8,467.54	73	81%	1	5	2005	90	5	based on life cycle	2095	2095
95003	Wheatley St	Cross	Point	250	88.7		200	2005	90	$ 17,736.00	$ 29,314.91	491.73	$ 43,606.36	73	81%	1	5	2005	90	5	based on life cycle	2095	2095
95004	Wheatley St	Rutledge	Cross	250	265.0		200	2005	90	$ 53,002.00	$ 87,604.23	491.73	$ 130,312.61	73	81%	1	5	2005	90	5	based on life cycle	2095	2095
95005	Wheatley St	Rutledge	Cross	250	14.3		200	2005	90	$ 2,868.00	$ 4,740.37	491.73	$ 7,051.37	73	81%	1	5	2005	90	5	based on life cycle	2095	2095
95006	Rutledge Rd	Mill	Wheatley	250	154.6		200	2005	90	$ 30,914.00	$ 51,096.13	491.73	$ 76,006.27	73	81%	1	5	2005	90	5	based on life cycle	2095	2095
95007	Rutledge Rd	Mill	Wheatley	250	8.6		200	2005	90	$ 1,724.00	$ 2,849.51	491.73	$ 4,238.69	73	81%	1	5	2005	90	5	based on life cycle	2095	2095
95008	Stage Coach Rd	Rutledge	Water Tower	250	438.2		200	2005	90	$ 87,648.00	$ 144,868.79	491.73	$ 215,494.51	73	81%	1	5	2005	90	5	based on life cycle	2095	2095
95009	Water Tower Site	Stage Coach	Water Tower	250	5.1		200	2005	90	$ 1,018.00	$ 1,682.60	491.73	$ 2,502.89	73	81%	1	5	2005	90	5	based on life cycle	2095	2095
95010	Water Tower Site	Stage Coach	Water Tower	250	50.5		200	2005	90	$ 10,108.00	$ 16,706.98	491.73	$ 24,851.89	73	81%	1	5	2005	90	5	based on life cycle	2095	2095
95011	Stage Coach Rd	Water Tower Site	Campbell	200	124.0		190	2005	90	$ 23,561.90	$ 38,944.23	437.09	$ 54,203.63	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95012	Stage Coach Rd	Water Tower Site	Campbell	200	4.6		190	2005	90	$ 879.70	$ 1,454.01	437.09	$ 2,023.73	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95013	Morgan Dr	Rutledge	South End	200	199.9		190	2011	90	$ 37,979.10	$ 52,571.96	437.09	$ 87,370.08	79	88%	1	4	2011	90	4	based on life cycle	2101	2101
95014	Morgan Dr	Rutledge	South End	200	223.9		190	2011	90	$ 42,531.50	$ 58,873.54	437.09	$ 97,842.78	79	88%	1	4	2011	90	4	based on life cycle	2101	2101
95015	Morgan Dr	Rutledge	South End	200	2.0		190	2011	90	$ 378.10	$ 523.38	437.09	$ 869.81	79	88%	1	4	2011	90	4	based on life cycle	2101	2101
95016	Rutledge Rd	William	West End	200	226.6		190	2005	90	$ 43,055.90	$ 71,164.84	437.09	$ 99,049.15	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95017	Rutledge Rd	William	Morgan	200	64.6		190	2005	90	$ 12,272.10	$ 20,283.91	437.09	$ 28,231.69	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95018	Rutledge Rd	William	Morgan	200	3.5		190	2005	90	$ 666.90	$ 1,102.28	437.09	$ 1,534.19	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95019	Rutledge Rd	Morgan	Stage Coach	200	225.7		190	2005	90	$ 42,883.00	$ 70,879.07	437.09	$ 98,651.39	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95020	Rutledge Rd	Morgan	Stage Coach	200	7.4		190	2005	90	$ 1,396.50	$ 2,308.20	437.09	$ 3,212.62	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95021	William St	Rutledge	Church	200	11.7		190	2005	90	$ 2,221.10	$ 3,671.14	437.09	$ 5,109.59	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95022	William St	Rutledge	Church	200	40.6		190	2005	90	$ 7,721.60	$ 12,762.63	437.09	$ 17,763.37	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95023	William St	Rutledge	Church	200	12.5		190	2005	90	$ 2,380.70	$ 3,934.93	437.09	$ 5,476.75	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95024	Church St	William	Walker	200	360.5		190	2005	90	$ 68,489.30	$ 113,202.38	437.09	$ 157,558.12	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95025	Church St	William	Walker	200	12.2		190	2005	90	$ 2,316.10	$ 3,828.16	437.09	$ 5,328.14	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95026	Walker Rd	Rock Quarry Ln	Church	200	343.1		190	2005	90	$ 65,181.40	$ 107,734.92	437.09	$ 149,948.37	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95027	Portland Ave	Church	George	200	870.6		190	2005	90	$ 165,415.90	$ 273,407.28	437.09	$ 380,535.62	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95028	Portland Ave	Church	George	200	11.7		190	2005	90	$ 2,217.30	$ 3,664.86	437.09	$ 5,100.85	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95029	Portland Ave	Church	George	200	64.8		190	2005	90	$ 12,317.70	$ 20,359.28	437.09	$ 28,336.60	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95030	George St	Church	Brewery	200	25.4		190	2005	90	$ 4,827.90	$ 7,979.78	437.09	$ 11,106.48	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95031	George St	Brewery	Amelia	200	241.8		190	2005	90	$ 45,942.00	$ 75,935.13	437.09	$ 105,688.56	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95032	George St	Amelia	Mill	200	138.8		190	2005	90	$ 26,373.90	$ 43,592.04	437.09	$ 60,672.57	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95033	George St	Amelia	Mill	200	28.3		190	2005	90	$ 5,367.50	$ 8,871.66	437.09	$ 12,347.82	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95034	George St	Mill	Wheatley	200	136.0		190	2005	90	$ 25,830.50	$ 42,693.88	437.09	$ 59,422.49	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95035	George St	Wheatley	Portland	200	159.4		190	2005	90	$ 30,276.50	$ 50,042.44	437.09	$ 69,650.42	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95036	George St	Wheatley	Portland	200	36.9		190	2005	90	$ 7,016.70	$ 11,597.54	437.09	$ 16,141.76	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95037	George St	Wheatley	Portland	200	68.3		190	2005	90	$ 12,971.30	$ 21,439.58	437.09	$ 29,840.19	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95038	Bedford Rd	Portland	East End	200	447.5		190	2005	90	$ 85,023.10	$ 140,530.23	437.09	$ 195,593.76	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95039	Brewery Street	George	Amelia	200	161.8		190	2005	90	$ 30,749.60	$ 50,824.40	437.09	$ 70,738.78	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95040	Brewery Street	Amelia	Mill	200	94.5		190	2005	90	$ 17,956.90	$ 29,680.02	437.09	$ 41,309.45	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95041	Brewery Street	Amelia	Mill	200	8.1		190	2005	90	$ 1,539.00	$ 2,543.73	437.09	$ 3,540.44	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95045	Mill St	Rutledge	Brewery	200	14.8		190	2005	90	$ 2,817.70	$ 4,657.23	437.09	$ 6,482.06	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95046	Mill St	Rutledge	Brewery	200	92.9		190	2005	90	$ 17,647.20	$ 29,168.13	437.09	$ 40,596.99	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95047	Mill St	Brewery	Cross	200	165.4		190	2005	90	$ 31,427.90	$ 51,945.53	437.09	$ 72,299.19	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95048	Mill St	Cross	George	200	154.3		190	2005	90	$ 29,324.60	$ 48,469.10	437.09	$ 67,460.59	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95052	Rutledge Rd	Wheatley	Sailors Cove Ln	200	78.5		190	2005	90	$ 14,905.50	$ 24,636.52	437.09	$ 34,289.77	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95053	Rutledge Rd	Wheatley	Sailors Cove Ln	200	455.5		190	2005	90	$ 86,545.00	$ 143,045.70	437.09	$ 199,094.86	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95054	Wheatley St	Point	George	200	4.5		190	2005	90	$ 847.40	$ 1,400.62	437.09	$ 1,949.42	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95055	Wheatley St	Point	George	200	151.2		190	2005	90	$ 28,729.90	$ 47,486.15	437.09	$ 66,092.50	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95056	Wheatley St	Point	George	200	16.9		190	2005	90	$ 3,211.00	$ 5,307.29	437.09	$ 7,386.83	73	81%	1	4	2005	90	4	based on life cycle	2095	2095
95042	Amelia St	Brewery	George	150	8.0		180	2005	90	$ 1,441.80	$ 2,383.08	327.82	$ 2,625.82	73	81%	1	3	2005	90	3	based on life cycle	2095	2095
95043	Amelia St	Brewery	George	150	194.5		180	2005	90	$ 35,011.80	$ 57,869.17	327.82	$ 63,763.90	73	81%	1	3	2005	90	3	based on life cycle	2095	2095
95044	Amelia St	Brewery	George	150	5.4		180	2005	90	$ 979.20	$ 1,618.47	327.82	$ 1,783.33	73	81%	1	3	2005	90	3	based on life cycle	2095	2095
95049	Cross St	Mill	Wheatley	150	4.9		180	2005	90	$ 889.20	$ 1,469.71	327.82	$ 1,619.42	73	81%	1	3	2005	90	3	based on life cycle	2095	2095
95050	Cross St	Mill	Wheatley	150	124.1		180	2005	90	$ 22,339.80	$ 36,924.29	327.82	$ 40,685.50	73	81%	1	3	2005	90	3	based on life cycle	2095	2095
95051	Cross St	Mill	Wheatley	150	4.6		180	2005	90	$ 819.00	$ 1,353.68	327.82	$ 1,491.57	73	81%	1	3	2005	90	3	based on life cycle	2095	2095
Valves (Mainline Only)																							
97004	Rutledge	Stage-Coach	Rutledge	250		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4917.27	$ 4,917.27	33	66%	2	4	2005	50	8	based on life cycle	2055	2055
97030	Wheatley	Cross	Wheatley	250		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4917.27	$ 4,917.27	33	66%	2	4	2005	50	8	based on life cycle	2055	2055
97031	Wheatley	Rutledge	Wheatley	250		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4917.27	$ 4,917.27	33	66%	2	4	2005	50	8	based on life cycle	2055	2055
97032	Wheatley	Point	Wheatley	250		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4917.27	$ 4,917.27	33	66%	2	4	2005	50	8	based on life cycle	2055	2055
97036	Water Tower	Stage-Coach	Water Tower	250		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4917.27	$ 4,917.27	33	66%	2	4	2005	50	8	based on life cycle	2055	2055
97000	Rutledge	William	Rutledge	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97001	Rutledge	Morgan	Rutledge	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97002	Rutledge	Morgan	Rutledge	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97003	Rutledge	Stage-Coach	Rutledge	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97005	Rutledge	Wheatley	Rutledge	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97006	Portland	Church	Portland	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97007	Portland	Bedford	Portland	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97008	William	Rutlege	William	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97009	William	Church	William	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97010	Church	William	Church	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97011	Church	Portland	Church	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97012	William	Brewery	William	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97013	William	Brewery	William	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97014	William	Amelia	William	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97016	William	Mill	William	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97017	George	Mill	George	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97018	George	Wheatley	George	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97019	George	Bridge	George	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97020	George	Bridge	George	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97021	Bedford	Portland	Bedford	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97022	Brewery	Mill	Brewery	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97023	Brewery	Amelia	Brewery	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97025	Mill	Rutledge	Mill	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97026	Mill	Brewery	Mill	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97028	Mill	Cross	Mill	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97033	Wheatley	Point	Wheatley	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97034	Wheatley	George	Wheatley	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97035	Stage-Coach	Water Tower	Stage-Coach	200		1	3000	2005	50	$ 3,000.00	$ 4,958.54	4370.91	$ 4,370.91	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97037	Morgan Dr	Rutledge	Morgan	200		1	3000	2011	50	$ 3,000.00	$ 4,152.70	4370.91	$ 4,370.91	39	78%	2	3	2011	50	6	based on life cycle	2061	2061
97038	Morgan	Morgan	Halfway	200		1	3000	2011	50	$ 3,000.00	$ 4,152.70	4370.91	$ 4,370.91	39	78%	2	3	2011	50	6	based on life cycle	2061	2061

Asset ID	Street Name	Intersection 1	Intersection 2	DIAMETER (mm)	LENGTH (m)	QUANTITY	UNIT PRICE ($)	CONST YEAR	USEFUL LIFE (YRS)	HISTORIC COST	2022 Replacement Cost (inflation accounted)	*Replacement Cost ($/unit)	2022 Replacement Cost	REMAINING LIFE (YRS)	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement-Based on life cycle	Timing of First Replacement
97039	Morgan	Morgan	South End	200		1	3000	2011	50	$ 3,000.00	$ 4,152.70	4370.91	$ 4,370.91	39	78%	2	3	2011	50	6	based on life cycle	2061	2061
97241 (S41)	Morgan Drive	Morgan	Rutledge	150		1	3000	2011	50	$ 3,000.00	$ 4,152.70	3824.54	$ 3,824.54	39	78%	2	3	2011	50	6	based on life cycle	2061	2061
97242 (S42)	Morgan Drive	Morgan	Halfway	150		1	3000	2011	50	$ 3,000.00	$ 4,152.70	3824.54	$ 3,824.54	39	78%	2	3	2011	50	6	based on life cycle	2061	2061
97243 (S43)	Morgan Drive	Morgan	Southend	150		1	3000	2011	50	$ 3,000.00	$ 4,152.70	3824.54	$ 3,824.54	39	78%	2	3	2011	50	6	based on life cycle	2061	2061
97015	Amelia	William	Amelia	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97024	Amelia	Brewery	Amelia	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97027	Cross	Mill	Cross	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97029	Cross	Wheatley	Cross	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97201 (S1)	Point Rd	Point Road	Halfway	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97202 (S2)	Point Rd	Wheatley	Point	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97203 (S3)	Wheatley St	Cross	Wheatley	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97204 (S4)	Wheatley St	Wheatley	Halfway	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97205 (S5)	Rutledge Rd	Wheatley	Rutledge	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97206 (S6)	Rutledge Rd	Rutledge	Halfway	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97207 (S7)	Rutledge Rd	Rutledge	East End	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97208 (S8)	Rutledge Rd	Wheatley	Rutledge	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97209 (S9)	Stage Coach Rd	Rutledge	Stage-Coach	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97210 (S10)	Stage Coach Rd	Stage-Coach	Halfway	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97211 (S11)	Stage Coach Rd	Water Tower	Stage-Coach	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97212 (S12)	Stage Coach Rd	Stage-Coach	South End	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97213 (S13)	Rutledge Rd	Stage-Coach	Rutledge	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97214 (S14)	George St	George	Wheatley	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97215 (S15)	George St	Bridge	Wheatley	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97216 (S16)	George St	Portland	Bedford	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97217 (S17)	Bedford Rd	Bedford	Halfway	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97218 (S18)	Bedford Rd	Bedford	North End	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97220 (S20)	Portland Ave	Bedford	Portland	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97221 (S21)	Portland Ave	West	97220	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97222 (S22)	Portland Ave	West	97221	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97223 (S23)	Portland Ave	West	97222	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97224 (S24)	Portland Ave	East	97225	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97225 (S25)	Portland Ave	Church	Portland	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97226 (S26)	Sydenham Walker Rd	Church	Walker	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97227 (S27)	Sydenham Walker Rd	Walker	West End	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97228 (S28)	Sydenham Church St	Portland	Church	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97229 (S29)	Sydenham Church St	William	Church	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97230 (S30)	Sydenham Church St	Rutledge	William	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97231 (S31)	Sydenham William St	William	Brewery	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97232 (S32)	Sydenham William St	Brewery	William	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97233 (S33)	Sydenham William St	Amelia	William	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97234 (S34)	George St	Mill	George	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97235 (S35)	Sydenham Mill St	Cross	Mill	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97236 (S36)	Sydenham Mill St	Brewery	Mill	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97237 (S37)	Brewery St	Amelia	Brewery	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97238 (S38)	Amelia St	Brewery	Amelia	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97239 (S39)	Rutledge Rd	Morgan	Rutledge	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97240 (S40)	Rutledge Rd	Rutledge	West End	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
97244 (S44)	Rutledge Rd	Stage-Coach	Rutledge	150		1	3000	2005	50	$ 3,000.00	$ 4,958.54	3824.54	$ 3,824.54	33	66%	2	3	2005	50	6	based on life cycle	2055	2055
Services (CS)																							
98030	Rutledge Road			150		1	2000	2005	50	$ 2,000.00	$ 3,305.70	5734.16	$ 5,734.16	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98134	Sydenham William Street			100		1	2000	2005	50	$ 2,000.00	$ 3,305.70	1914.92	$ 1,914.92	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98067	Sydenham Walker Street			38		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,917.27	$ 4,917.27	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98267	Morgan Dr			38		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 4,917.27	$ 4,917.27	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98008	Rutledge Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98031	Rutledge Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98032	Rutledge Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98033	Rutledge Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98039	Rutledge Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98041	Rutledge Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98043	Rutledge Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98044	Rutledge Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98046	Rutledge Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98048	Rutledge Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98057	Sydenham Church Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98059	Sydenham Church Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98066	Sydenham Walker Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98068	Sydenham Walker Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98069	Sydenham Walker Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98070	Morgan Dr			25		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 4,370.91	$ 4,370.91	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98071	Morgan Dr			25		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 4,370.91	$ 4,370.91	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98072	Morgan Dr			25		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 4,370.91	$ 4,370.91	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98073	Morgan Dr			25		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 4,370.91	$ 4,370.91	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98074	Morgan Dr			25		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 4,370.91	$ 4,370.91	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98075	Stage Coach Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98076	Stage Coach Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98077	Stage Coach Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98078	Stage Coach Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98079	Stage Coach Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98080	Stage Coach Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98081	Stage Coach Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98091	Stage Coach Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98095	Stage Coach Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98102	Portland Avenue			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98122	Bedford Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98143	George Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98152	George Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98223	Sydenham Mill Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98227	Sydenham Cross Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98231	Wheatley Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98251	Sydenham Willaim St			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98253	George Street			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98261	Bedford Road			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98264	Portland Avenue			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98267	Portland Avenue			25		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 4,370.91	$ 4,370.91	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98000	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055

Asset ID	Street Name	Intersection 1	Intersection 2	DIAMETER (mm)	LENGTH (m)	QUANTITY	UNIT PRICE ($)	CONST YEAR	USEFUL LIFE (YRS)	HISTORIC COST	2022 Replacement Cost (inflation accounted)	*Replacement Cost ($/unit)	2022 Replacement Cost	REMAINING LIFE (YRS)	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement-Based on life cycle	Timing of First Replacement
98001	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98002	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98003	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98004	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98005	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98006	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98007	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98009	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98010	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98011	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98012	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98013	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98014	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98015	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98016	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98017	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98018	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98019	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98020	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98021	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98022	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98023	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98024	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98025	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98026	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98027	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98028	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98029	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98034	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98035	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98036	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98037	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98038	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98040	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98042	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98045	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98047	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98049	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98050	Rutledge Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98051	Sydenham Church Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98052	Sydenham Church Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98053	Sydenham Church Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98054	Sydenham Church Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98055	Sydenham Church Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98056	Sydenham Church Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98058	Sydenham Church Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98060	Sydenham Church Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98061	Sydenham Walker Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98062	Sydenham Walker Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98063	Sydenham Walker Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98064	Sydenham Walker Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98065	Sydenham Walker Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98082	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98083	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98084	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98085	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98086	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98087	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98088	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98089	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98090	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98092	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98093	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98094	Stage Coach Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98096	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98097	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98098	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98099	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98100	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98101	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98103	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98104	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98105	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98106	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98107	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98108	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98109	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98110	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98111	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98112	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98113	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98114	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98115	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98116	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98117	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98118	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98119	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98120	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98121	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98123	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98124	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98125	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98126	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98127	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98128	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98129	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98130	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98131	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98132	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98133	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055

Asset ID	Street Name	Intersection 1	Intersection 2	DIAMETER (mm)	LENGTH (m)	QUANTITY	UNIT PRICE ($)	CONST YEAR	USEFUL LIFE (YRS)	HISTORIC COST	2022 Replacement Cost (inflation accounted)	*Replacement Cost ($/unit)	2022 Replacement Cost	REMAINING LIFE (YRS)	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement-Based on life cycle	Timing of First Replacement
98135	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98136	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98137	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98138	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98139	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98140	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98141	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98142	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98144	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98145	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98146	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98147	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98148	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98149	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98150	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98151	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98153	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98154	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98155	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98156	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98157	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98158	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98159	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98160	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98161	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98162	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98163	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98164	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98165	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98166	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98167	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98168	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98169	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98170	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98171	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98172	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98173	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98174	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98175	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98176	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98177	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98178	Brewery Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98179	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98180	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98181	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98182	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98183	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98184	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98185	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98186	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98187	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98188	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98189	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98190	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98191	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98192	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98193	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98194	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98195	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98196	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98197	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98198	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98199	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98200	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98201	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98202	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98203	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98204	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98205	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98206	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98207	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98208	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98209	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98210	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98211	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98212	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98213	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98214	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98215	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98216	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98217	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98218	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98219	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98220	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98221	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98222	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98224	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98225	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98226	Sydenham Cross Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98228	Sydenham Cross Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98229	Sydenham Cross Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98230	Sydenham Cross Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98232	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98233	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98234	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98235	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98236	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98237	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98238	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98239	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055

Asset ID	Street Name	Intersection 1	Intersection 2	DIAMETER (mm)	LENGTH (m)	QUANTITY	UNIT PRICE ($)	CONST YEAR	USEFUL LIFE (YRS)	HISTORIC COST	2022 Replacement Cost (inflation accounted)	*Replacement Cost ($/unit)	2022 Replacement Cost	REMAINING LIFE (YRS)	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement-Based on life cycle	Timing of First Replacement
98240	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98241	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98242	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98243	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98244	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98245	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98246	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98247	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98248	Point Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98249	Point Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98250	Point Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98252	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98254	Wheatley Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98255	Point Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98256	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98257	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98258	Amelia Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98259	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98260	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98262	Sydenham Church Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98263	Sydenham Church Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98265	Portland Avenue			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98266	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98268	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98269	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98270	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98271	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98272	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98273	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98274	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98275	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98276	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98277	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98278	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98279	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98280	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98281	Morgan Dr			19		1	2000	2011	50	$ 2,000.00	$ 2,768.47	$ 3,278.18	$ 3,278.18	39	78%	2	1	2011	50	2	based on life cycle	2061	2061
98282	Bedford Road			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98283	Sydenham Mill Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98284	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98285	Sydenham William Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
98286	George Street			19		1	2000	2005	50	$ 2,000.00	$ 3,305.70	$ 3,278.18	$ 3,278.18	33	66%	2	1	2005	50	2	based on life cycle	2055	2055
Hydrants [ID(tag)]																							
96001 (1)	Point Rd	Point Road	Halfway			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96002 (2)	Wheatley St	Wheatley	Point			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96003 (3)	Wheatley St	Cross	Wheatley			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96004 (4)	Wheatley St	Wheatley	Halfway			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96005 (5)	Rutledge Rd	Wheatley	Rutledge			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96006 (6)	Rutledge Rd	Rutledge	Halfway			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96007 (7)	Rutledge Rd	Rutledge	East End			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96008 (8)	Rutledge Rd	Wheatley	Rutledge			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96009 (9)	Stage Coach Rd	Rutledge	Stage-Coach			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96010 (10)	Stage Coach Rd	Stage-Coach	Halfway			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96011 (11)	Stage Coach Rd	Water Tower	Stage-Coach			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96012 (12)	Stage Coach Rd	Stage-Coach	South End			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96013 (13)	Rutledge Rd	Stage-Coach	Rutledge			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96014 (14)	George St	George	Wheatley			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96015 (15)	George St	Bridge	Wheatley			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96016 (16)	George St	Portland	Bedford			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96017 (17)	Bedford Rd	Bedford	Halfway			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96018 (18)	Bedford Rd	Bedford	North End			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96020 (20)	Portland Ave	Bedford	Portland			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96021 (21)	Portland Ave	Church	Bedford			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96022 (22)	Portland Ave	Church	Bedford			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96023 (23)	Portland Ave	Church	Bedford			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96024 (24)	Portland Ave	Church	Bedford			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96025 (25)	Portland Ave	Church	Portland			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96026 (26)	Sydenham Walker Rd	Church	Walker			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96027 (27)	Sydenham Walker Rd	Walker	West End			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96028 (28)	Sydenham Church St	Portland	Church			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96029 (29)	Sydenham Church St	William	Church			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96030 (30)	Sydenham Church St	Rutledge	William			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96031 (31)	Sydenham William St	William	Brewery			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96032 (32)	Sydenham William St	Brewery	William			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96033 (33)	Sydenham William St	Amelia	William			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96034 (34)	George St	Mill	George			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96035 (35)	Sydenham Mill St	Cross	Mill			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96036 (36)	Sydenham Mill St	Brewery	Mill			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96037 (37)	Brewery St	Amelia	Brewery			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96038 (38)	Amelia St	Brewery	Amelia			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96039 (39)	Rutledge Rd	Morgan	Rutledge			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96040 (40)	Rutledge Rd	Rutledge	West End			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
96041 (41)	Morgan Dr	Morgan	Rutledge			1	5000	2011	60	$ 5,000.00	$ 6,921.17	$ 8,195.45	$ 8,195.45	50	83%	1	4	2011	60	4	based on life cycle	2071	2071
96042 (42)	Morgan Dr	Morgan	Halfway			1	5000	2011	60	$ 5,000.00	$ 6,921.17	$ 8,195.45	$ 8,195.45	50	83%	1	4	2011	60	4	based on life cycle	2071	2071
96043 (43)	Morgan Dr	Morgan	Southend			1	5000	2011	60	$ 5,000.00	$ 6,921.17	$ 8,195.45	$ 8,195.45	50	83%	1	4	2011	60	4	based on life cycle	2071	2071
96044 (44)	Rutledge Rd	Stage-Coach	Rutledge			1	5000	2005	60	$ 5,000.00	$ 8,264.24	$ 8,195.45	$ 8,195.45	44	73%	2	4	2005	60	8	based on life cycle	2065	2065
Summary													$ 4,847,115.69										

Storm Sewers

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
PIPES																					
93504		Hartington- Road 38	Hartington	CSP	750	14.3	1973			$337.00	$690.00	$ 9,867	2%	5	4	1973	50	20	2024 to 2028	2023	2073
93509		Hartington- Road 38	Hartington	CSP	750	13.9	1973			$337.00	$690.00	$ 9,591	2%	5	4	1973	50	20	2024 to 2028	2023	2073
93510		Hartington- Road 38	Hartington	CSP	450	8.5	1973			$312.00	$450.00	$ 3,825	2%	5	3	1973	50	15	2029 to 2033	2023	2073
93511		Hartington- Road 38	Hartington	CSP	450	15.0	1973			$312.00	$450.00	$ 6,750	2%	5	3	1973	50	15	2029 to 2033	2023	2073
93512		Hartington- Road 38	Hartington	CSP	450	22.3	1973			$312.00	$450.00	$ 10,035	2%	5	3	1973	50	15	2029 to 2033	2023	2073
93513		Hartington- Road 38	Hartington	CSP	450	17.9	1973			$312.00	$450.00	$ 8,055	2%	5	3	1973	50	15	2029 to 2033	2023	2073
93524		Hartington- Boyce Road	Hartington	CSP	450	10.0	1973			$312.00	$450.00	$ 4,500	2%	5	3	1973	50	15	2029 to 2033	2023	2073
93501		Hartington- Boyce Road	Hartington	CSP	525	12.1	1973			$328.00	$470.00	$ 5,687	2%	5	3	1973	50	15	2029 to 2033	2023	2073
93500		Hartington- Boyce Road	Hartington	CSP	600	34.1	1973			$332.00	$530.00	$ 18,073	2%	5	3	1973	50	15	2029 to 2033	2023	2073
93502		Hartington- Boyce Road	Hartington	CSP	600	46.5	1973			$332.00	$530.00	$ 24,645	2%	5	3	1973	50	15	2029 to 2033	2023	2073
93503		Hartington- Boyce Road	Hartington	CSP	600	24.8	1973			$332.00	$530.00	$ 13,144	2%	5	3	1973	50	15	2029 to 2033	2023	2073
93506		Hartington- Road 38	Hartington	CSP	300	26.0	1973			$291.00	$350.00	$ 9,100	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93507		Hartington- Road 38	Hartington	CSP	300	31.5	1973			$291.00	$350.00	$ 11,025	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93517		Hartington- Holleford Rd	Hartington	CSP	375	11.9	1973			$295.00	$420.00	$ 4,998	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93518		Hartington- Holleford Rd	Hartington	CSP	375	24.4	1973			$295.00	$420.00	$ 10,248	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93519		Hartington- Holleford Rd	Hartington	CSP	375	3.1	1973			$295.00	$420.00	$ 1,302	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93520		Hartington- Holleford Rd	Hartington	CSP	375	91.0	1973			$295.00	$420.00	$ 38,220	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93521		Hartington- Holleford Rd	Hartington	CSP	375	42.8	1973			$295.00	$420.00	$ 17,976	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93522		Hartington- Holleford Rd	Hartington	CSP	375	8.2	1973			$295.00	$420.00	$ 3,444	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93523		Hartington- Holleford Rd	Hartington	CSP	375	14.5	1973			$295.00	$420.00	$ 6,090	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93525		Hartington- Boyce Road	Hartington	CSP	375	26.3	1973			$295.00	$420.00	$ 11,046	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93526		Hartington- Boyce Road	Hartington	CSP	375	12.3	1973			$295.00	$420.00	$ 5,166	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93527		Hartington- Boyce Road	Hartington	CSP	375	23.1	1973			$295.00	$420.00	$ 9,702	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93528		Hartington- Boyce Road	Hartington	CSP	375	11.2	1973			$295.00	$420.00	$ 4,704	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93529		Hartington- Boyce Road	Hartington	CSP	375	17.0	1973			$295.00	$420.00	$ 7,140	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93530		Hartington- Boyce Road	Hartington	CSP	375	47.7	1973			$295.00	$420.00	$ 20,017	2%	5	2	1973	50	10	2029 to 2033	2023	2073
93248		Verona- Road 38	Verona	CSP	300	8.5	1975			$291.00	$350.00	$ 2,975	6%	5	2	1975	50	10	2029 to 2033	2025	2075
93736		Harrowsmith- Kingston Rd	Harrowsmith	CSP	750	39.7	1985			$337.00	$690.00	$ 27,393	26%	4	4	1985	50	16	2024 to 2028	2035	2085
93732		Harrowsmith- Notre Dame St	Harrowsmith	CSP	450	25.4	1985			$312.00	$450.00	$ 11,430	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93733		Harrowsmith- Notre Dame St	Harrowsmith	CSP	450	1.1	1985			$312.00	$450.00	$ 495	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93734		Harrowsmith- Notre Dame St	Harrowsmith	CSP	450	30.2	1985			$312.00	$450.00	$ 13,590	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93735		Harrowsmith- Maria St	Harrowsmith	CSP	450	8.0	1985			$312.00	$450.00	$ 3,600	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93737		Harrowsmith-Rutledge Rd	Harrowsmith	CSP	450	8.6	1985			$312.00	$450.00	$ 3,870	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93738		Harrowsmith-Rutledge Rd	Harrowsmith	CSP	450	104.0	1985			$312.00	$450.00	$ 46,800	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93740		Harrowsmith- Notre Dame St	Harrowsmith	CSP	450	10.9	1985			$312.00	$450.00	$ 4,905	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93741		Harrowsmith- William St	Harrowsmith	CSP	450	54.4	1985			$312.00	$450.00	$ 24,480	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93742		Harrowsmith- William St	Harrowsmith	CSP	450	7.8	1985			$312.00	$450.00	$ 3,510	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93702		Harrowsmith- Kingston Rd	Harrowsmith	CSP	500	6.2	1985			$328.00	$470.00	$ 2,914	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93739		Harrowsmith-Rutledge Rd	Harrowsmith	CSP	600	7.4	1985			$332.00	$530.00	$ 3,922	26%	4	3	1985	50	12	2029 to 2033	2035	2085
93701		Harrowsmith- Kingston Rd	Harrowsmith	CSP	300	11.1	1985			$291.00	$350.00	$ 3,885	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93712		Road 38	Harrowsmith	CSP	300	13.1	1985			$291.00	$350.00	$ 4,585	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93714		Road38	Harrowsmith	CSP	300	12.8	1985			$291.00	$350.00	$ 4,480	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93716		Road38	Harrowsmith	CSP	300	12.8	1985			$291.00	$350.00	$ 4,480	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93718		Road38	Harrowsmith	CSP	300	13.6	1985			$291.00	$350.00	$ 4,760	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93725		Harrowsmith- Colebrook Rd	Harrowsmith	CSP	300	17.2	1985			$291.00	$350.00	$ 6,020	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93703		Harrowsmith- Kingston Rd	Harrowsmith	CSP	350	17.5	1985			$295.00	$420.00	$ 7,350	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93723		Harrowsmith- Colebrook Rd	Harrowsmith	CSP	400	24.0	1985			$312.00	$450.00	$ 10,800	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93724		Harrowsmith- Colebrook Rd	Harrowsmith	CSP	400	9.2	1985			$312.00	$450.00	$ 4,140	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93727		Harrowsmith- Colebrook Rd	Harrowsmith	CSP	400	40.8	1985			$312.00	$450.00	$ 18,360	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93728		Harrowsmith- Notre Dame St	Harrowsmith	CSP	400	3.0	1985			$312.00	$450.00	$ 1,350	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93729		Harrowsmith- Notre Dame St	Harrowsmith	CSP	400	93.9	1985			$312.00	$450.00	$ 42,255	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93730		Harrowsmith- Notre Dame St	Harrowsmith	CSP	400	1.4	1985			$312.00	$450.00	$ 630	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93731		Harrowsmith- Notre Dame St	Harrowsmith	CSP	400	10.2	1985			$312.00	$450.00	$ 4,590	26%	4	2	1985	50	8	2034 to 2057	2035	2085
93726		Harrowsmith- Colebrook Rd	Harrowsmith	CSP	200	2.3	1985			$291.00	$320.00	$ 736	26%	4	1	1985	50	4	2058 to 2080	2035	2085
93719		Road38	Harrowsmith	CSP	250	9.0	1985			$291.00	$350.00	$ 3,150	26%	4	1	1985	50	4	2058 to 2080	2035	2085
93974		Sydenham- Wheatley St	Sydenham	CSP	450	109.7	1986			$312.00	$450.00	$ 49,365	28%	4	3	1986	50	12	2029 to 2033	2036	2086
93976		Sydenham- Wheatley St	Sydenham	CSP	450	78.7	1986			$312.00	$450.00	$ 35,415	28%	4	3	1986	50	12	2029 to 2033	2036	2086
93978		Sydenham- Wheatley St	Sydenham	CSP	450	85.2	1986			$312.00	$450.00	$ 38,340	28%	4	3	1986	50	12	2029 to 2033	2036	2086
93980		Sydenham- Wheatley St	Sydenham	CSP	450	61.2	1986			$312.00	$450.00	$ 27,540	28%	4	3	1986	50	12	2029 to 2033	2036	2086
93997		Sydenham- Point Rd	Sydenham	CSP	450	67.4	1986			$312.00	$450.00	$ 30,330	28%	4	3	1986	50	12	2029 to 2033	2036	2086
93998		Sydenham- Point Rd	Sydenham	CSP	450	55.7	1986			$312.00	$450.00	$ 25,065	28%	4	3	1986	50	12	2029 to 2033	2036	2086
94001		Sydenham- George St	Sydenham	CSP	450	17.2	1986			$312.00	$450.00	$ 7,740	28%	4	3	1986	50	12	2029 to 2033	2036	2086
93942		Sydenham- Sydenham William St	Sydenham	CSP	450	7.2	1986			$312.00	$450.00	$ 3,240	28%	4	3	1986	50	12	2029 to 2033	2036	2086
93966		Sydenham- Sydenham Mill St	Sydenham	CSP	450	33.9	1986			$312.00	$450.00	$ 15,255	28%	4	3	1986	50	12	2029 to 2033	2036	2086
93982		Sydenham- Wheatley St	Sydenham	CSP	450	52.7	1986			$312.00	$450.00	$ 23,715	28%	4	3	1986	50	12	2029 to 2033	2036	2086
93916		Sydenham- Stage Coach Rd	Sydenham	CSP	300	7.5	1986			$291.00	$350.00	$ 2,625	28%	4	2	1986	50	8	2034 to 2057	2036	2086
93973		Sydenham- Wheatley St	Sydenham	CSP	300	3.3	1986			$291.00	$350.00	$ 1,155	28%	4	2	1986	50	8	2034 to 2057	2036	2086
93975		Sydenham- Wheatley St	Sydenham	CSP	300	8.2	1986			$291.00	$350.00	$ 2,870	28%	4	2	1986	50	8	2034 to 2057	2036	2086
93979		Sydenham- Wheatley St	Sydenham	CSP	300	8.4	1986			$291.00	$350.00	$ 2,940	28%	4	2	1986	50	8	2034 to 2057	2036	2086
93981		Sydenham- Wheatley St	Sydenham	CSP	300	7.8	1986			$291.00	$350.00	$ 2,730	28%	4	2	1986	50	8	2034 to 2057	2036	2086
93987		Sydenham- Wheatley St	Sydenham	CSP	300	5.5	1986			$291.00	$350.00	$ 1,925	28%	4	2	1986	50	8	2034 to 2057	2036	2086

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
94002		Sydenham- George St	Sydenham	CSP	300	7.6	1986			$291.00	$350.00	$ 2,660	28%	4	2	1986	50	8	2034 to 2057	2036	2086
94409		Inverary- Perth Rd 10	Inverary	CSP	500	95.4	1993			$328.00	$470.00	$ 44,838	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94410		Inverary- Perth Rd 10	Inverary	CSP	500	40.0	1993			$328.00	$470.00	$ 18,800	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94411		Inverary- Perth Rd 10	Inverary	CSP	500	6.9	1993			$328.00	$470.00	$ 3,243	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94412		Inverary- Perth Rd 10	Inverary	CSP	500	22.5	1993			$328.00	$470.00	$ 10,575	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94400		Inverary- Perth Rd 10	Inverary	CSP	600	27.4	1993			$332.00	$530.00	$ 14,522	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94401		Inverary- Perth Rd 10	Inverary	CSP	600	8.3	1993			$332.00	$530.00	$ 4,399	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94402		Inverary- Perth Rd 10	Inverary	CSP	600	85.7	1993			$332.00	$530.00	$ 45,421	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94403		Inverary- Perth Rd 10	Inverary	CSP	600	8.7	1993			$332.00	$530.00	$ 4,611	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94404		Inverary- Perth Rd 10	Inverary	CSP	600	90.3	1993			$332.00	$530.00	$ 47,859	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94405		Inverary- Perth Rd 10	Inverary	CSP	600	8.2	1993			$332.00	$530.00	$ 4,346	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94406		Inverary- Perth Rd 10	Inverary	CSP	600	57.1	1993			$332.00	$530.00	$ 30,263	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94407		Inverary- Perth Rd 10	Inverary	CSP	600	8.0	1993			$332.00	$530.00	$ 4,240	42%	3	3	1993	50	9	2034 to 2057	2043	2093
94408		Inverary- Perth Rd 10	Inverary	CSP	600	7.1	1993			$332.00	$530.00	$ 3,763	42%	3	3	1993	50	9	2034 to 2057	2043	2093
93505		Hartington- Road 38	Hartington	Concrete	450	83.6	1973			$312.00	$450.00	$ 37,620	39%	3	3	1973	80	9	2034 to 2057	2053	
93514		Hartington- Road 38	Hartington	Concrete	450	36.0	1973			$312.00	$450.00	$ 16,200	39%	3	3	1973	80	9	2034 to 2057	2053	
93516		Hartington- Holleford Rd	Hartington	HDPE	300	9.5	1973			$291.00	$350.00	$ 3,325	39%	3	2	1973	80	6	2058 to 2080	2053	
93515		Hartington- Road 38	Hartington	Concrete	250	15.3	1973			$291.00	$350.00	$ 5,355	39%	3	1	1973	80	3	2081 to 2084	2053	
94819		Battersea- Battersea Rd	Battersea	CSP	500	7.9	2004			$328.00	$470.00	$ 3,713	64%	2	3	2004	50	6	2058 to 2080	2054	2104
94820		Battersea- Battersea Rd	Battersea	CSP	500	20.2	2004			$328.00	$470.00	$ 9,494	64%	2	3	2004	50	6	2058 to 2080	2054	2104
94821		Battersea- Battersea Rd	Battersea	CSP	500	19.7	2004			$328.00	$470.00	$ 9,259	64%	2	3	2004	50	6	2058 to 2080	2054	2104
94802		Battersea- Battersea Rd	Battersea	CSP	500	5.0	2004			$328.00	$470.00	$ 2,350	64%	2	3	2004	50	6	2058 to 2080	2054	2104
94814		Battersea- Battersea Rd	Battersea	CSP	400	24.1	2004			$312.00	$450.00	$ 10,845	64%	2	2	2004	50	4	2058 to 2080	2054	2104
94822		Battersea- Battersea Rd	Battersea	CSP	400	111.7	2004			$312.00	$450.00	$ 50,265	64%	2	2	2004	50	4	2058 to 2080	2054	2104
94804		Battersea- Battersea Rd	Battersea	CSP	400	105.3	2004			$312.00	$450.00	$ 47,385	64%	2	2	2004	50	4	2058 to 2080	2054	2104
94805		Battersea- Battersea Rd	Battersea	CSP	400	9.1	2004			$312.00	$450.00	$ 4,095	64%	2	2	2004	50	4	2058 to 2080	2054	2104
94806		Battersea- Battersea Rd	Battersea	CSP	400	107.3	2004			$312.00	$450.00	$ 48,285	64%	2	2	2004	50	4	2058 to 2080	2054	2104
94815		Battersea- Battersea Rd	Battersea	CSP	400	35.4	2004			$312.00	$450.00	$ 15,930	64%	2	2	2004	50	4	2058 to 2080	2054	2104
94816		Battersea- Battersea Rd	Battersea	CSP	400	8.4	2004			$312.00	$450.00	$ 3,780	64%	2	2	2004	50	4	2058 to 2080	2054	2104
94823		Battersea- Battersea Rd	Battersea	CSP	400	37.0	2004			$312.00	$450.00	$ 16,650	64%	2	2	2004	50	4	2058 to 2080	2054	2104
94824		Battersea- Battersea Rd	Battersea	CSP	400	8.3	2004			$312.00	$450.00	$ 3,735	64%	2	2	2004	50	4	2058 to 2080	2054	2104
93213		Verona- Water St	Verona	HDPE	750	57.8	1975			$337.00	$690.00	$ 39,882	41%	3	4	1975	80	12	2029 to 2033	2055	
93215		Verona- Water St	Verona	HDPE	750	73.5	1975			$337.00	$690.00	$ 50,715	41%	3	4	1975	80	12	2029 to 2033	2055	
93237		Verona- Road 38	Verona	HDPE	750	7.4	1975			$337.00	$690.00	$ 5,106	41%	3	4	1975	80	12	2029 to 2033	2055	
93212		Verona- Water St	Verona	Concrete	900	40.4	1975			$337.00	$870.00	$ 35,148	41%	3	4	1975	80	12	2029 to 2033	2055	
93236		Verona- Road 38	Verona	Concrete	900	44.2	1975			$337.00	$870.00	$ 38,454	41%	3	4	1975	80	12	2029 to 2033	2055	
93234		Verona- Road 38	Verona	HDPE	450	36.0	1975			$312.00	$450.00	$ 16,200	41%	3	3	1975	80	9	2034 to 2057	2055	
93204	55485	Verona- Road 38	Verona	HDPE	525	58.7	1975			$328.00	$470.00	$ 27,589	41%	3	3	1975	80	9	2034 to 2057	2055	
93206	55485	Verona- Road 38	Verona	HDPE	525	100.1	1975			$328.00	$470.00	$ 47,047	41%	3	3	1975	80	9	2034 to 2057	2055	
93216		Verona- Road 38	Verona	HDPE	525	64.8	1975			$328.00	$470.00	$ 30,456	41%	3	3	1975	80	9	2034 to 2057	2055	
93229		Verona- Road 38	Verona	HDPE	525	44.6	1975			$328.00	$470.00	$ 20,962	41%	3	3	1975	80	9	2034 to 2057	2055	
93232		Verona- Road 38	Verona	HDPE	525	79.7	1975			$328.00	$470.00	$ 37,459	41%	3	3	1975	80	9	2034 to 2057	2055	
93239		Verona- Road 38	Verona	HDPE	525	9.0	1975			$328.00	$470.00	$ 4,230	41%	3	3	1975	80	9	2034 to 2057	2055	
93200	55485	Verona- Road 38	Verona	HDPE	600	5.6	1975			$332.00	$530.00	$ 2,968	41%	3	3	1975	80	9	2034 to 2057	2055	
93201	55485	Verona- Road 38	Verona	HDPE	600	41.4	1975			$332.00	$530.00	$ 21,942	41%	3	3	1975	80	9	2034 to 2057	2055	
93224		Verona- Road 38	Verona	HDPE	600	9.7	1975			$332.00	$530.00	$ 5,141	41%	3	3	1975	80	9	2034 to 2057	2055	
93226		Verona- Road 38	Verona	HDPE	600	42.0	1975			$332.00	$530.00	$ 22,260	41%	3	3	1975	80	9	2034 to 2057	2055	
93228		Verona- Road 38	Verona	HDPE	600	43.6	1975			$332.00	$530.00	$ 23,108	41%	3	3	1975	80	9	2034 to 2057	2055	
93238		Verona- Road 38	Verona	HDPE	600	41.0	1975			$332.00	$530.00	$ 21,730	41%	3	3	1975	80	9	2034 to 2057	2055	
93250		Verona- Road 38	Verona	HDPE	600	44.7	1975			$332.00	$530.00	$ 23,691	41%	3	3	1975	80	9	2034 to 2057	2055	
93244		Verona- Road 38	Verona	Concrete	300	5.4	1975			$291.00	$350.00	$ 1,890	41%	3	2	1975	80	6	2058 to 2080	2055	
93252		Verona- Road 38	Verona	Concrete	300	19.4	1975			$291.00	$350.00	$ 6,790	41%	3	2	1975	80	6	2058 to 2080	2055	
93253		Verona- Road 38	Verona	Concrete	300	16.1	1975			$291.00	$350.00	$ 5,635	41%	3	2	1975	80	6	2058 to 2080	2055	
93202	55485	Verona- Road 38	Verona	HDPE	300	12.2	1975			$291.00	$350.00	$ 4,270	41%	3	2	1975	80	6	2058 to 2080	2055	
93203	45700	Verona Sand Rd	Verona	HDPE	300	10.0	1975			$291.00	$350.00	$ 3,500	41%	3	2	1975	80	6	2058 to 2080	2055	
93205	55485	Verona- Road 38	Verona	HDPE	300	8.1	1975			$291.00	$350.00	$ 2,835	41%	3	2	1975	80	6	2058 to 2080	2055	
93207	55485	Verona- Road 38	Verona	HDPE	300	8.2	1975			$291.00	$350.00	$ 2,870	41%	3	2	1975	80	6	2058 to 2080	2055	
93208	46360	Verona- Walker St	Verona	HDPE	300	7.3	1975			$291.00	$350.00	$ 2,555	41%	3	2	1975	80	6	2058 to 2080	2055	
93209	46360	Verona- Walker St	Verona	HDPE	300	7.9	1975			$291.00	$350.00	$ 2,765	41%	3	2	1975	80	6	2058 to 2080	2055	
93211	55485	Verona- Road 38	Verona	HDPE	300	8.1	1975			$291.00	$350.00	$ 2,835	41%	3	2	1975	80	6	2058 to 2080	2055	
93214		Verona- Water St	Verona	HDPE	300	5.9	1975			$291.00	$350.00	$ 2,065	41%	3	2	1975	80	6	2058 to 2080	2055	
93218		Verona- Road 38	Verona	HDPE	300	86.6	1975			$291.00	$350.00	$ 30,310	41%	3	2	1975	80	6	2058 to 2080	2055	
93219		Verona- Road 38	Verona	HDPE	300	3.7	1975			$291.00	$350.00	$ 1,295	41%	3	2	1975	80	6	2058 to 2080	2055	
93220		Verona- Genge St	Verona	HDPE	300	7.5	1975			$291.00	$350.00	$ 2,625	41%	3	2	1975	80	6	2058 to 2080	2055	
93221		Verona- Road 38	Verona	HDPE	300	12.5	1975			$291.00	$350.00	$ 4,375	41%	3	2	1975	80	6	2058 to 2080	2055	
93222		Verona- Bank St	Verona	HDPE	300	8.0	1975			$291.00	$350.00	$ 2,800	41%	3	2	1975	80	6	2058 to 2080	2055	
93223		Verona- Road 38	Verona	HDPE	300	3.9	1975			$291.00	$350.00	$ 1,365	41%	3	2	1975	80	6	2058 to 2080	2055	
93225		Verona- Road 38	Verona	HDPE	300	8.4	1975			$291.00	$350.00	$ 2,940	41%	3	2	1975	80	6	2058 to 2080	2055	
93227		Verona- Road 38	Verona	HDPE	300	8.3	1975			$291.00	$350.00	$ 2,905	41%	3	2	1975	80	6	2058 to 2080	2055	
93230		Verona- Road 38	Verona	HDPE	300	3.0	1975			$291.00	$350.00	$ 1,050	41%	3	2	1975	80	6	2058 to 2080	2055	
93231		Verona- Road 38	Verona	HDPE	300	8.6	1975			$291.00	$350.00	$ 3,010	41%	3	2	1975	80	6	2058 to 2080	2055	
93233		Verona- Road 38	Verona	HDPE	300	8.3	1975			$291.00	$350.00	$ 2,905	41%	3	2	1975	80	6	2058 to 2080	2055	
93235		Verona- Road 38	Verona	HDPE	300	5.6	1975			$291.00	$350.00	$ 1,960	41%	3	2	1975	80	6	2058 to 2080	2055	
93240		Verona- Road 38	Verona	HDPE	300	7.4	1975			$291.00	$350.00	$ 2,590	41%	3	2	1975	80	6	2058 to 2080	2055	

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
93243		Verona- Road 38	Verona	HDPE	300	7.3	1975			$291.00	$350.00	$ 2,555	41%	3	2	1975	80	6	2058 to 2080	2055	
93246		Verona- Road 38	Verona	HDPE	300	3.3	1975			$291.00	$350.00	$ 1,155	41%	3	2	1975	80	6	2058 to 2080	2055	
93247		Verona- Road 38	Verona	HDPE	300	9.2	1975			$291.00	$350.00	$ 3,220	41%	3	2	1975	80	6	2058 to 2080	2055	
93251		Verona- Road 38	Verona	HDPE	300	9.0	1975			$291.00	$350.00	$ 3,150	41%	3	2	1975	80	6	2058 to 2080	2055	
93255		Verona- Road 38	Verona	HDPE	300	8.6	1975			$291.00	$350.00	$ 3,010	41%	3	2	1975	80	6	2058 to 2080	2055	
93256		Verona- Road 38	Verona	HDPE	300	11.9	1975			$291.00	$350.00	$ 4,165	41%	3	2	1975	80	6	2058 to 2080	2055	
93258		Verona- Road 38	Verona	HDPE	300	9.2	1975			$291.00	$350.00	$ 3,220	41%	3	2	1975	80	6	2058 to 2080	2055	
93259		Verona- Road 38	Verona	HDPE	300	6.1	1975			$291.00	$350.00	$ 2,135	41%	3	2	1975	80	6	2058 to 2080	2055	
93261		Verona- Road 38	Verona	HDPE	300	15.7	1975			$291.00	$350.00	$ 5,495	41%	3	2	1975	80	6	2058 to 2080	2055	
93262		Verona- Road 38	Verona	HDPE	300	18.1	1975			$291.00	$350.00	$ 6,335	41%	3	2	1975	80	6	2058 to 2080	2055	
93263		Verona- Road 38	Verona	HDPE	300	8.2	1975			$291.00	$350.00	$ 2,870	41%	3	2	1975	80	6	2058 to 2080	2055	
93264		Verona- Road 38	Verona	HDPE	300	8.1	1975			$291.00	$350.00	$ 2,835	41%	3	2	1975	80	6	2058 to 2080	2055	
93265		Verona- Road 38	Verona	PVC	300	35.6	1975			$291.00	$350.00	$ 12,460	41%	3	2	1975	80	6	2058 to 2080	2055	
93210	55485	Verona- Road 38	Verona	HDPE	375	50.0	1975			$295.00	$420.00	$ 21,000	41%	3	2	1975	80	6	2058 to 2080	2055	
93217		Verona- Road 38	Verona	HDPE	375	8.4	1975			$295.00	$420.00	$ 3,528	41%	3	2	1975	80	6	2058 to 2080	2055	
93241		Verona- Road 38	Verona	HDPE	375	22.8	1975			$295.00	$420.00	$ 9,576	41%	3	2	1975	80	6	2058 to 2080	2055	
93242		Verona- Road 38	Verona	HDPE	375	21.3	1975			$295.00	$420.00	$ 8,946	41%	3	2	1975	80	6	2058 to 2080	2055	
93245		Verona- Road 38	Verona	HDPE	375	45.4	1975			$295.00	$420.00	$ 19,068	41%	3	2	1975	80	6	2058 to 2080	2055	
93254		Verona- Road 38	Verona	HDPE	375	35.8	1975			$295.00	$420.00	$ 15,036	41%	3	2	1975	80	6	2058 to 2080	2055	
93257		Verona- Road 38	Verona	HDPE	375	43.3	1975			$295.00	$420.00	$ 18,186	41%	3	2	1975	80	6	2058 to 2080	2055	
93260		Verona- Road 38	Verona	HDPE	375	40.9	1975			$295.00	$420.00	$ 17,178	41%	3	2	1975	80	6	2058 to 2080	2055	
93249		Verona- Road 38	Verona	PVC	375	10.7	1975			$295.00	$420.00	$ 4,494	41%	3	2	1975	80	6	2058 to 2080	2055	
94229		Perth Road- Perth Rd 10	Perth Road Village	CSP	500	12.2	2012			$328.00	$470.00	$ 5,734	80%	1	3	2012	50	3	2081 to 2084	2062	2112
94230		Perth Road- Perth Rd 10	Perth Road Village	CSP	500	4.4	2012			$328.00	$470.00	$ 2,068	80%	1	3	2012	50	3	2081 to 2084	2062	2112
94231		Shales/Opp- Shales Rd	Perth Road Village	CSP	500	15.0	2012			$328.00	$470.00	$ 7,050	80%	1	3	2012	50	3	2081 to 2084	2062	2112
94232		Shales/Opp- Shales Rd	Perth Road Village	CSP	500	3.4	2012			$328.00	$470.00	$ 1,598	80%	1	3	2012	50	3	2081 to 2084	2062	2112
94233		Shales/Opp- Opinicon Rd	Perth Road Village	CSP	500	13.0	2012			$328.00	$470.00	$ 6,110	80%	1	3	2012	50	3	2081 to 2084	2062	2112
94234		Shales/Opp- Opinicon Rd	Perth Road Village	CSP	500	16.3	2012			$328.00	$470.00	$ 7,661	80%	1	3	2012	50	3	2081 to 2084	2062	2112
94235		Shales/Opp- Opinicon Rd	Perth Road Village	CSP	500	55.5	2012			$328.00	$470.00	$ 26,085	80%	1	3	2012	50	3	2081 to 2084	2062	2112
94228		Perth Road- Perth Rd 10	Perth Road Village	CSP	600	17.0	2012			$332.00	$530.00	$ 9,010	80%	1	3	2012	50	3	2081 to 2084	2062	2112
94833		Batersea- Wellington St	Battersea	CSP	300	21.9	2013			$291.00	$350.00	$ 7,665	82%	1	2	2013	50	2	2081 to 2084	2063	2113
93713		Road38	Harrowsmith	Concrete	500	81.2	1985			$328.00	$470.00	$ 38,164	54%	3	3	1985	80	9	2034 to 2057	2065	
93715		Road38	Harrowsmith	Concrete	500	75.6	1985			$328.00	$470.00	$ 35,532	54%	3	3	1985	80	9	2034 to 2057	2065	
93717		Road38	Harrowsmith	Concrete	500	67.5	1985			$328.00	$470.00	$ 31,725	54%	3	3	1985	80	9	2034 to 2057	2065	
93720		Road38	Harrowsmith	Concrete	500	39.0	1985			$328.00	$470.00	$ 18,330	54%	3	3	1985	80	9	2034 to 2057	2065	
93721		Road38	Harrowsmith	Concrete	300	18.9	1985			$291.00	$350.00	$ 6,615	54%	3	2	1985	80	6	2058 to 2080	2065	
93722		Road38	Harrowsmith	Concrete	300	16.1	1985			$291.00	$350.00	$ 5,635	54%	3	2	1985	80	6	2058 to 2080	2065	
93915		Sydenham- Stage Coach Rd	Sydenham	HDPE	450	46.4	1986			$312.00	$450.00	$ 20,880	55%	3	3	1986	80	9	2034 to 2057	2066	
93917		Sydenham- Stage Coach Rd	Sydenham	HDPE	450	65.2	1986			$312.00	$450.00	$ 29,340	55%	3	3	1986	80	9	2034 to 2057	2066	
93971		Sydenham- Wheatley St	Sydenham	HDPE	450	6.7	1986			$312.00	$450.00	$ 3,015	55%	3	3	1986	80	9	2034 to 2057	2066	
93999		Sydenham- Point Rd	Sydenham	HDPE	450	21.7	1986			$312.00	$450.00	$ 9,765	55%	3	3	1986	80	9	2034 to 2057	2066	
93956		Sydenham- George St	Sydenham	HDPE	450	9.5	1986			$312.00	$450.00	$ 4,275	55%	3	3	1986	80	9	2034 to 2057	2066	
93960		Sydenham- Sydenham Mill St	Sydenham	HDPE	450	71.5	1986			$312.00	$450.00	$ 32,175	55%	3	3	1986	80	9	2034 to 2057	2066	
93964		Sydenham- Sydenham Mill St	Sydenham	HDPE	450	36.3	1986			$312.00	$450.00	$ 16,335	55%	3	3	1986	80	9	2034 to 2057	2066	
93938		Sydenham- Sydenham William St	Sydenham	HDPE	525	21.2	1986			$328.00	$470.00	$ 9,964	55%	3	3	1986	80	9	2034 to 2057	2066	
93957		Sydenham- Sydenham Mill St	Sydenham	HDPE	525	25.4	1986			$328.00	$470.00	$ 11,938	55%	3	3	1986	80	9	2034 to 2057	2066	
93958		Sydenham- Sydenham Mill St	Sydenham	HDPE	525	66.0	1986			$328.00	$470.00	$ 31,020	55%	3	3	1986	80	9	2034 to 2057	2066	
93962		Sydenham- Sydenham Mill St	Sydenham	PVC	525	74.6	1986			$328.00	$470.00	$ 35,062	55%	3	3	1986	80	9	2034 to 2057	2066	
93989		Sydenham- Wheatley St	Sydenham	HDPE	600	19.6	1986			$332.00	$530.00	$ 10,388	55%	3	3	1986	80	9	2034 to 2057	2066	
93937		Sydenham- Sydenham William St	Sydenham	HDPE	600	23.6	1986			$332.00	$530.00	$ 12,508	55%	3	3	1986	80	9	2034 to 2057	2066	
93949		Sydenham- George St (Bank Outlet)	Sydenham	PVC	600	62.6	1986			$332.00	$530.00	$ 33,178	55%	3	3	1986	80	9	2034 to 2057	2066	
93984		Sydenham- Wheatley St	Sydenham	PVC	600	59.6	1986			$332.00	$530.00	$ 31,588	55%	3	3	1986	80	9	2034 to 2057	2066	
94000		Sydenham- Point Rd	Sydenham	PVC	600	21.7	1986			$332.00	$530.00	$ 11,501	55%	3	3	1986	80	9	2034 to 2057	2066	
93945		Sydenham- Amelia St	Sydenham	HDPE	300	3.6	1986			$291.00	$350.00	$ 1,260	55%	3	2	1986	80	6	2058 to 2080	2066	
93967		Sydenham- Sydenham Mill St	Sydenham	HDPE	300	13.0	1986			$291.00	$350.00	$ 4,550	55%	3	2	1986	80	6	2058 to 2080	2066	
93972		Sydenham- Wheatley St	Sydenham	HDPE	300	11.1	1986			$291.00	$350.00	$ 3,885	55%	3	2	1986	80	6	2058 to 2080	2066	
93977		Sydenham- Wheatley St	Sydenham	HDPE	300	10.9	1986			$291.00	$350.00	$ 3,815	55%	3	2	1986	80	6	2058 to 2080	2066	
93988		Sydenham- Wheatley St	Sydenham	HDPE	300	2.0	1986			$291.00	$350.00	$ 700	55%	3	2	1986	80	6	2058 to 2080	2066	
93925		Sydenham- Sydenham William St	Sydenham	HDPE	300	6.7	1986			$291.00	$350.00	$ 2,345	55%	3	2	1986	80	6	2058 to 2080	2066	
93943		Sydenham- Sydenham William St	Sydenham	HDPE	300	6.3	1986			$291.00	$350.00	$ 2,205	55%	3	2	1986	80	6	2058 to 2080	2066	
93944		Sydenham- Sydenham William St	Sydenham	HDPE	300	3.7	1986			$291.00	$350.00	$ 1,295	55%	3	2	1986	80	6	2058 to 2080	2066	
93952		Sydenham- Sydenham William St	Sydenham	PVC	300	37.1	1986			$291.00	$350.00	$ 12,985	55%	3	2	1986	80	6	2058 to 2080	2066	
93953		Sydenham- Sydenham William St	Sydenham	PVC	300	8.0	1986			$291.00	$350.00	$ 2,800	55%	3	2	1986	80	6	2058 to 2080	2066	
93954		Sydenham- Sydenham William St	Sydenham	PVC	300	54.5	1986			$291.00	$350.00	$ 19,075	55%	3	2	1986	80	6	2058 to 2080	2066	
93918		Sydenham- Stage Coach Rd	Sydenham	PVC	300	8.2	1986			$291.00	$350.00	$ 2,870	55%	3	2	1986	80	6	2058 to 2080	2066	
93968		Sydenham- Sydenham Mill St	Sydenham	PVC	300	7.8	1986			$291.00	$350.00	$ 2,730	55%	3	2	1986	80	6	2058 to 2080	2066	
93969		Sydenham- Sydenham Mill St	Sydenham	PVC	300	44.8	1986			$291.00	$350.00	$ 15,680	55%	3	2	1986	80	6	2058 to 2080	2066	
93983		Sydenham- Wheatley St	Sydenham	PVC	300	3.2	1986			$291.00	$350.00	$ 1,120	55%	3	2	1986	80	6	2058 to 2080	2066	
93985		Sydenham- Wheatley St	Sydenham	PVC	300	4.2	1986			$291.00	$350.00	$ 1,470	55%	3	2	1986	80	6	2058 to 2080	2066	
93986		Sydenham- Wheatley St	Sydenham	PVC	300	7.9	1986			$291.00	$350.00	$ 2,765	55%	3	2	1986	80	6	2058 to 2080	2066	
93950		Sydenham- George St	Sydenham	PVC	300	124.3	1986			$291.00	$350.00	$ 43,505	55%	3	2	1986	80	6	2058 to 2080	2066	
93951		Sydenham- George St	Sydenham	PVC	300	7.5	1986			$291.00	$350.00	$ 2,625	55%	3	2	1986	80	6	2058 to 2080	2066	
93955		Sydenham- Sydenham William St	Sydenham	PVC	300	6.8	1986			$291.00	$350.00	$ 2,380	55%	3	2	1986	80	6	2058 to 2080	2066	
93959		Sydenham- Sydenham Mill St	Sydenham	PVC	300	7.8	1986			$291.00	$350.00	$ 2,730	55%	3	2	1986	80	6	2058 to 2080	2066	

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
93961		Sydenham- Sydenham Mill St	Sydenham	PVC	300	7.5	1986			$291.00	$350.00	$ 2,625	55%	3	2	1986	80	6	2058 to 2080	2066	
93963		Sydenham- Sydenham Mill St	Sydenham	PVC	300	7.5	1986			$291.00	$350.00	$ 2,625	55%	3	2	1986	80	6	2058 to 2080	2066	
93965		Sydenham- Sydenham Mill St	Sydenham	PVC	300	13.4	1986			$291.00	$350.00	$ 4,690	55%	3	2	1986	80	6	2058 to 2080	2066	
93923		Sydenham- Sydenham Church St	Sydenham	HDPE	375	9.2	1986			$295.00	$420.00	$ 3,864	55%	3	2	1986	80	6	2058 to 2080	2066	
93931		Sydenham- Brewery St	Sydenham	HDPE	375	77.3	1986			$295.00	$420.00	$ 32,466	55%	3	2	1986	80	6	2058 to 2080	2066	
93932		Sydenham- Brewery St	Sydenham	HDPE	375	6.7	1986			$295.00	$420.00	$ 2,814	55%	3	2	1986	80	6	2058 to 2080	2066	
93947		Sydenham- Amelia St	Sydenham	HDPE	375	9.8	1986			$295.00	$420.00	$ 4,116	55%	3	2	1986	80	6	2058 to 2080	2066	
93919		Sydenham- Stage Coach Rd	Sydenham	HDPE	375	113.6	1986			$295.00	$420.00	$ 47,712	55%	3	2	1986	80	6	2058 to 2080	2066	
93933		Sydenham- Brewery St	Sydenham	HDPE	375	2.3	1986			$295.00	$420.00	$ 966	55%	3	2	1986	80	6	2058 to 2080	2066	
93922		Sydenham- Sydenham Church St	Sydenham	HDPE	375	9.3	1986			$295.00	$420.00	$ 3,906	55%	3	2	1986	80	6	2058 to 2080	2066	
93924		Sydenham- Sydenham William St	Sydenham	HDPE	375	10.3	1986			$295.00	$420.00	$ 4,326	55%	3	2	1986	80	6	2058 to 2080	2066	
93926		Sydenham- Sydenham William St	Sydenham	HDPE	375	2.3	1986			$295.00	$420.00	$ 966	55%	3	2	1986	80	6	2058 to 2080	2066	
93927		Sydenham- Sydenham William St	Sydenham	HDPE	375	67.5	1986			$295.00	$420.00	$ 28,350	55%	3	2	1986	80	6	2058 to 2080	2066	
93928		Sydenham- Sydenham William St	Sydenham	HDPE	375	19.8	1986			$295.00	$420.00	$ 8,316	55%	3	2	1986	80	6	2058 to 2080	2066	
93929		Sydenham- Sydenham William St	Sydenham	HDPE	375	11.7	1986			$295.00	$420.00	$ 4,914	55%	3	2	1986	80	6	2058 to 2080	2066	
93930		Sydenham- Brewery St	Sydenham	HDPE	375	1.9	1986			$295.00	$420.00	$ 798	55%	3	2	1986	80	6	2058 to 2080	2066	
93934		Sydenham- Brewery St	Sydenham	HDPE	375	100.8	1986			$295.00	$420.00	$ 42,336	55%	3	2	1986	80	6	2058 to 2080	2066	
93935		Sydenham- Brewery St	Sydenham	HDPE	375	6.8	1986			$295.00	$420.00	$ 2,856	55%	3	2	1986	80	6	2058 to 2080	2066	
93936		Sydenham- Brewery St	Sydenham	HDPE	375	12.5	1986			$295.00	$420.00	$ 5,250	55%	3	2	1986	80	6	2058 to 2080	2066	
93939		Sydenham- Sydenham William St	Sydenham	HDPE	375	16.8	1986			$295.00	$420.00	$ 7,056	55%	3	2	1986	80	6	2058 to 2080	2066	
93940		Sydenham- Sydenham William St	Sydenham	HDPE	375	42.4	1986			$295.00	$420.00	$ 17,808	55%	3	2	1986	80	6	2058 to 2080	2066	
93941		Sydenham- Sydenham William St	Sydenham	HDPE	375	8.5	1986			$295.00	$420.00	$ 3,570	55%	3	2	1986	80	6	2058 to 2080	2066	
93946		Sydenham- Amelia St	Sydenham	HDPE	375	79.8	1986			$295.00	$420.00	$ 33,516	55%	3	2	1986	80	6	2058 to 2080	2066	
93948		Sydenham- Amelia St	Sydenham	HDPE	375	17.2	1986			$295.00	$420.00	$ 7,224	55%	3	2	1986	80	6	2058 to 2080	2066	
93970		Sydenham- Sydenham Mill St	Sydenham	PVC	250	3.2	1986			$291.00	$350.00	$ 1,120	55%	3	1	1986	80	3	2081 to 2084	2066	
94413		Inverary- Latimer Rd	Inverary	PVC	300	15.8	1993			$291.00	$350.00	$ 5,530	64%	2	2	1993	80	4	2058 to 2080	2073	
94414		Inverary- Latimer Rd	Inverary	HDPE	375	11.6	1993			$295.00	$420.00	$ 4,872	64%	2	2	1993	80	4	2058 to 2080	2073	
94810		Battersea- Battersea Rd	Battersea	HDPE	650	3.9	2004			$337.00	$530.00	$ 2,067	78%	2	4	2004	80	8	2034 to 2057	2084	
94811		Battersea- Battersea Rd	Battersea	HDPE	650	7.2	2004			$337.00	$530.00	$ 3,816	78%	2	4	2004	80	8	2034 to 2057	2084	
94818		Battersea- Battersea Rd	Battersea	Concrete	500	14.8	2004			$328.00	$470.00	$ 6,956	78%	2	3	2004	80	6	2058 to 2080	2084	
94813		Battersea- Battersea Rd	Battersea	PVC	500	2.0	2004			$328.00	$470.00	$ 940	78%	2	3	2004	80	6	2058 to 2080	2084	
94800		Battersea- Battersea Rd	Battersea	HDPE	525	6.9	2004			$328.00	$470.00	$ 3,243	78%	2	3	2004	80	6	2058 to 2080	2084	
94801		Battersea- Battersea Rd	Battersea	HDPE	525	7.1	2004			$328.00	$470.00	$ 3,337	78%	2	3	2004	80	6	2058 to 2080	2084	
94812		Battersea- Battersea Rd	Battersea	PVC	600	14.0	2004			$332.00	$530.00	$ 7,420	78%	2	3	2004	80	6	2058 to 2080	2084	
94817		Battersea- Battersea Rd	Battersea	Concrete	300	17.8	2004			$291.00	$350.00	$ 6,230	78%	2	2	2004	80	4	2058 to 2080	2084	
94807		Battersea- Battersea Rd	Battersea	PVC	300	7.2	2004			$291.00	$350.00	$ 2,520	78%	2	2	2004	80	4	2058 to 2080	2084	
94809		Battersea- Battersea Rd	Battersea	HDPE	375	7.8	2004			$295.00	$420.00	$ 3,276	78%	2	2	2004	80	4	2058 to 2080	2084	
94808		Battersea- Battersea Rd	Battersea	PVC	400	107.0	2004			$312.00	$450.00	$ 48,150	78%	2	2	2004	80	4	2058 to 2080	2084	
94803		Battersea- Battersea Rd	Battersea	PVC	400	7.9	2004			$312.00	$450.00	$ 3,555	78%	2	2	2004	80	4	2058 to 2080	2084	
94204		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	525	19.4	2012			$328.00	$470.00	$ 9,118	88%	1	3	2012	80	3	2081 to 2084	2092	
94205		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	525	18.0	2012			$328.00	$470.00	$ 8,460	88%	1	3	2012	80	3	2081 to 2084	2092	
94206		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	525	7.0	2012			$328.00	$470.00	$ 3,290	88%	1	3	2012	80	3	2081 to 2084	2092	
94207		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	525	6.9	2012			$328.00	$470.00	$ 3,243	88%	1	3	2012	80	3	2081 to 2084	2092	
94209		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	525	17.7	2012			$328.00	$470.00	$ 8,319	88%	1	3	2012	80	3	2081 to 2084	2092	
94216		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	525	26.2	2012			$328.00	$470.00	$ 12,314	88%	1	3	2012	80	3	2081 to 2084	2092	
94217		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	525	34.6	2012			$328.00	$470.00	$ 16,262	88%	1	3	2012	80	3	2081 to 2084	2092	
94210		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	600	12.9	2012			$332.00	$530.00	$ 6,837	88%	1	3	2012	80	3	2081 to 2084	2092	
94212		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	600	35.3	2012			$332.00	$530.00	$ 18,709	88%	1	3	2012	80	3	2081 to 2084	2092	
94213		Perth Road- Perth Road	Perth Road Village	HDPE	600	22.9	2012			$332.00	$530.00	$ 12,137	88%	1	3	2012	80	3	2081 to 2084	2092	
94211		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	600	24.7	2012			$332.00	$530.00	$ 13,091	88%	1	3	2012	80	3	2081 to 2084	2092	
94200		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	300	12.3	2012			$291.00	$350.00	$ 4,305	88%	1	2	2012	80	2	2081 to 2084	2092	
94201		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	300	25.5	2012			$291.00	$350.00	$ 8,925	88%	1	2	2012	80	2	2081 to 2084	2092	
94203		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	300	5.7	2012			$291.00	$350.00	$ 1,995	88%	1	2	2012	80	2	2081 to 2084	2092	
94208		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	300	17.3	2012			$291.00	$350.00	$ 6,055	88%	1	2	2012	80	2	2081 to 2084	2092	
94227		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	300	9.0	2012			$291.00	$350.00	$ 3,150	88%	1	2	2012	80	2	2081 to 2084	2092	
94202		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	300	20.8	2012			$291.00	$350.00	$ 7,280	88%	1	2	2012	80	2	2081 to 2084	2092	
94214		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	300	29.3	2012			$291.00	$350.00	$ 10,255	88%	1	2	2012	80	2	2081 to 2084	2092	
94215		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	300	18.1	2012			$291.00	$350.00	$ 6,335	88%	1	2	2012	80	2	2081 to 2084	2092	
94224		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	375	23.2	2012			$295.00	$420.00	$ 9,744	88%	1	2	2012	80	2	2081 to 2084	2092	
94225		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	375	5.6	2012			$295.00	$420.00	$ 2,352	88%	1	2	2012	80	2	2081 to 2084	2092	
94226		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	375	8.6	2012			$295.00	$420.00	$ 3,612	88%	1	2	2012	80	2	2081 to 2084	2092	
94218		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	375	35.4	2012			$295.00	$420.00	$ 14,868	88%	1	2	2012	80	2	2081 to 2084	2092	
94219		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	375	58.2	2012			$295.00	$420.00	$ 24,444	88%	1	2	2012	80	2	2081 to 2084	2092	
94220		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	375	4.6	2012			$295.00	$420.00	$ 1,932	88%	1	2	2012	80	2	2081 to 2084	2092	
94221		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	375	9.4	2012			$295.00	$420.00	$ 3,948	88%	1	2	2012	80	2	2081 to 2084	2092	
94222		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	375	13.6	2012			$295.00	$420.00	$ 5,712	88%	1	2	2012	80	2	2081 to 2084	2092	
94223		Perth Road- Perth Road Crescent	Perth Road Village	HDPE	375	13.5	2012			$295.00	$420.00	$ 5,670	88%	1	2	2012	80	2	2081 to 2084	2092	
94832		Batersea- Wellington St	Battersea	HDPE	525	6.0	2013			$328.00	$470.00	$ 2,820	89%	1	3	2013	80	3	2081 to 2084	2093	
94830		Batersea- Wellington St	Battersea	PVC	525	26.1	2013			$328.00	$470.00	$ 12,267	89%	1	3	2013	80	3	2081 to 2084	2093	
94831		Batersea- Wellington St	Battersea	PVC	525	7.4	2013			$328.00	$470.00	$ 3,478	89%	1	3	2013	80	3	2081 to 2084	2093	
94828		Batersea- Wellington St	Battersea	PVC	600	34.2	2013			$332.00	$530.00	$ 18,126	89%	1	3	2013	80	3	2081 to 2084	2093	
94838		Batersea- Water St	Battersea	HDPE	300	26.8	2013			$291.00	$350.00	$ 9,380	89%	1	2	2013	80	2	2081 to 2084	2093	
94835		Battersea- Battersea Cross St	Battersea	PVC	300	41.2	2013			$291.00	$350.00	$ 14,420	89%	1	2	2013	80	2	2081 to 2084	2093	
94837		Batersea- Wellington St	Battersea	PVC	300	7.5	2013			$291.00	$350.00	$ 2,625	89%	1	2	2013	80	2	2081 to 2084	2093	

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
94826		Battsea- Battersea Water St	Battersea	PVC	300	20.3	2013			$291.00	$350.00	$ 7,105	89%	1	2	2013	80	2	2081 to 2084	2093	
94827		Battsea- Battersea Water St	Battersea	PVC	300	7.5	2013			$291.00	$350.00	$ 2,625	89%	1	2	2013	80	2	2081 to 2084	2093	
94829		Batersea- Wellington St	Battersea	PVC	300	8.7	2013			$291.00	$350.00	$ 3,045	89%	1	2	2013	80	2	2081 to 2084	2093	
94836		Batersea- Wellington St	Battersea	PVC	300	13.8	2013			$291.00	$350.00	$ 4,830	89%	1	2	2013	80	2	2081 to 2084	2093	
94834		Batersea- Wellington St	Battersea	PVC	400	34.0	2013			$312.00	$450.00	$ 15,300	89%	1	2	2013	80	2	2081 to 2084	2093	
94825		Battsea- Battersea Water St	Battersea	PVC	400	8.3	2013			$312.00	$450.00	$ 3,735	89%	1	2	2013	80	2	2081 to 2084	2093	
93900		Sydenham- Rutledge Rd	Sydenham	HDPE	750	82.2	2014			$337.00	$690.00	$ 56,718	90%	1	4	2014	80	4	2058 to 2080	2094	
93908		Sydenham- Rutledge Rd	Sydenham	PVC	450	2.3	2014			$312.00	$450.00	$ 1,035	90%	1	3	2014	80	3	2081 to 2084	2094	
93901		Sydenham- Rutledge Rd	Sydenham	PVC	450	2.0	2014			$312.00	$450.00	$ 900	90%	1	3	2014	80	3	2081 to 2084	2094	
93911		Sydenham- Rutledge Rd	Sydenham	PVC	450	2.2	2014			$312.00	$450.00	$ 990	90%	1	3	2014	80	3	2081 to 2084	2094	
93903		Sydenham- Rutledge Rd	Sydenham	PVC	450	2.8	2014			$312.00	$450.00	$ 1,260	90%	1	3	2014	80	3	2081 to 2084	2094	
93992		Sydenham- Rutledge Rd	Sydenham	HDPE	525	45.7	2014			$328.00	$470.00	$ 21,479	90%	1	3	2014	80	3	2081 to 2084	2094	
93991		Sydenham- Rutledge Rd	Sydenham	HDPE	600	16.5	2014			$332.00	$530.00	$ 8,745	90%	1	3	2014	80	3	2081 to 2084	2094	
93905		Sydenham- Rutledge Rd	Sydenham	PVC	600	75.6	2014			$332.00	$530.00	$ 40,068	90%	1	3	2014	80	3	2081 to 2084	2094	
93910		Sydenham- Rutledge Rd	Sydenham	PVC	600	97.2	2014			$332.00	$530.00	$ 51,516	90%	1	3	2014	80	3	2081 to 2084	2094	
93913		Sydenham- Rutledge Rd	Sydenham	PVC	600	91.6	2014			$332.00	$530.00	$ 48,548	90%	1	3	2014	80	3	2081 to 2084	2094	
93914		Sydenham- Rutledge Rd	Sydenham	PVC	600	14.6	2014			$332.00	$530.00	$ 7,738	90%	1	3	2014	80	3	2081 to 2084	2094	
93920		Sydenham- Rutledge Rd	Sydenham	HDPE	300	2.3	2014			$291.00	$350.00	$ 805	90%	1	2	2014	80	2	2081 to 2084	2094	
93990		Sydenham- Rutledge Rd	Sydenham	HDPE	300	2.0	2014			$291.00	$350.00	$ 700	90%	1	2	2014	80	2	2081 to 2084	2094	
93993		Sydenham- Rutledge Rd	Sydenham	HDPE	300	11.5	2014			$291.00	$350.00	$ 4,025	90%	1	2	2014	80	2	2081 to 2084	2094	
93995		Sydenham- Rutledge Rd	Sydenham	HDPE	300	31.9	2014			$291.00	$350.00	$ 11,165	90%	1	2	2014	80	2	2081 to 2084	2094	
93996		Sydenham- Rutledge Rd	Sydenham	HDPE	300	7.6	2014			$291.00	$350.00	$ 2,660	90%	1	2	2014	80	2	2081 to 2084	2094	
93921		Sydenham- Rutledge Rd	Sydenham	HDPE	300	126.0	2014			$291.00	$350.00	$ 44,100	90%	1	2	2014	80	2	2081 to 2084	2094	
93907		Sydenham- Rutledge Rd	Sydenham	PVC	300	19.9	2014			$291.00	$350.00	$ 6,965	90%	1	2	2014	80	2	2081 to 2084	2094	
93902		Sydenham- Rutledge Rd	Sydenham	PVC	300	8.1	2014			$291.00	$350.00	$ 2,835	90%	1	2	2014	80	2	2081 to 2084	2094	
93904		Sydenham- Rutledge Rd	Sydenham	PVC	300	8.1	2014			$291.00	$350.00	$ 2,835	90%	1	2	2014	80	2	2081 to 2084	2094	
93906		Sydenham- Rutledge Rd	Sydenham	PVC	300	4.1	2014			$291.00	$350.00	$ 1,435	90%	1	2	2014	80	2	2081 to 2084	2094	
93909		Sydenham- Rutledge Rd	Sydenham	PVC	300	7.9	2014			$291.00	$350.00	$ 2,765	90%	1	2	2014	80	2	2081 to 2084	2094	
93912		Sydenham- Rutledge Rd	Sydenham	PVC	300	7.9	2014			$291.00	$350.00	$ 2,765	90%	1	2	2014	80	2	2081 to 2084	2094	
93994		Sydenham- Rutledge Rd	Sydenham	HDPE	375	47.5	2014			$295.00	$420.00	$ 19,950	90%	1	2	2014	80	2	2081 to 2084	2094	
93000	44065	Bellrock- Main St	Bellrock	HDPE	450	4.4	2015			$312.00	$450.00	$ 1,980	91%	1	3	2015	80	3	2081 to 2084	2095	
93007	44065	Bellrock- Main St	Bellrock	HDPE	450	41.1	2015			$312.00	$450.00	$ 18,495	91%	1	3	2015	80	3	2081 to 2084	2095	
93003	44065	Bellrock- Main St	Bellrock	HDPE	525	93.9	2015			$328.00	$470.00	$ 44,133	91%	1	3	2015	80	3	2081 to 2084	2095	
93005	44065	Bellrock- Main St	Bellrock	HDPE	300	6.6	2015			$291.00	$350.00	$ 2,310	91%	1	2	2015	80	2	2081 to 2084	2095	
93015	40435	Bellrock- Bellrock Mill St	Bellrock	HDPE	300	11.7	2015			$291.00	$350.00	$ 4,095	91%	1	2	2015	80	2	2081 to 2084	2095	
93016	40435	Bellrock- Bellrock Mill St	Bellrock	HDPE	300	20.5	2015			$291.00	$350.00	$ 7,175	91%	1	2	2015	80	2	2081 to 2084	2095	
93017	40435	Bellrock- Bellrock Mill St	Bellrock	HDPE	300	25.5	2015			$291.00	$350.00	$ 8,925	91%	1	2	2015	80	2	2081 to 2084	2095	
93018	40435	Bellrock- Bellrock Mill St	Bellrock	PVC	300	5.8	2015			$291.00	$350.00	$ 2,030	91%	1	2	2015	80	2	2081 to 2084	2095	
93001	44065	Bellrock- Main St	Bellrock	HDPE	375	10.1	2015			$295.00	$420.00	$ 4,242	91%	1	2	2015	80	2	2081 to 2084	2095	
93002	44065	Bellrock- Main St	Bellrock	HDPE	375	0.9	2015			$295.00	$420.00	$ 378	91%	1	2	2015	80	2	2081 to 2084	2095	
93004	44065	Bellrock- Main St	Bellrock	HDPE	375	5.9	2015			$295.00	$420.00	$ 2,478	91%	1	2	2015	80	2	2081 to 2084	2095	
93006	44065	Bellrock- Main St	Bellrock	HDPE	375	87.6	2015			$295.00	$420.00	$ 36,792	91%	1	2	2015	80	2	2081 to 2084	2095	
93008	44065	Bellrock- Main St	Bellrock	HDPE	375	3.2	2015			$295.00	$420.00	$ 1,344	91%	1	2	2015	80	2	2081 to 2084	2095	
93009	44065	Bellrock- Main St	Bellrock	HDPE	375	6.1	2015			$295.00	$420.00	$ 2,562	91%	1	2	2015	80	2	2081 to 2084	2095	
93010	44065	Bellrock- Main St	Bellrock	HDPE	375	8.6	2015			$295.00	$420.00	$ 3,612	91%	1	2	2015	80	2	2081 to 2084	2095	
93011	44065	Bellrock- Main St	Bellrock	HDPE	375	25.6	2015			$295.00	$420.00	$ 10,752	91%	1	2	2015	80	2	2081 to 2084	2095	
93012	44065	Bellrock- Main St	Bellrock	HDPE	375	4.8	2015			$295.00	$420.00	$ 2,016	91%	1	2	2015	80	2	2081 to 2084	2095	
93013	44065	Bellrock- Main St	Bellrock	HDPE	375	9.6	2015			$295.00	$420.00	$ 4,032	91%	1	2	2015	80	2	2081 to 2084	2095	
93014	44065	Bellrock- Main St	Bellrock	HDPE	375	8.4	2015			$295.00	$420.00	$ 3,528	91%	1	2	2015	80	2	2081 to 2084	2095	
93019	40435	Bellrock- Bellrock Mill St	Bellrock	PVC	250	6.4	2015			$291.00	$350.00	$ 2,240	91%	1	1	2015	80	1	2084	2095	
93700		Harrowsmith- Kingston Rd	Harrowsmith	HDPE	300	18.0	2017			$291.00	$350.00	$ 6,300	94%	1	2	2017	80	2	2081 to 2084	2097	
93748		Robinson Road	Harrowsmith	HDPE	300	25.5	2017			$291.00	$350.00	$ 8,925	94%	1	2	2017	80	2	2081 to 2084	2097	
93749		Robinson Road	Harrowsmith	HDPE	300	7.5	2017			$291.00	$350.00	$ 2,625	94%	1	2	2017	80	2	2081 to 2084	2097	
93750		Robinson Road	Harrowsmith	HDPE	300	19.2	2017			$291.00	$350.00	$ 6,720	94%	1	2	2017	80	2	2081 to 2084	2097	
94030		Sydenham- Portland Ave	Sydenham	HDPE	1050	8.3	2018			$337.00	$975.00	$ 8,093	95%	1	5	2018	80	5	2058 to 2080	2098	
94039		Sydenham- Portland Ave	Sydenham	HDPE	1050	5.7	2018			$337.00	$975.00	$ 5,558	95%	1	5	2018	80	5	2058 to 2080	2098	
94041		Sydenham- Portland Ave	Sydenham	HDPE	1050	12.1	2018			$337.00	$975.00	$ 11,798	95%	1	5	2018	80	5	2058 to 2080	2098	
94042		Sydenham- Portland Ave	Sydenham	HDPE	1050	26.9	2018			$337.00	$975.00	$ 26,228	95%	1	5	2018	80	5	2058 to 2080	2098	
94043		Sydenham- Portland Ave	Sydenham	HDPE	1050	38.4	2018			$337.00	$975.00	$ 37,440	95%	1	5	2018	80	5	2058 to 2080	2098	
93711		Road38	Harrowsmith	Concrete	500	44.6	2018			$328.00	$470.00	$ 20,962	95%	1	3	2018	80	3	2081 to 2084	2098	
94016		Sydenham- Bedford Rd	Sydenham	HDPE	525	8.6	2018			$328.00	$470.00	$ 4,042	95%	1	3	2018	80	3	2081 to 2084	2098	
94017		Sydenham- Bedford Rd	Sydenham	HDPE	525	53.3	2018			$328.00	$470.00	$ 25,051	95%	1	3	2018	80	3	2081 to 2084	2098	
93706		Road38	Harrowsmith	HDPE	600	33.3	2018			$332.00	$530.00	$ 17,649	95%	1	3	2018	80	3	2081 to 2084	2098	
93710		Road38	Harrowsmith	HDPE	600	26.7	2018			$332.00	$530.00	$ 14,151	95%	1	3	2018	80	3	2081 to 2084	2098	
94019		Sydenham- Bedford Rd	Sydenham	HDPE	600	20.8	2018			$332.00	$530.00	$ 11,024	95%	1	3	2018	80	3	2081 to 2084	2098	
94021		Sydenham- Bedford Rd	Sydenham	HDPE	600	74.4	2018			$332.00	$530.00	$ 39,432	95%	1	3	2018	80	3	2081 to 2084	2098	
94023		Sydenham- Bedford Rd	Sydenham	HDPE	600	131.6	2018			$332.00	$530.00	$ 69,748	95%	1	3	2018	80	3	2081 to 2084	2098	
94029		Sydenham- Bedford Rd	Sydenham	HDPE	600	69.8	2018			$332.00	$530.00	$ 36,994	95%	1	3	2018	80	3	2081 to 2084	2098	
93743		Harrowsmith- Road 38	Harrowsmith	HDPE	300	14.5	2018			$291.00	$350.00	$ 5,075	95%	1	2	2018	80	2	2081 to 2084	2098	
93704		Road38	Harrowsmith	HDPE	300	13.0	2018			$291.00	$350.00	$ 4,550	95%	1	2	2018	80	2	2081 to 2084	2098	
93705		Road38	Harrowsmith	HDPE	300	2.4	2018			$291.00	$350.00	$ 840	95%	1	2	2018	80	2	2081 to 2084	2098	
93707		Road38	Harrowsmith	HDPE	300	3.4	2018			$291.00	$350.00	$ 1,190	95%	1	2	2018	80	2	2081 to 2084	2098	
93708		Road38	Harrowsmith	HDPE	300	11.1	2018			$291.00	$350.00	$ 3,885	95%	1	2	2018	80	2	2081 to 2084	2098	
93709		Road38	Harrowsmith	HDPE	300	9.6	2018			$291.00	$350.00	$ 3,360	95%	1	2	2018	80	2	2081 to 2084	2098	

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
93744		Road38	Harrowsmith	HDPE	300	44.6	2018			$291.00	$350.00	$ 15,610	95%	1	2	2018	80	2	2081 to 2084	2098	
93745		Road38	Harrowsmith	HDPE	300	50.5	2018			$291.00	$350.00	$ 17,675	95%	1	2	2018	80	2	2081 to 2084	2098	
93746		Road38	Harrowsmith	HDPE	300	8.5	2018			$291.00	$350.00	$ 2,975	95%	1	2	2018	80	2	2081 to 2084	2098	
93747		Road38	Harrowsmith	HDPE	300	22.5	2018			$291.00	$350.00	$ 7,875	95%	1	2	2018	80	2	2081 to 2084	2098	
93751		Road38	Harrowsmith	HDPE	300	8.2	2018			$291.00	$350.00	$ 2,870	95%	1	2	2018	80	2	2081 to 2084	2098	
94018		Sydenham- Bedford Rd	Sydenham	PVC	300	2.5	2018			$291.00	$350.00	$ 875	95%	1	2	2018	80	2	2081 to 2084	2098	
94022		Sydenham- Bedford Rd	Sydenham	PVC	300	1.0	2018			$291.00	$350.00	$ 350	95%	1	2	2018	80	2	2081 to 2084	2098	
94006		Sydenham- Bedford Rd	Sydenham	HDPE	375	11.8	2018			$295.00	$420.00	$ 4,956	95%	1	2	2018	80	2	2081 to 2084	2098	
94010		Sydenham- Bedford Rd	Sydenham	HDPE	375	15.7	2018			$295.00	$420.00	$ 6,594	95%	1	2	2018	80	2	2081 to 2084	2098	
94028		Sydenham- Bedford Rd	Sydenham	HDPE	375	9.3	2018			$295.00	$420.00	$ 3,885	95%	1	2	2018	80	2	2081 to 2084	2098	
94032		Sydenham- Portland Ave	Sydenham	HDPE	375	56.0	2018			$295.00	$420.00	$ 23,520	95%	1	2	2018	80	2	2081 to 2084	2098	
94038		Sydenham- Portland Ave	Sydenham	HDPE	375	74.0	2018			$295.00	$420.00	$ 31,080	95%	1	2	2018	80	2	2081 to 2084	2098	
94044		Sydenham- Sydenham William St	Sydenham	HDPE	375	33.9	2018			$295.00	$420.00	$ 14,238	95%	1	2	2018	80	2	2081 to 2084	2098	
94045		Sydenham- Sydenham William St	Sydenham	HDPE	375	24.7	2018			$295.00	$420.00	$ 10,374	95%	1	2	2018	80	2	2081 to 2084	2098	
94035		Sydenham- Portland Ave	Sydenham	HDPE	375	60.8	2018			$295.00	$420.00	$ 25,536	95%	1	2	2018	80	2	2081 to 2084	2098	
94040		Sydenham- Portland Ave	Sydenham	HDPE	375	35.0	2018			$295.00	$420.00	$ 14,700	95%	1	2	2018	80	2	2081 to 2084	2098	
93752		Road38	Harrowsmith	HDPE	200	9.2	2018			$291.00	$320.00	$ 2,944	95%	1	1	2018	80	1	2084	2098	
93753		Road38	Harrowsmith	HDPE	200	9.2	2018			$291.00	$320.00	$ 2,944	95%	1	1	2018	80	1	2084	2098	
94008		Sydenham- Bedford Rd	Sydenham	HDPE	200	10.0	2018			$291.00	$320.00	$ 3,200	95%	1	1	2018	80	1	2084	2098	
94009		Sydenham- Bedford Rd	Sydenham	HDPE	200	5.9	2018			$291.00	$320.00	$ 1,888	95%	1	1	2018	80	1	2084	2098	
94014		Sydenham- Bedford Rd	Sydenham	HDPE	200	8.8	2018			$291.00	$320.00	$ 2,816	95%	1	1	2018	80	1	2084	2098	
94015		Sydenham- Bedford Rd	Sydenham	HDPE	200	67.1	2018			$291.00	$320.00	$ 21,472	95%	1	1	2018	80	1	2084	2098	
94025		Sydenham- Bedford Rd	Sydenham	HDPE	200	6.1	2018			$291.00	$320.00	$ 1,952	95%	1	1	2018	80	1	2084	2098	
94026		Sydenham- Bedford Rd	Sydenham	HDPE	200	2.2	2018			$291.00	$320.00	$ 704	95%	1	1	2018	80	1	2084	2098	
94027		Sydenham- Bedford Rd	Sydenham	HDPE	200	36.6	2018			$291.00	$320.00	$ 11,712	95%	1	1	2018	80	1	2084	2098	
94031		Sydenham- Portland Ave	Sydenham	HDPE	200	7.4	2018			$291.00	$320.00	$ 2,368	95%	1	1	2018	80	1	2084	2098	
94033		Sydenham- Portland Ave	Sydenham	HDPE	200	2.9	2018			$291.00	$320.00	$ 928	95%	1	1	2018	80	1	2084	2098	
94034		Sydenham- Portland Ave	Sydenham	HDPE	200	2.8	2018			$291.00	$320.00	$ 896	95%	1	1	2018	80	1	2084	2098	
94036		Sydenham- Portland Ave	Sydenham	HDPE	200	2.5	2018			$291.00	$320.00	$ 800	95%	1	1	2018	80	1	2084	2098	
94037		Sydenham- Portland Ave	Sydenham	HDPE	200	4.2	2018			$291.00	$320.00	$ 1,344	95%	1	1	2018	80	1	2084	2098	
94003		Sydenham- Bedford Rd	Sydenham	PVC	200	6.3	2018			$291.00	$320.00	$ 2,016	95%	1	1	2018	80	1	2084	2098	
94004		Sydenham- Bedford Rd	Sydenham	PVC	200	4.9	2018			$291.00	$320.00	$ 1,568	95%	1	1	2018	80	1	2084	2098	
94007		Sydenham- Bedford Rd	Sydenham	PVC	200	5.7	2018			$291.00	$320.00	$ 1,824	95%	1	1	2018	80	1	2084	2098	
94011		Sydenham- Bedford Rd	Sydenham	PVC	200	2.0	2018			$291.00	$320.00	$ 640	95%	1	1	2018	80	1	2084	2098	
94012		Sydenham- Bedford Rd	Sydenham	PVC	200	10.3	2018			$291.00	$320.00	$ 3,296	95%	1	1	2018	80	1	2084	2098	
94013		Sydenham- Bedford Rd	Sydenham	PVC	200	13.9	2018			$291.00	$320.00	$ 4,448	95%	1	1	2018	80	1	2084	2098	
94020		Sydenham- Bedford Rd	Sydenham	PVC	200	9.0	2018			$291.00	$320.00	$ 2,880	95%	1	1	2018	80	1	2084	2098	
94024		Sydenham- Bedford Rd	Sydenham	PVC	200	8.3	2018			$291.00	$320.00	$ 2,656	95%	1	1	2018	80	1	2084	2098	
94005		Sydenham- Bedford Rd	Sydenham	PVC	200	5.7	2018			$291.00	$320.00	$ 1,824	95%	1	1	2018	80	1	2084	2098	
94616		Sunbury- Battersea Rd	Sunbury	HDPE	525	21.3	2020			$328.00	$470.00	$ 10,011	98%	1	3	2020	80	3	2081 to 2084	2100	
94600		Sunbury- Battersea Rd	Sunbury	PVC	525	23.4	2020			$328.00	$470.00	$ 10,998	98%	1	3	2020	80	3	2081 to 2084	2100	
94601		Sunbury- Battersea Rd	Sunbury	PVC	525	8.1	2020			$328.00	$470.00	$ 3,807	98%	1	3	2020	80	3	2081 to 2084	2100	
94603		Sunbury- Battersea Rd	Sunbury	PVC	525	107.7	2020			$328.00	$470.00	$ 50,619	98%	1	3	2020	80	3	2081 to 2084	2100	
94619		Sunbury- Battersea Rd	Sunbury	HDPE	600	20.8	2020			$332.00	$530.00	$ 11,024	98%	1	3	2020	80	3	2081 to 2084	2100	
94613		Sunbury- Battersea Rd	Sunbury	PVC	600	4.6	2020			$332.00	$530.00	$ 2,438	98%	1	3	2020	80	3	2081 to 2084	2100	
94614		Sunbury- Battersea Rd	Sunbury	PVC	600	16	2020			$332.00	$530.00	$ 8,480	98%	1	3	2020	80	3	2081 to 2084	2100	
94615		Sunbury- Battersea Rd	Sunbury	PVC	600	21.5	2020			$332.00	$530.00	$ 11,395	98%	1	3	2020	80	3	2081 to 2084	2100	
94602		Sunbury- Battersea Rd	Sunbury	PVC	300	90.7	2020			$291.00	$350.00	$ 31,745	98%	1	2	2020	80	2	2081 to 2084	2100	
94604		Sunbury- Battersea Rd	Sunbury	PVC	300	7.7	2020			$291.00	$350.00	$ 2,695	98%	1	2	2020	80	2	2081 to 2084	2100	
94606		Sunbury- Battersea Rd	Sunbury	PVC	300	9.97	2020			$291.00	$350.00	$ 3,490	98%	1	2	2020	80	2	2081 to 2084	2100	
94608		Sunbury- Battersea Rd	Sunbury	PVC	300	9.18	2020			$291.00	$350.00	$ 3,213	98%	1	2	2020	80	2	2081 to 2084	2100	
94609		Sunbury- Battersea Rd	Sunbury	PVC	300	58.62	2020			$291.00	$350.00	$ 20,517	98%	1	2	2020	80	2	2081 to 2084	2100	
94610		Sunbury- Battersea Rd	Sunbury	PVC	300	8.96	2020			$291.00	$350.00	$ 3,136	98%	1	2	2020	80	2	2081 to 2084	2100	
94611		Sunbury- Battersea Rd	Sunbury	PVC	300	5.81	2020			$291.00	$350.00	$ 2,034	98%	1	2	2020	80	2	2081 to 2084	2100	
94612		Sunbury- Battersea Rd	Sunbury	PVC	300	5.81	2020			$291.00	$350.00	$ 2,034	98%	1	2	2020	80	2	2081 to 2084	2100	
94617		Sunbury- Battersea Rd	Sunbury	PVC	300	12.4	2020			$291.00	$350.00	$ 4,340	98%	1	2	2020	80	2	2081 to 2084	2100	
94618		Sunbury- Battersea Rd	Sunbury	PVC	300	12.6	2020			$291.00	$350.00	$ 4,410	98%	1	2	2020	80	2	2081 to 2084	2100	
94620		Sunbury- Battersea Rd	Sunbury	PVC	300	3	2020			$291.00	$350.00	$ 1,050	98%	1	2	2020	80	2	2081 to 2084	2100	
94605		Sunbury- Battersea Rd	Sunbury	PVC	375	73.67	2020			$295.00	$420.00	$ 30,941	98%	1	2	2020	80	2	2081 to 2084	2100	
94607		Sunbury- Battersea Rd	Sunbury	PVC	375	65.46	2020			$295.00	$420.00	$ 27,493	98%	1	2	2020	80	2	2081 to 2084	2100	
94621		Sunbury- Battersea Rd	Sunbury	HDPE	200	50	2020			$291.00	$320.00	$ 16,000	98%	1	1	2020	80	1	2084	2100	
PIPES TOTAL	302					10.7	km														
STRUCTURES																					
90502		Hartington- Road 38	Hartington	MH	1200		1973			$4,000.00	$6,200.00	$ 6,200.00	40%	3	3	1973	80	9	based on life cycle	2053	
90506		Hartington- Road 38	Hartington	MH	1200		1973			$4,000.00	$6,200.00	$ 6,200.00	40%	3	3	1973	80	9	based on life cycle	2053	
90503		Hartington- Road 38	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90504		Hartington- Road 38	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90505		Hartington- Road 38	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90507		Hartington- Road 38	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90508		Hartington- Road 38	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90509		Hartington- Road 38	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90510		Hartington- Road 38	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90514		Hartington- Holleford Rd	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90515		Hartington- Holleford Rd	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90516		Hartington- Holleford Rd	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
90517		Hartington- Boyce Rd	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90518		Hartington- Boyce Rd	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90519		Hartington- Boyce Rd	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90520		Hartington- Boyce Rd	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90521		Hartington- Boyce Rd	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90522		Hartington- Boyce Rd	Hartington	CB	600 x 600		1973			$2,200.00	$3,500.00	$ 3,500.00	40%	3	1	1973	80	3	based on life cycle	2053	
90500		Hartington- Boyce Rd	Hartington	DI	600 x 600		1973			$3,500.00	$5,400.00	$ 5,400.00	40%	3	1	1973	80	3	based on life cycle	2053	
90501		Hartington- Boyce Rd	Hartington	DI	600 x 600		1973			$3,500.00	$5,400.00	$ 5,400.00	40%	3	1	1973	80	3	based on life cycle	2053	
90511		Hartington- Road 38	Hartington	DI	600 x 600		1973			$3,500.00	$5,400.00	$ 5,400.00	40%	3	1	1973	80	3	based on life cycle	2053	
90512		Hartington- Holleford Rd	Hartington	DI	600 x 600		1973			$3,500.00	$5,400.00	$ 5,400.00	40%	3	1	1973	80	3	based on life cycle	2053	
90513		Hartington- Holleford Rd	Hartington	DI	600 x 600		1973			$3,500.00	$5,400.00	$ 5,400.00	40%	3	1	1973	80	3	based on life cycle	2053	
90201		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90204		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90206		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90210		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90216		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90218		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90224		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90226		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90228		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90229		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90232		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90234		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90238		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90239		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90241		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90242		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90245		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90250		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90254		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90257		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90260		Verona- Road 38	Verona	CBMH	1200		1975			$4,000.00	$6,400.00	$ 6,400.00	43%	3	3	1975	80	9	based on life cycle	2055	
90212		Verona- Water St	Verona	MH	1200		1975			$4,000.00	$6,200.00	$ 6,200.00	43%	3	3	1975	80	9	based on life cycle	2055	
90213		Verona- Water St	Verona	MH	1200		1975			$4,000.00	$6,200.00	$ 6,200.00	43%	3	3	1975	80	9	based on life cycle	2055	
90215		Verona- Road 38	Verona	MH	1200		1975			$4,000.00	$6,200.00	$ 6,200.00	43%	3	3	1975	80	9	based on life cycle	2055	
90236		Verona- Road 38	Verona	MH	1200		1975			$4,000.00	$6,200.00	$ 6,200.00	43%	3	3	1975	80	9	based on life cycle	2055	
90202		Verona- Verona Sands Rd	Verona	DCB	1200 x 600		1975			$3,800.00	$5,800.00	$ 5,800.00	43%	3	2	1975	80	6	based on life cycle	2055	
90207		Verona- Road 38	Verona	DCB	1200 x 600		1975			$3,800.00	$5,800.00	$ 5,800.00	43%	3	2	1975	80	6	based on life cycle	2055	
90209		Verona- Walker St	Verona	DCB	1200 x 600		1975			$3,800.00	$5,800.00	$ 5,800.00	43%	3	2	1975	80	6	based on life cycle	2055	
90214		Verona- Water St	Verona	DCB	1200 x 600		1975			$3,800.00	$5,800.00	$ 5,800.00	43%	3	2	1975	80	6	based on life cycle	2055	
90219		Verona- Genge St	Verona	DCB	1200 x 600		1975			$3,800.00	$5,800.00	$ 5,800.00	43%	3	2	1975	80	6	based on life cycle	2055	
90220		Verona- Genge St	Verona	DCB	1200 x 600		1975			$3,800.00	$5,800.00	$ 5,800.00	43%	3	2	1975	80	6	based on life cycle	2055	
90225		Verona- Road 38	Verona	DCB	1200 x 600		1975			$3,800.00	$5,800.00	$ 5,800.00	43%	3	2	1975	80	6	based on life cycle	2055	
90233		Verona- Road 38	Verona	DCB	1200 x 600		1975			$3,800.00	$5,800.00	$ 5,800.00	43%	3	2	1975	80	6	based on life cycle	2055	
90237		Verona- Road 38	Verona	DCB	1200 x 600		1975			$3,800.00	$5,800.00	$ 5,800.00	43%	3	2	1975	80	6	based on life cycle	2055	
90247		Verona- Road 38	Verona	DCB	1200 x 600		1975			$3,800.00	$5,800.00	$ 5,800.00	43%	3	2	1975	80	6	based on life cycle	2055	
90200		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90203		Verona- Verona Sands Rd	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90205		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90208		Verona- Walker St	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90211		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90217		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90221		Verona- Bank St	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90222		Verona- Bank St	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90223		Verona- Water St	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90227		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90230		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90231		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90235		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90240		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90243		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90244		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90246		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90248		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90249		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90251		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90252		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90253		Carleton St	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90255		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90256		Carleton St	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90258		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90259		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90261		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90262		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90263		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90264		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90265		Verona- Road 38	Verona	CB	600 x 600		1975			$2,200.00	$3,500.00	$ 3,500.00	43%	3	1	1975	80	3	based on life cycle	2055	
90702		Harrowsmith- Kingston Rd	Harrowsmith	MH	1200		1985			$4,000.00	$6,200.00	$ 6,200.00	55%	3	3	1985	80	9	based on life cycle	2065	
90714		Harrowsmith- Road 38	Harrowsmith	MH	1200		1985			$4,000.00	$6,200.00	$ 6,200.00	55%	3	3	1985	80	9	based on life cycle	2065	
90730		Harrowsmith- Harrowsmith Rd	Harrowsmith	MH	1200		1985			$4,000.00	$6,200.00	$ 6,200.00	55%	3	3	1985	80	9	based on life cycle	2065	
90700		Harrowsmith- Kingston Rd	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
90701		Harrowsmith- Kingston Rd	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90703		Harrowsmith- Kingston Rd	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90708		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90709		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90710		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90711		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90712		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90713		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90715		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90716		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90717		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90720		Harrowsmith- Colebrook Rd	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90721		Harrowsmith- Colebrook Rd	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90722		Harrowsmith- Colebrook Rd	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90723		Harrowsmith- Colebrook Rd	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90724		Harrowsmith- Notre Dame St	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90725		Harrowsmith-Notre Dame St	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90726		Harrowsmith-Notre Dame St	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90727		Harrowsmith-Notre Dame St	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90728		Harrowsmith-Maria St	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90729		Harrowsmith-Maria St	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90731		Harrowsmith- Harrowsmith Rd	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90732		Harrowsmith- Harrowsmith Rd	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90733		Harrowsmith- Harrowsmith Rd	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90734		Harrowsmith- Notre Dame St	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90735		Harrowsmith- William St	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90736		Harrowsmith- William St	Harrowsmith	CB	600 x 600		1985			$2,200.00	$3,500.00	$ 3,500.00	55%	3	1	1985	80	3	based on life cycle	2065	
90718		Harrowsmith- Road 38	Harrowsmith	DI	600 x 600		1985			$3,500.00	$5,400.00	$ 5,400.00	55%	3	1	1985	80	3	based on life cycle	2065	
90719		Harrowsmith- Road 38	Harrowsmith	DI	600 x 600		1985			$3,500.00	$5,400.00	$ 5,400.00	55%	3	1	1985	80	3	based on life cycle	2065	
90901		Sydenham- Rutledge Rd	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90903		Sydenham- Rutledge Rd	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90908		Sydenham- Rutledge Rd	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90911		Sydenham- Rutledge Rd	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90921		Sydenham- William St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90925		Sydenham- William St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90929		Sydenham- Brewery St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90932		Sydenham- Brewery St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90935		Sydenham- William St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90936		Sydenham- William St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90944		Sydenham- Amelia St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90947		Sydenham- George St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90948		Sydenham- George St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90954		Sydenham- Sydenham Mill St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90955		Sydenham- Sydenham Mill St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90956		Sydenham- Sydenham Mill St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90958		Sydenham- Sydenham Mill St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90960		Sydenham- Sydenham Mill St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90962		Sydenham- Sydenham Mill St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90963		Sydenham- Sydenham Mill St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90979		Sydenham- Wheatley St	Sydenham	CBMH	1200		1986			$4,000.00	$6,400.00	$ 6,400.00	56%	3	3	1986	80	9	based on life cycle	2066	
90968		Sydenham- Wheatley St	Sydenham	MH	1200		1986			$4,000.00	$6,200.00	$ 6,200.00	56%	3	3	1986	80	9	based on life cycle	2066	
90981		Sydenham- Wheatley St	Sydenham	MH	1200		1986			$4,000.00	$6,200.00	$ 6,200.00	56%	3	3	1986	80	9	based on life cycle	2066	
90922		Sydenham- William St	Sydenham	DCB	1200 x 600		1986			$3,800.00	$5,800.00	$ 5,800.00	56%	3	2	1986	80	6	based on life cycle	2066	
90926		Sydenham- William St	Sydenham	DCB	1200 x 600		1986			$3,800.00	$5,800.00	$ 5,800.00	56%	3	2	1986	80	6	based on life cycle	2066	
90945		Sydenham- Amelia St	Sydenham	DCB	1200 x 600		1986			$3,800.00	$5,800.00	$ 5,800.00	56%	3	2	1986	80	6	based on life cycle	2066	
90946		Sydenham- Amelia St	Sydenham	DCB	1200 x 600		1986			$3,800.00	$5,800.00	$ 5,800.00	56%	3	2	1986	80	6	based on life cycle	2066	
90965		Sydenham- Sydenham Mill St	Sydenham	DCB	1200 x 600		1986			$3,800.00	$5,800.00	$ 5,800.00	56%	3	2	1986	80	6	based on life cycle	2066	
90974		Sydenham- Cross St	Sydenham	DCB	1200 x 600		1986			$3,800.00	$5,800.00	$ 5,800.00	56%	3	2	1986	80	6	based on life cycle	2066	
90998		Sydenahm- George St	Sydenham	DCB	1200 x 600		1986			$3,800.00	$5,800.00	$ 5,800.00	56%	3	2	1986	80	6	based on life cycle	2066	
90997		Sydenahm- George St	Sydenham	DCBMH	1500		1986			$7,500.00	$8,900.00	$ 8,900.00	56%	3	2	1986	80	6	based on life cycle	2066	
90902		Sydenham- Rutledge Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90904		Sydenham- Rutledge Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90907		Sydenham- Rutledge Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90909		Sydenham- Rutledge Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90912		Sydenham- Rutledge Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90914		Sydenham- Rutledge Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90915		Sydenham- Stage Coach Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90916		Sydenham- Stage Coach Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90917		Sydenham- Stage Coach Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90918		Sydenham- Stage Coach Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90919		Sydenham- Rutledge Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90920		Sydenham- Sydenham Church St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90923		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90924		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90927		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90928		Sydenham- Brewery St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90930		Sydenham- Brewery St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90931		Sydenham- Brewery St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90933		Sydenham- Brewery St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90934		Sydenham- Brewery St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90937		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
90938		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90939		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90942		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90943		Sydenham- Amelia St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90949		Sydenham- George St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90950		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90951		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90952		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90953		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90957		Sydenham- Sydenham Mill St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90959		Sydenham- Sydenham Mill St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90961		Sydenham- Sydenham Mill St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90964		Sydenham- Sydenham Mill St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90966		Sydenham- Sydenham Mill St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90967		Sydenham- Sydenham Mill St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90969		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90970		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90971		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90972		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90973		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90975		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90976		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90977		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90978		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90980		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90982		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90983		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90984		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90985		Sydenham- Wheatley St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90993		Sydenham- Point Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90994		Sydenham- Point Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90995		Sydenham- Point Rd	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
91040		Sydenham- William St	Sydenham	CB	600 x 600		1986			$2,200.00	$3,500.00	$ 3,500.00	56%	3	1	1986	80	3	based on life cycle	2066	
90940		Sydenham- William St	Sydenham	DI	600 x 600		1986			$3,500.00	$5,400.00	$ 5,400.00	56%	3	1	1986	80	3	based on life cycle	2066	
90941		Sydenham- William St	Sydenham	DI	600 x 600		1986			$3,500.00	$5,400.00	$ 5,400.00	56%	3	1	1986	80	3	based on life cycle	2066	
90996		Sydenham- Point Rd	Sydenham	DI	600 x 600		1986			$3,500.00	$5,400.00	$ 5,400.00	56%	3	1	1986	80	3	based on life cycle	2066	
91400		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91401		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91402		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91403		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91404		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91405		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91406		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91407		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91409		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91410		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91411		Inverary- Perth Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91412		Inverary- Latimer Rd	Inverary	CBMH	1200		1993			$4,000.00	$6,400.00	$ 6,400.00	65%	2	3	1993	80	6	based on life cycle	2073	
91227		Shales/Opp- Perth Rd	Perth Road Village	CB	600 x 600		1993			$2,200.00	$3,500.00	$ 3,500.00	65%	2	1	1993	80	2	based on life cycle	2073	
91228		Shales/Opp- Shales Rd	Perth Road Village	CB	600 x 600		1993			$2,200.00	$3,500.00	$ 3,500.00	65%	2	1	1993	80	2	based on life cycle	2073	
91229		Shales/Opp- Shales Rd	Perth Road Village	CB	600 x 600		1993			$2,200.00	$3,500.00	$ 3,500.00	65%	2	1	1993	80	2	based on life cycle	2073	
91230		Shales/Opp- Shales Rd	Perth Road Village	CB	600 x 600		1993			$2,200.00	$3,500.00	$ 3,500.00	65%	2	1	1993	80	2	based on life cycle	2073	
91231		Shales/Opp- Opinicon Rd	Perth Road Village	CB	600 x 600		1993			$2,200.00	$3,500.00	$ 3,500.00	65%	2	1	1993	80	2	based on life cycle	2073	
91232		Shales/Opp- Opinicon Rd	Perth Road Village	CB	600 x 600		1993			$2,200.00	$3,500.00	$ 3,500.00	65%	2	1	1993	80	2	based on life cycle	2073	
91413		Inverary- Latimer Rd	Inverary	CB	600 x 600		1993			$2,200.00	$3,500.00	$ 3,500.00	65%	2	1	1993	80	2	based on life cycle	2073	
91414		Inverary- Latimer Rd	Inverary	CB	600 x 600		1993			$2,200.00	$3,500.00	$ 3,500.00	65%	2	1	1993	80	2	based on life cycle	2073	
91408		Inverary- Perth Rd	Inverary	DI	600 x 600		1993			$3,500.00	$5,400.00	$ 5,400.00	65%	2	1	1993	80	2	based on life cycle	2073	
91817		Battersea- Battersea Rd	Battersea	CBMH	1200		2004			$4,000.00	$6,400.00	$ 6,400.00	79%	2	3	2004	80	6	based on life cycle	2084	
91818		Battersea- Battersea Rd	Battersea	CBMH	1200		2004			$4,000.00	$6,400.00	$ 6,400.00	79%	2	3	2004	80	6	based on life cycle	2084	
91821		Battersea- Battersea Rd	Battersea	CBMH	1200		2004			$4,000.00	$6,400.00	$ 6,400.00	79%	2	3	2004	80	6	based on life cycle	2084	
91822		Battersea- Battersea Rd	Battersea	CBMH	1200		2004			$4,000.00	$6,400.00	$ 6,400.00	79%	2	3	2004	80	6	based on life cycle	2084	
91800		Battersea- Battersea Rd	Battersea	DCB	1200 x 600		2004			$3,800.00	$5,800.00	$ 5,800.00	79%	2	2	2004	80	4	based on life cycle	2084	
91801		Battersea- Battersea Rd	Battersea	DCB	1200 x 600		2004			$3,800.00	$5,800.00	$ 5,800.00	79%	2	2	2004	80	4	based on life cycle	2084	
91802		Battersea- Battersea Rd	Battersea	DCB	1200 x 600		2004			$3,800.00	$5,800.00	$ 5,800.00	79%	2	2	2004	80	4	based on life cycle	2084	
91803		Battersea- Battersea Rd	Battersea	DCB	1200 x 600		2004			$3,800.00	$5,800.00	$ 5,800.00	79%	2	2	2004	80	4	based on life cycle	2084	
91810		Battersea- Battersea Rd	Battersea	DCB	1200 x 600		2004			$3,800.00	$5,800.00	$ 5,800.00	79%	2	2	2004	80	4	based on life cycle	2084	
91811		Battersea- Battersea Rd	Battersea	DCB	1200 x 600		2004			$3,800.00	$5,800.00	$ 5,800.00	79%	2	2	2004	80	4	based on life cycle	2084	
91812		Battersea- Battersea Rd	Battersea	DCB	1200 x 600		2004			$3,800.00	$5,800.00	$ 5,800.00	79%	2	2	2004	80	4	based on life cycle	2084	
91804		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91805		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91806		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91807		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91808		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91809		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91814		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91815		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91816		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91819		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91820		Battersea- Battersea Rd	Battersea	CB	600 x 600		2004			$2,200.00	$3,500.00	$ 3,500.00	79%	2	1	2004	80	2	based on life cycle	2084	
91813		Battersea- Battersea Rd	Battersea	DI	600 x 600		2004			$3,500.00	$5,400.00	$ 5,400.00	79%	2	1	2004	80	2	based on life cycle	2084	
91823		Battersea- Battersea Water St	Battersea	CBMH	1200		2011			$4,000.00	$6,400.00	$ 6,400.00	88%	1	3	2011	80	3	based on life cycle	2091	

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
91824		Battersea- Battersea Water St	Battersea	CBMH	1200		2011			$4,000.00	$6,400.00	$ 6,400.00	88%	1	3	2011	80	3	based on life cycle	2091	
91825		Battersea- Battersea Water St	Battersea	CB	600 x 600		2011			$2,200.00	$3,500.00	$ 3,500.00	88%	1	1	2011	80	1	based on life cycle	2091	
91826		Battersea- Battersea Water St	Battersea	CB	600 x 600		2011			$2,200.00	$3,500.00	$ 3,500.00	88%	1	1	2011	80	1	based on life cycle	2091	
91836		Battersea-Water St	Battersea	DI	600 x 600		2011			$3,500.00	$5,400.00	$ 5,400.00	88%	1	1	2011	80	1	based on life cycle	2091	
91201		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91204		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91207		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91209		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91210		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91211		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91212		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91213		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91215		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91217		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91219		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91222		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91223		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91224		Perth Rd- Perth Rd Cres	Perth Road Village	CBMH	1200		2012			$4,000.00	$6,400.00	$ 6,400.00	89%	1	3	2012	80	3	based on life cycle	2092	
91205		Perth Rd- Perth Rd Cres	Perth Road Village	MH	1200		2012			$4,000.00	$6,200.00	$ 6,200.00	89%	1	3	2012	80	3	based on life cycle	2092	
91216		Perth Rd- Perth Rd Cres	Perth Road Village	MH	1200		2012			$4,000.00	$6,200.00	$ 6,200.00	89%	1	3	2012	80	3	based on life cycle	2092	
90905		Sydenham- Rutledge Rd	Sydenham	DCB	1200 x 600		2012			$3,800.00	$5,800.00	$ 5,800.00	89%	1	2	2012	80	2	based on life cycle	2092	
91206		Perth Rd- Perth Rd Cres	Perth Road Village	DCBMH	1500		2012			$7,500.00	$8,900.00	$ 8,900.00	89%	1	2	2012	80	2	based on life cycle	2092	
91218		Perth Rd- Perth Rd Cres	Perth Road Village	DCBMH	1500		2012			$7,500.00	$8,900.00	$ 8,900.00	89%	1	2	2012	80	2	based on life cycle	2092	
91200		Perth Rd- Perth Rd Cres	Perth Road Village	CB	600 x 600		2012			$2,200.00	$3,500.00	$ 3,500.00	89%	1	1	2012	80	1	based on life cycle	2092	
91203		Perth Rd- Perth Rd Cres	Perth Road Village	CB	600 x 600		2012			$2,200.00	$3,500.00	$ 3,500.00	89%	1	1	2012	80	1	based on life cycle	2092	
90906		Sydenham- Rutledge Rd	Sydenham	DI	600 x 600		2012			$3,500.00	$5,400.00	$ 5,400.00	89%	1	1	2012	80	1	based on life cycle	2092	
91202		Perth Rd- Perth Rd Cres	Perth Road Village	DI	600 x 600		2012			$3,500.00	$5,400.00	$ 5,400.00	89%	1	1	2012	80	1	based on life cycle	2092	
91208		Perth Rd- Perth Rd Cres	Perth Road Village	DI	600 x 600		2012			$3,500.00	$5,400.00	$ 5,400.00	89%	1	1	2012	80	1	based on life cycle	2092	
91214		Perth Rd- Perth Rd Cres	Perth Road Village	DI	600 x 600		2012			$3,500.00	$5,400.00	$ 5,400.00	89%	1	1	2012	80	1	based on life cycle	2092	
91220		Perth Rd- Perth Rd Cres	Perth Road Village	DI	600 x 600		2012			$3,500.00	$5,400.00	$ 5,400.00	89%	1	1	2012	80	1	based on life cycle	2092	
91221		Perth Rd- Perth Rd Cres	Perth Road Village	DI	600 x 600		2012			$3,500.00	$5,400.00	$ 5,400.00	89%	1	1	2012	80	1	based on life cycle	2092	
91225		Perth Rd- Perth Rd Cres	Perth Road Village	DI	600 x 600		2012			$3,500.00	$5,400.00	$ 5,400.00	89%	1	1	2012	80	1	based on life cycle	2092	
91226		Perth Rd- Perth Rd Cres	Perth Road Village	DI	600 x 600		2012			$3,500.00	$5,400.00	$ 5,400.00	89%	1	1	2012	80	1	based on life cycle	2092	
91827		Private Yard	Battersea	CBMH	1200		2013			$4,000.00	$6,400.00	$ 6,400.00	90%	1	3	2013	80	3	based on life cycle	2093	
91828		Battersea- Wellington St	Battersea	CBMH	1200		2013			$4,000.00	$6,400.00	$ 6,400.00	90%	1	3	2013	80	3	based on life cycle	2093	
91832		Battersea- Wellington St	Battersea	CBMH	1200		2013			$4,000.00	$6,400.00	$ 6,400.00	90%	1	3	2013	80	3	based on life cycle	2093	
91834		Battersea- Wellington St	Battersea	DCB	1200 x 600		2013			$3,800.00	$5,800.00	$ 5,800.00	90%	1	2	2013	80	2	based on life cycle	2093	
91829		Battersea- Wellington St	Battersea	CB	600 x 600		2013			$2,200.00	$3,500.00	$ 3,500.00	90%	1	1	2013	80	1	based on life cycle	2093	
91830		Private Yard	Battersea	CB	600 x 600		2013			$2,200.00	$3,500.00	$ 3,500.00	90%	1	1	2013	80	1	based on life cycle	2093	
91831		Private Yard	Battersea	CB	600 x 600		2013			$2,200.00	$3,500.00	$ 3,500.00	90%	1	1	2013	80	1	based on life cycle	2093	
91835		Battersea- Wellington St	Battersea	CB	600 x 600		2013			$2,200.00	$3,500.00	$ 3,500.00	90%	1	1	2013	80	1	based on life cycle	2093	
91833		Battersea- Battersea Cross St	Battersea	DI	600 x 600		2013			$3,500.00	$5,400.00	$ 5,400.00	90%	1	1	2013	80	1	based on life cycle	2093	
90986		Sydenahm- Rutledge Rd	Sydenham	CBMH	1500		2014			$4,000.00	$6,400.00	$ 6,400.00	91%	1	3	2014	80	3	based on life cycle	2094	
90988		Sydenahm- Rutledge Rd	Sydenham	CBMH	1200		2014			$4,000.00	$6,400.00	$ 6,400.00	91%	1	3	2014	80	3	based on life cycle	2094	
90900		Sydenham- Rutledge Rd	Sydenham	MH	1200		2014			$4,000.00	$6,200.00	$ 6,200.00	91%	1	3	2014	80	3	based on life cycle	2094	
90910		Sydenham- Rutledge Rd	Sydenham	MH	1200		2014			$4,000.00	$6,200.00	$ 6,200.00	91%	1	3	2014	80	3	based on life cycle	2094	
90913		Sydenham- Rutledge Rd	Sydenham	DCB	1200 x 600		2014			$3,800.00	$5,800.00	$ 5,800.00	91%	1	2	2014	80	2	based on life cycle	2094	
90987		Sydenahm- Rutledge Rd	Sydenham	CB	600 x 600		2014			$2,200.00	$3,500.00	$ 3,500.00	91%	1	1	2014	80	1	based on life cycle	2094	
90989		Sydenahm- Rutledge Rd	Sydenham	CB	600 x 600		2014			$2,200.00	$3,500.00	$ 3,500.00	91%	1	1	2014	80	1	based on life cycle	2094	
90990		Sydenahm- Rutledge Rd	Sydenham	CB	600 x 600		2014			$2,200.00	$3,500.00	$ 3,500.00	91%	1	1	2014	80	1	based on life cycle	2094	
90991		Sydenahm- Rutledge Rd	Sydenham	CB	600 x 600		2014			$2,200.00	$3,500.00	$ 3,500.00	91%	1	1	2014	80	1	based on life cycle	2094	
90992		Sydenahm- Rutledge Rd	Sydenham	CB	600 x 600		2014			$2,200.00	$3,500.00	$ 3,500.00	91%	1	1	2014	80	1	based on life cycle	2094	
90003		Bellrock- Main St	Bellrock	CBMH	1200		2015			$4,000.00	$6,400.00	$ 6,400.00	93%	1	3	2015	80	3	based on life cycle	2095	
90006		Bellrock- Main St	Bellrock	CBMH	1200		2015			$4,000.00	$6,400.00	$ 6,400.00	93%	1	3	2015	80	3	based on life cycle	2095	
90011		Bellrock- Main St	Bellrock	MH	1200		2015			$4,000.00	$6,200.00	$ 6,200.00	93%	1	3	2015	80	3	based on life cycle	2095	
90001		Bellrock- Main St	Bellrock	DCB	1200 x 600		2015			$3,800.00	$5,800.00	$ 5,800.00	93%	1	2	2015	80	2	based on life cycle	2095	
90002		Bellrock- Main St	Bellrock	DCB	1200 x 600		2015			$3,800.00	$5,800.00	$ 5,800.00	93%	1	2	2015	80	2	based on life cycle	2095	
90008		Bellrock- Main St	Bellrock	DCB	1200 x 600		2015			$3,800.00	$5,800.00	$ 5,800.00	93%	1	2	2015	80	2	based on life cycle	2095	
90009		Bellrock- Main St	Bellrock	DCBMH	1800		2015			$7,500.00	$8,900.00	$ 8,900.00	93%	1	2	2015	80	2	based on life cycle	2095	
90004		Bellrock- Main St	Bellrock	CB	600 x 600		2015			$2,200.00	$3,500.00	$ 3,500.00	93%	1	1	2015	80	1	based on life cycle	2095	
90005		Bellrock- Main St	Bellrock	CB	600 x 600		2015			$2,200.00	$3,500.00	$ 3,500.00	93%	1	1	2015	80	1	based on life cycle	2095	
90012		Bellrock- Mill St	Bellrock	CB	600 x 600		2015			$2,200.00	$3,500.00	$ 3,500.00	93%	1	1	2015	80	1	based on life cycle	2095	
90013		Bellrock- Mill St	Bellrock	CB	600 x 600		2015			$2,200.00	$3,500.00	$ 3,500.00	93%	1	1	2015	80	1	based on life cycle	2095	
90014		Bellrock- Mill St	Bellrock	CB	600 x 600		2015			$2,200.00	$3,500.00	$ 3,500.00	93%	1	1	2015	80	1	based on life cycle	2095	
90015		Bellrock- Mill St	Bellrock	CB	600 x 600		2015			$2,200.00	$3,500.00	$ 3,500.00	93%	1	1	2015	80	1	based on life cycle	2095	
90016		Bellrock- Leveque Rd	Bellrock	CB	600 x 600		2015			$2,200.00	$3,500.00	$ 3,500.00	93%	1	1	2015	80	1	based on life cycle	2095	
90017		Bellrock- Mill St	Bellrock	CB	600 x 600		2015			$2,200.00	$3,500.00	$ 3,500.00	93%	1	1	2015	80	1	based on life cycle	2095	
90018		Bellrock- Mill St	Bellrock	CB	600 x 600		2015			$2,200.00	$3,500.00	$ 3,500.00	93%	1	1	2015	80	1	based on life cycle	2095	
90010		Bellrock- Main St	Bellrock	DI	600 x 600		2015			$3,500.00	$5,400.00	$ 5,400.00	93%	1	1	2015	80	1	based on life cycle	2095	
90705		Harrowsmith- Road 38	Harrowsmith	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
90744		Harrowsmith- Robinson Rd	Harrowsmith	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
90749		Harrowsmith- Road 38	Harrowsmith	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
90999		Sydenham- Portland Ave	Sydenham	CBMH	1800		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
91012		Sydenham- Bedford Rd	Sydenham	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
91013		Sydenham- Bedford Rd	Sydenham	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
91015		Sydenham- Bedford Rd	Sydenham	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
91017		Sydenham- Bedford Rd	Sydenham	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
91019		Sydenham- Bedford Rd	Sydenham	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
91021		Sydenham- Bedford Rd	Sydenham	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
91023		Sydenham- Bedford Rd	Sydenham	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
91028		Sydenham- Bedford Rd	Sydenham	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
91029		Sydenham- Bedford Rd	Sydenham	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
91032		Sydenham- Portland Ave	Sydenham	CBMH	1200		2018			$4,000.00	$6,400.00	$ 6,400.00	96%	1	3	2018	80	3	based on life cycle	2098	
91001		Sydenham- George St	Sydenham	MH	1200		2018			$4,000.00	$6,200.00	$ 6,200.00	96%	1	3	2018	80	3	based on life cycle	2098	
91035		Sydenham- Portland Ave	Sydenham	MH	1200		2018			$4,000.00	$6,200.00	$ 6,200.00	96%	1	3	2018	80	3	based on life cycle	2098	
91038		Sydenham- Portland Ave	Sydenham	MH	1200		2018			$4,000.00	$6,200.00	$ 6,200.00	96%	1	3	2018	80	3	based on life cycle	2098	
91039		Sydenham- Portland Ave	Sydenham	MH	1800		2018			$4,000.00	$6,200.00	$ 6,200.00	96%	1	3	2018	80	3	based on life cycle	2098	
90704		Harrowsmith- Wilton Rd	Harrowsmith	DCB	1200 x 600		2018			$3,800.00	$5,800.00	$ 5,800.00	96%	1	2	2018	80	2	based on life cycle	2098	
90737		Harrowsmith- Road 38	Harrowsmith	DCB	1200 x 600		2018			$3,800.00	$5,800.00	$ 5,800.00	96%	1	2	2018	80	2	based on life cycle	2098	
90741		Harrowsmith- Road 38	Harrowsmith	DCB	1200 x 600		2018			$3,800.00	$5,800.00	$ 5,800.00	96%	1	2	2018	80	2	based on life cycle	2098	
90748		Harrowsmith- Road 38	Harrowsmith	DCB	1200 x 600		2018			$3,800.00	$5,800.00	$ 5,800.00	96%	1	2	2018	80	2	based on life cycle	2098	
90742		Harrowsmith- Wilton Rd	Harrowsmith	DCBMH	1200 x 600		2018			$7,500.00	$8,900.00	$ 8,900.00	96%	1	2	2018	80	2	based on life cycle	2098	
91030		Sydenham- Bedford Rd	Sydenham	DCBMH	1800		2018			$7,500.00	$8,900.00	$ 8,900.00	96%	1	2	2018	80	2	based on life cycle	2098	
90706		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
90707		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
90738		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
90739		Harrowsmith- Road 38	Harrowsmith	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
90743		Harrowsmith- Robinson Rd	Harrowsmith	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
90745		Harrowsmith- Robinson Rd	Harrowsmith	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
90746		Harrowsmith- Wilton Rd	Harrowsmith	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
90747		Harrowsmith- Wilton Rd	Harrowsmith	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91000		Sydenham- George St	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91003		Sydenham- Beford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91004		Sydenham- Portland Ave	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91005		Sydenham- Portland Ave	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91007		Sydenham- Bedford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91008		Sydenham- Bedford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91009		Sydenham- Bedford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91014		Sydenham- Bedford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91016		Sydenham- Bedford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91020		Sydenham- Bedford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91024		Sydenham- Bedford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91025		Sydenham- Bedford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91026		Sydenham- Bedford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91027		Sydenham- Bedford Rd	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91033		Sydenham- Portland Ave	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91034		Sydenham- Portland Ave	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91036		Sydenham- Portland Ave	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
91037		Sydenham- Portland Ave	Sydenham	CB	600 x 600		2018			$2,200.00	$3,500.00	$ 3,500.00	96%	1	1	2018	80	1	based on life cycle	2098	
90740		Harrowsmith- Road 38	Harrowsmith	DI	600 x 600		2018			$3,500.00	$5,400.00	$ 5,400.00	96%	1	1	2018	80	1	based on life cycle	2098	
91006		Sydenham- Bedford Rd	Sydenham	DI	600 x 600		2018			$3,500.00	$5,400.00	$ 5,400.00	96%	1	1	2018	80	1	based on life cycle	2098	
91010		Sydenham- Bedford Rd	Sydenham	DI	600 x 600		2018			$3,500.00	$5,400.00	$ 5,400.00	96%	1	1	2018	80	1	based on life cycle	2098	
91011		Sydenham- Bedford Rd	Sydenham	DI	600 x 600		2018			$3,500.00	$5,400.00	$ 5,400.00	96%	1	1	2018	80	1	based on life cycle	2098	
91018		Sydenham- Bedford Rd	Sydenham	DI	600 x 600		2018			$3,500.00	$5,400.00	$ 5,400.00	96%	1	1	2018	80	1	based on life cycle	2098	
91022		Sydenham- Bedford Rd	Sydenham	DI	600 x 600		2018			$3,500.00	$5,400.00	$ 5,400.00	96%	1	1	2018	80	1	based on life cycle	2098	
91608		Sunbury- Battersea Rd	Sunbury	CBMH	1200		2020			$4,000.00	$6,400.00	$ 6,400.00	99%	1	3	2020	80	3	based on life cycle	2100	
91613		Sunbury- Battersea Rd	Sunbury	CBMH	1200		2020			$4,000.00	$6,400.00	$ 6,400.00	99%	1	3	2020	80	3	based on life cycle	2100	
91614		Sunbury- Battersea Rd	Sunbury	CBMH	1200		2020			$4,000.00	$6,400.00	$ 6,400.00	99%	1	3	2020	80	3	based on life cycle	2100	
91615		Sunbury- Battersea Rd	Sunbury	CBMH	1200		2020			$4,000.00	$6,400.00	$ 6,400.00	99%	1	3	2020	80	3	based on life cycle	2100	
91600		Sunbury- Battersea Rd	Sunbury	DCB	1200 x 600		2020			$3,800.00	$5,800.00	$ 5,800.00	99%	1	2	2020	80	2	based on life cycle	2100	
91603		Sunbury- Battersea Rd	Sunbury	DCB	1200 x 600		2020			$3,800.00	$5,800.00	$ 5,800.00	99%	1	2	2020	80	2	based on life cycle	2100	
91605		Sunbury- Battersea Rd	Sunbury	DCB	1200 x 600		2020			$3,800.00	$5,800.00	$ 5,800.00	99%	1	2	2020	80	2	based on life cycle	2100	
91607		Sunbury- Battersea Rd	Sunbury	DCB	1200 x 600		2020			$3,800.00	$5,800.00	$ 5,800.00	99%	1	2	2020	80	2	based on life cycle	2100	
91612		Sunbury- Battersea Rd	Sunbury	DCB	1200 x 600		2020			$3,800.00	$5,800.00	$ 5,800.00	99%	1	2	2020	80	2	based on life cycle	2100	
91616		Sunbury- Battersea Rd	Sunbury	DCB	1200 x 600		2020			$3,800.00	$5,800.00	$ 5,800.00	99%	1	2	2020	80	2	based on life cycle	2100	
91601		Sunbury- Battersea Rd	Sunbury	DCBMH	1500		2020			$7,500.00	$8,900.00	$ 8,900.00	99%	1	2	2020	80	2	based on life cycle	2100	
91602		Sunbury- Battersea Rd	Sunbury	DCBMH	1500		2020			$7,500.00	$8,900.00	$ 8,900.00	99%	1	2	2020	80	2	based on life cycle	2100	
91604		Sunbury- Battersea Rd	Sunbury	DCBMH	1500		2020			$7,500.00	$8,900.00	$ 8,900.00	99%	1	2	2020	80	2	based on life cycle	2100	
91606		Sunbury- Battersea Rd	Sunbury	DCBMH	1500		2020			$7,500.00	$8,900.00	$ 8,900.00	99%	1	2	2020	80	2	based on life cycle	2100	
91611		Sunbury- Battersea Rd	Sunbury	DCBMH	1500		2020			$7,500.00	$8,900.00	$ 8,900.00	99%	1	2	2020	80	2	based on life cycle	2100	
91609		Sunbury- Battersea Rd	Sunbury	CB	600 x 600		2020			$2,200.00	$3,500.00	$ 3,500.00	99%	1	1	2020	80	1	based on life cycle	2100	
91617		Sunbury- Battersea Rd	Sunbury	CB	600 x 600		2020			$2,200.00	$3,500.00	$ 3,500.00	99%	1	1	2020	80	1	based on life cycle	2100	
91618		Sunbury- Battersea Rd	Sunbury	CB	600 x 600		2020			$2,200.00	$3,500.00	$ 3,500.00	99%	1	1	2020	80	1	based on life cycle	2100	
STORMWATER MANAGEMENT ASSETS																					
90000		Bellrock- Main St	Bellrock	Stormceptor	1800		2015				$40,345.00	$ 55,000.00	88%	1	5	2015	50	5	based on life cycle	2065	2115
90007		Bellrock- Main St	Bellrock	Stormceptor	1500		2015				$37,750.00	$ 50,000.00	88%	1	5	2015	50	5	based on life cycle	2065	2115
91002		Sydenham- Portland Ave	Sydenham	Stormceptor	2400		2018				$43,367.00	$ 65,000.00	94%	1	5	2018	50	5	based on life cycle	2068	2118
91610		Sunbury- Battersea Rd	Sunbury	Stormceptor	1800		2020				$32,283.00	$ 55,000.00	98%	1	5	2020	50	5	based on life cycle	2070	2120
CULVERTS <3m																					
64009		Culvert #9 (Devil Lake Rd)					1960					$ 40,321.63						6			
64004		Latimer Road Culvert					1960					$ 154,730.14						3			
64002		Moreland-Dixon Culvert					1970					$ 216,359.95						8			
63030		Bear Creek Culvert					2009					$ 435,998.07						8			
63240		Bunker Hill Road					2012					$ 100,804.07						3			
63260		Green Bay Road Culvert					2013					$ 138,229.97						3			
64010		Culvert #10 (James Wilson)					2013					$ 67,202.71						3			
63100		Otter Lake Culvert					2016					$ 380,269.00						3			
63420		Burnt Hills Rd. Boss Marsh Culvert					2019					$ 414,362.08						3			
64008		Hinchenbrooke Road N Culvert					2020					$ 190,918.00						3			
63430		Stafford Lane Culvert					2021					$ 321,243.61						3			

PIPE/STRUCTURE ID	SEGMENT ID	LOCATION	VILLAGE	MATERIAL	DIAMETER (mm)	LENGTH (m)	Construction Year	Structural Grade	Operational Grade	Unit Cost (2019)	Unit Cost (Replacement) 2022	Replacement Value Estimate	% Useful Life Remaining (based on age)	Condition/Probability of Failure (1 = good/not likely, 5 = poor/likely)	Consequence of Failure (1 = low, 5 = high)	Inst Year	Useful Life	Risk	Timing of First Replacement-Based on Risk	Timing of First Replacement Based on Risk, then lifecycle	Timing of Second Replacement
64005		North Shore Road					2022					$ 304,829.00						3			
64001		Perth Road Culvert					2014					$ 189,750.00						4			
64007		Cul #7 (Westport Rd at Wolfe Lk)					2016					$ 236,029.03						4			
PIPES AND STRUCTURES TOTAL												$ 10,194,159									

Township of South Frontenac

Staff Report

To:	Council
Prepared by:	Development Services Department
Date of Meeting:	December 19, 2023
Subject:	**Dedication of 0.3 metre Reserves Abutting Orser Street, Subdivision Plan 1548**

Summary

This report recommends that Council pass a by-law dedicating portions of the 0.3 metre reserve along Orser Street, Subdivision Plan 1548 to provide several landowners with access to the lane.

Recommendation

THAT By-law 2023-100 to dedicate portions of the 0.3 metre reserve along Orser Street, Plan 1548, legally described therein, be given first and second reading.

THAT By-law 2023-100 be given third reading, signed and sealed.

Background

Everett Lane is a privately maintained lane that is located mostly on a Township-owned parcel of land shown as Orser Street on Subdivision Plan 1584, (Attachment #1). The lands were created through a 1971 plan of subdivision (Plan 1584) on Knowlton Lake. A 0.3 metre reserve was placed on either side of Orser Street, Plan 1584 so that properties that were not part of the subdivision could not be accessed over the lane.

The former Loughborough Township Council passed a motion in 1982 and signed a transfer agreement which gave the 0.3 metre reserves back to the developer, Everett Orser, so that the lane could be used to access his non-subdivision properties.

According to land title documents, the 0.3 metre reserves that were transferred have individual property identification numbers (PINs). The 0.3 metre reserves were not merged on title with the abutting properties. This means that they are separately conveyable parcels. It also means that there are several privately owned properties along Everett Lane that are impeded by the reserves (i.e. they do not have direct frontage on the lane (Orser Street, Plan 1584)). Some of these private properties have been developed. A map showing the 0.3 metre reserves is Attachment #2 to this report.

The current situation was discovered through the review of rezoning application Z-21-29. Council will recall the application is to permit a dwelling on a non-waterfront lot of record on Everett Lane.

The Estate of Everett Orser proposed to transfer three 0.3 metre reserves (36274-0046, 36274-0182 and 36274-0425) back to the Township, and to have them act in the same capacity as Orser Street, Plan 1584. The Estate would facilitate the transfer at their expense.

Council agreed on December 6, 2022, to accept the three 0.3 metre reserves. The land transfer was completed on November 6, 2023.

Discussion

The Township solicitor was consulted on this matter to confirm the appropriate course of action. The solicitor's opinion is that PIN 36274-0046 is a whole block in a plan of subdivision (Plan1584). The reserve needs to be dedicated through a by-law to provide public access over Orser Street, Plan 1584. Following the dedication of the 0.3 metre reserves, they will act in the same capacity as Orser Street, Plan 1584. This will provide frontage and direct access for all parcels along Orser Street, Plan 1584 including the property subject to rezoning application Z-21-29. It will also provide direct access to several parcels that lie beyond the lane (e.g. those on McConville Lane).

The 0.3 metre reserves with PINs 36274-0046, 36274-0182 and 36274-0425 were transferred to the Township. Staff determined that it would be appropriate to dedicate all three 0.3 metre reserves, in their entirety at this time. Doing so would clear the title of a dozen private properties impeded by the reserve. Including the 0.3 metre reserve into Orser Street, Plan 1584 may also facilitate development of lots of record that have not been developed, subject to any required *Planning Act* approvals.

The Township solicitor had also determined that PIN 36274-0424, which is a 0.3 metre reserve, was transferred to the Township years ago to provide access to Bob Sands Lane but was never dedicated. This PIN is also included in the proposed by-law to provide access to properties on Bob Sands Lane.

Financial Implications

All costs associated with transferring the 0.3 metre reserves to the Township were borne by the Estate of Everett Orser.

Relationship to Strategic Plans

☒ Not applicable to this report.

☐ This initiative is supported by the following priorities of the 2019-2022 Strategic Plan.

- Priority: Choose an item.
- Action Item (if applicable): N/A

Climate Considerations

☒ Not applicable to this report.

☐ This initiative supports climate change mitigation/adaption efforts in South Frontenac; and/or impacts the Township's resilience to climate change.

Notice/Consultation

The Township solicitor was consulted on this matter to confirm the appropriate course of action.

No statutory notice/consultation is required to dedicate the 0.3 metre reserves as part of Everett Lane.

Public Services did not have concerns with transferring the 0.3 metre reserve to the Township.

Planning Department staff were consulted when preparing the report and the By-law.

Attachments

1. Plan of Subdivision 1584
2. Map showing the sections of 0.3 metre reserve
3. By-law 2023-100

Approvals

Submitted By:

Michelle Hannah
Deputy Clerk

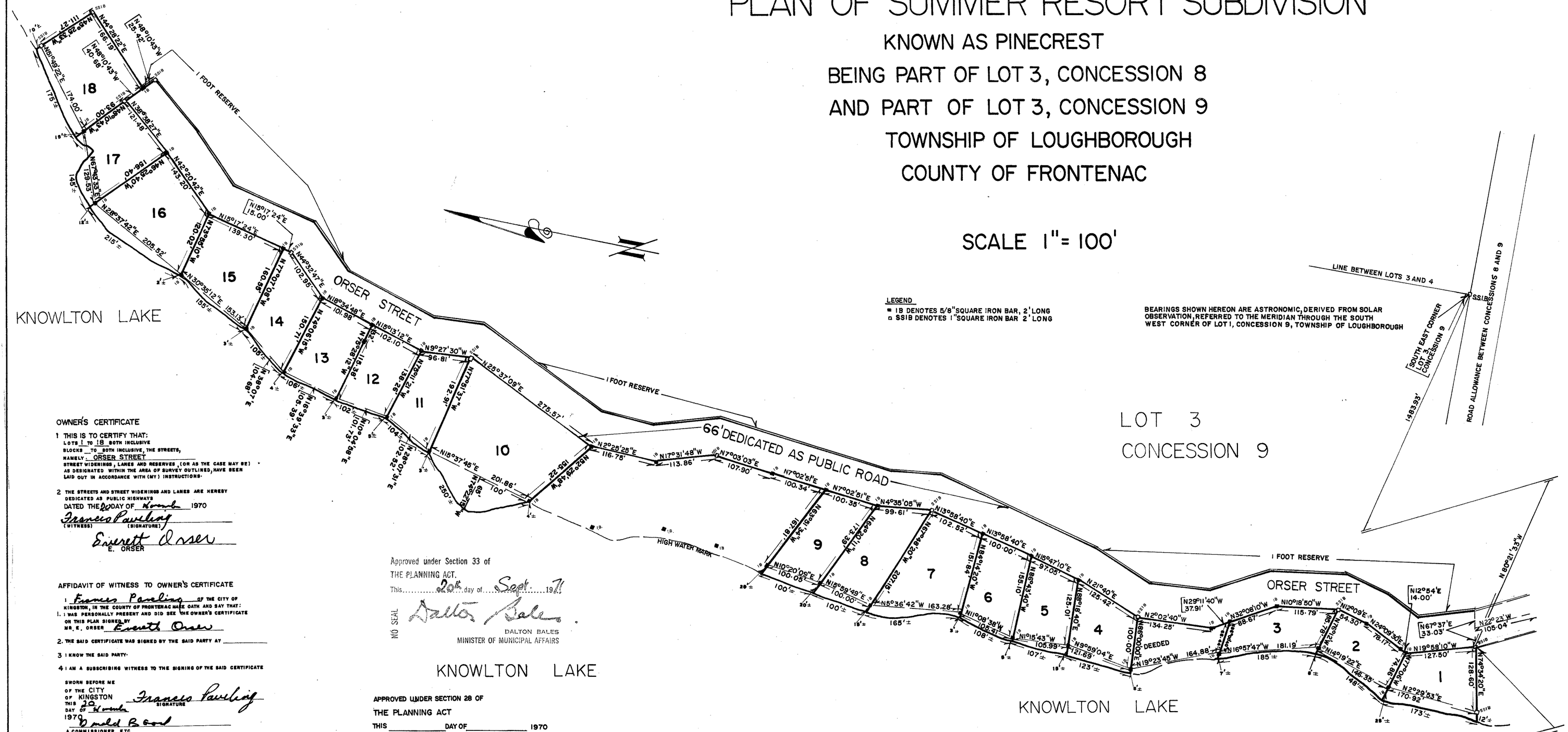
Approved By:

Louise Fragnito, CPA, CGA
Chief Administrative Officer

PLAN OF SUMMER RESORT SUBDIVISION

KNOWN AS PINECREST
BEING PART OF LOT 3, CONCESSION 8
AND PART OF LOT 3, CONCESSION 9
TOWNSHIP OF LOUGHBOROUGH
COUNTY OF FRONTENAC

SCALE 1" = 100'



LEGEND
■ IB DENOTES 5/8" SQUARE IRON BAR, 2' LONG
□ SSIB DENOTES 1" SQUARE IRON BAR 2' LONG

BEARINGS SHOWN HEREON ARE ASTRONOMIC, DERIVED FROM SOLAR OBSERVATION, REFERRED TO THE MERIDIAN THROUGH THE SOUTH WEST CORNER OF LOT 1, CONCESSION 9, TOWNSHIP OF LOUGHBOROUGH

OWNER'S CERTIFICATE

1 THIS IS TO CERTIFY THAT:
LOTS 1 to 18 BOTH INCLUSIVE
BLOCKS ___ TO ___ BOTH INCLUSIVE, THE STREETS,
NAMELY: ORSER STREET
STREET WIDENINGS, LANES AND RESERVES (OR AS THE CASE MAY BE) AS DESIGNATED WITHIN THE AREA OF SURVEY OUTLINED, HAVE BEEN LAID OUT IN ACCORDANCE WITH (MY) INSTRUCTIONS.

2 THE STREETS AND STREET WIDENINGS AND LANES ARE HEREBY DEDICATED AS PUBLIC HIGHWAYS
DATED THE 20 DAY OF November 1970

Frances Pawling (WITNESS)
Everett Orser (SIGNATURE)
E. ORSER

AFFIDAVIT OF WITNESS TO OWNER'S CERTIFICATE

I Frances Pawling OF THE CITY OF KINGSTON, IN THE COUNTY OF FRONTENAC MAKE OATH AND SAY THAT:
1. I WAS PERSONALLY PRESENT AND DID SEE THE OWNER'S CERTIFICATE ON THIS PLAN SIGNED BY MR. E. ORSER Everett Orser
2. THE SAID CERTIFICATE WAS SIGNED BY THE SAID PARTY AT _____
3 I KNOW THE SAID PARTY.
4 I AM A SUBSCRIBING WITNESS TO THE SIGNING OF THE SAID CERTIFICATE

SWORN BEFORE ME
AT THE CITY OF KINGSTON
THIS 20 DAY OF November 1970
Frances Pawling SIGNATURE
Donald B Bond
A COMMISSIONER ETC.

AFFIDAVIT AS TO AGE

I E. ORSER MAKE OATH AND SAY THAT AT THE TIME OF EXECUTION OF THIS PLAN I WAS OF THE FULL AGE OF TWENTY-ONE YEARS.
SWORN BEFORE ME
AT THE CITY OF KINGSTON
THIS 20 DAY OF November 1970.
Everett Orser SIGNATURE
Donald B Bond
A COMMISSIONER ETC.

CERTIFICATE OF REGISTRATION OF PLAN OF SUBDIVISION

I CERTIFY THAT THIS PLAN IS DULY REGISTERED IN THE REGISTRY OFFICE FOR THE REGISTRY DIVISION OF Frontenac No 13 AT 1:29 PM O'CLOCK, ON THE 15th DAY OF Nov 1970 AS NO. 1584

W. D. Robertson
REGISTRAR OR DEPUTY REGISTRAR

APPROVED UNDER SECTION 28 OF THE PLANNING ACT

THIS DAY OF 1970

MINISTER OF MUNICIPAL AFFAIRS

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT:
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT AND THE REGISTRY ACT AND THE REGULATIONS MADE THEREUNDER.
2. THIS SURVEY WAS COMPLETED ON THE 10 DAY OF JANUARY 1970 (DATE)
March 4, 1971 (SIGNATURE)
N. B. CAMPBELL
ONTARIO LAND SURVEYOR

LAND EDGED IN PINK DESIGNATES LAND HEREBY SUBDIVIDED
LAND EDGED IN BROWN DESIGNATES LAND HEREBY DESIGNATED AS PUBLIC HIGHWAY.

Approved under Section 33 of THE PLANNING ACT.
This 20th day of Sept. 1971
NO SEAL
Dalton Bales
DALTON BALES
MINISTER OF MUNICIPAL AFFAIRS

KNOWLTON LAKE

APPROVED UNDER SECTION 28 OF THE PLANNING ACT
THIS _____ DAY OF _____ 1970

MINISTER OF MUNICIPAL AFFAIRS

CONSENT OF MORTGAGEE

THE MORTGAGEE (S) UNDER MORTGAGE REGISTERED AS
NO 1 HEREBY CONSENT TO THE REGISTRATION OF THIS PLAN.
DATED THE 20 DAY OF Nov 1970
Frances Pawling (WITNESS) (SIGNATURE OF MORTGAGEE)

AFFIDAVIT OF WITNESS TO MORTGAGEE'S CONSENT

I Frances Pawling OF THE City of Kingston IN THE County of Frontenac MAKE OATH AND SAY
1 THAT I WAS PERSONALLY PRESENT AND DID SEE THE MORTGAGEE'S CONSENT ON THIS PLAN SIGNED BY
John Alexander Bleaker
2 THAT THE SAID CONSENT WAS SIGNED BY THE SAID PARTY AT
City of Kingston
3 THAT I KNOW THE SAID PARTY.
4 THAT I AM A SUBSCRIBING WITNESS TO THE SIGNING OF THE SAID CONSENT.

SWORN BEFORE ME
AT THE City of Kingston
AT County of Frontenac
THIS 20 DAY OF November 1970
Frances Pawling (SIGNATURE)
Donald B Bond
A COMMISSIONER ETC.

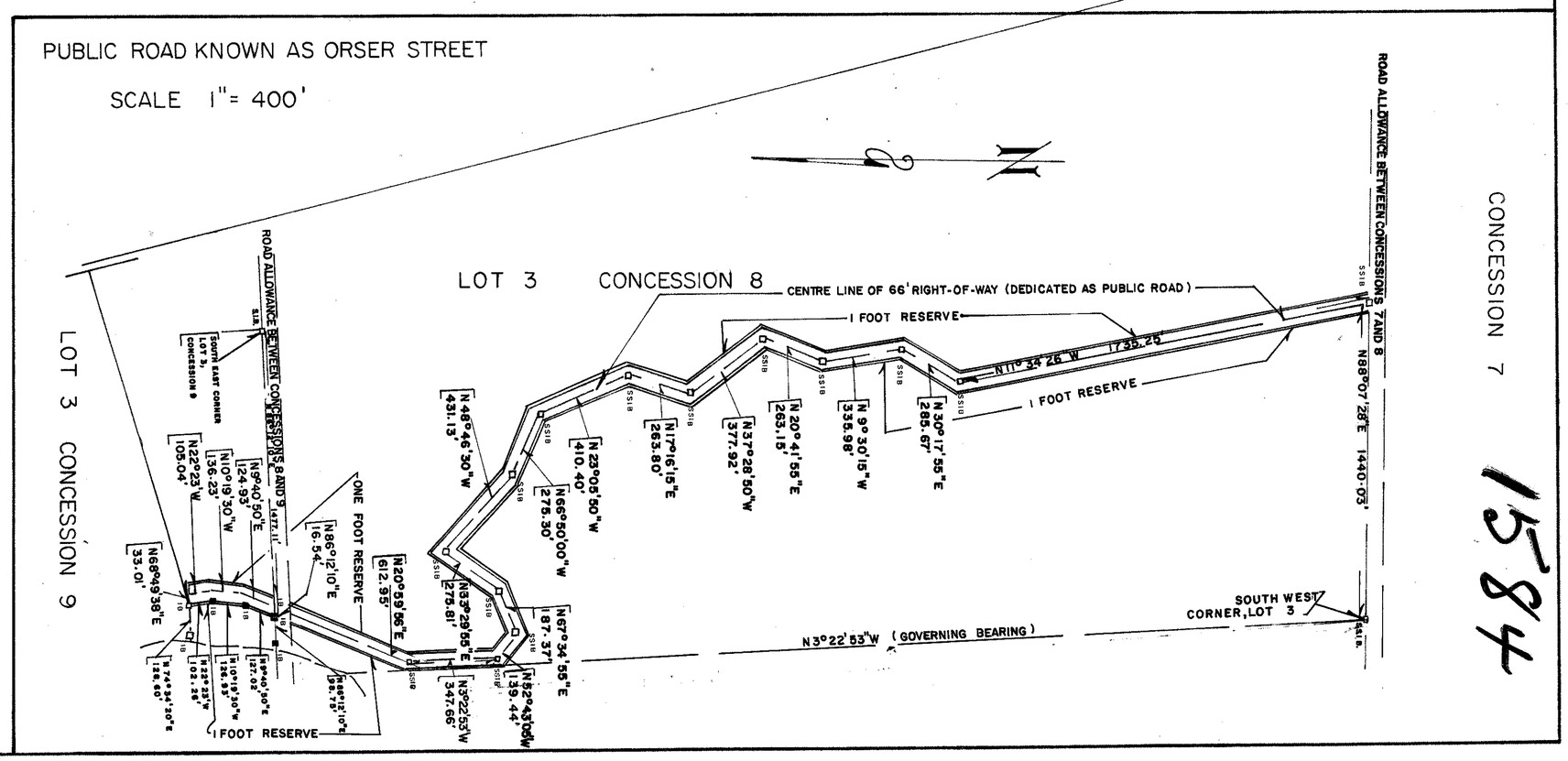
AFFIDAVIT AS TO AGE

I (OR WE) John Alexander Bleaker MAKE OATH AND SAY THAT AT THE TIME OF EXECUTION OF THIS PLAN I WAS OF FULL AGE OF TWENTY-ONE YEARS.

SWORN BEFORE ME
AT THE City OF Kingston
THIS 20 DAY OF November 1970
John A. Bleaker SIGNATURE
Donald B Bond
A COMMISSIONER ETC

PUBLIC ROAD KNOWN AS ORSER STREET

SCALE 1" = 400'

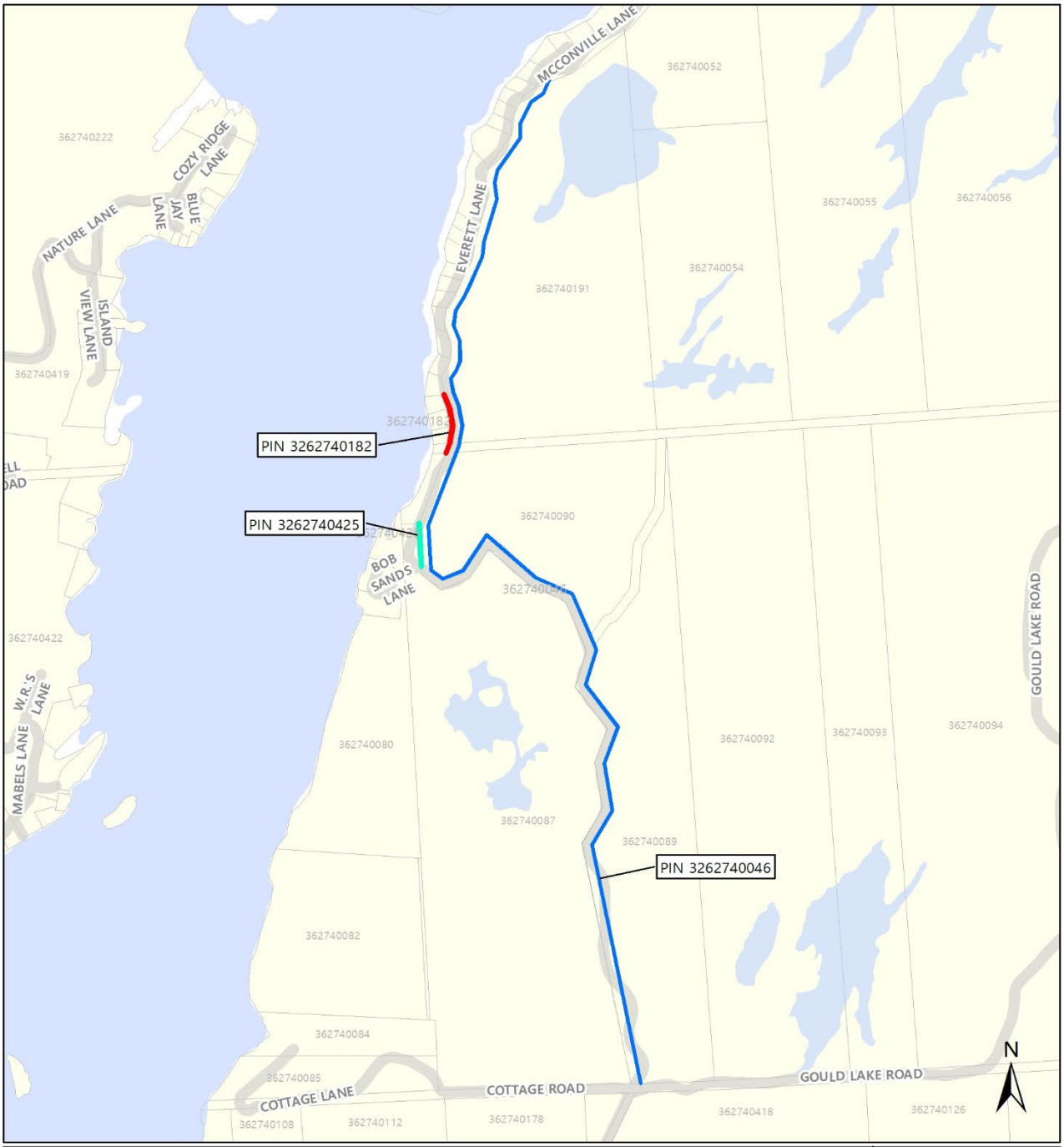


1584

"Attachment 2" to Report on 0.3 metre reserves abutting Everett Lane

TOWNSHIP OF SOUTH FRONTENAC

Request for Township Acquisition of 0.3 metre Reserves Abutting Everett Lane



SOUTH FRONTENAC

Legend

PIN 362740182 — Owner Parcel

PIN 362740425 — Road

PIN 362740046

Scale: 1:16,000

0 125 250 500

Meters

UTM Projection NAD 83

Data Source: OGDE, ESRI & The County of Frontenac. Created: 2022-10-04 Reference: Produced by the County of Frontenac with data supplied under license by members of the Ontario Geospatial Data Exchange. The County of Frontenac disclaims all responsibility for errors, omissions or inaccuracies in this publication.

Township of South Frontenac
By-Law 2023-100

Being a By-law to dedicate certain lands within the Township for public use; Subdivision Plan 1584.

WHEREAS certain lands were conveyed to the Corporation of the Township of Loughborough, now the Corporation of the Township of South Frontenac, for the purpose of a 0.3 metre reserve;

AND WHEREAS pursuant to Section 27(1) of the *Municipal Act, 2001, S.O. 2001 c.25*, as amended, a municipality may pass by-laws in respect of a highway only if it has jurisdiction over the highway;

AND WHEREAS pursuant to Section 28(2) of the *Municipal Act, 2001, S.O. 2001 c.25*, as amended, a local municipality has jurisdiction over all road allowances, highways, streets and lanes shown on a registered plan of subdivision;

AND WHEREAS the dedicating of the 0.3 metre reserves is required to allow access to a property; therefore

BE IT RESOLVED THAT Council for The Corporation of the Township of South Frontenac enacts as follows:

1. **THAT** the Council of the Corporation of the Township of South Frontenac approve the dedication, but not assumption, of the 0.3 metre reserves being legally described as:

   ONE FOOT RESERVE, PL 1584 LYING ALONG ELY LIMIT ORSER ST, PL 1584;S/T FR171493, FR175704 & FR294405 ; LOUGHBOROUGH; SUBJECT TO AN EASEMENT IN GROSS OVER PT 2 13R20576 AS IN FR167656, being all of PIN 36274-0046; and

   ONE FOOT RESERVE PLAN 1584 LYING ALONG THE WESTERLY BOUNDARY OFORSER STREET PLAN 1584; S/T FR171493, FR175704, FR29445; TOWNSHIP OFSOUTH FRONTENAC, being all of PIN 36274-0425; and

   ONE FOOT RESERVE, PL 1584 LYING ALONG THE WLY BOUNDARY OF ORSER ST,PL1584, LYING N OF 13R891 ; S/T FR171493, FR175704, FR29445 ;LOUGHBOROUGH/SOUTH FRONTENAC, being all of PIN 36247-0182; and

   PART ONE FOOT RESERVE PLAN 1584 LYING ALONG THE WESTERLY BOUNDARY OF ORSER STREET PLAN 1584 PART 10

13R8816; TOWNSHIP OF SOUTH FRONTENAC; being all of PIN 36274-0424.

2. **THAT** the parcels of land be dedicated as part of a public road, as shown on Plan 1548 as Orser Street, municipally known as Everett Lane.

This by-law shall come into force and take effect on the date of registration of this by-law.

Dated at the Township of South Frontenac this 19th day of December, 2023.

Read a first and second time this 19th day of December, 2023.

Read a third time and finally passed this 19th day of December, 2023.

THE CORPORATION OF THE
TOWNSHIP OF SOUTH FRONTENAC

_____
Ron Vandewal, Mayor

_____
James Thompson, Clerk

Township of South Frontenac
Staff Report

To:	Council
Prepared by:	Office of the Clerk
Date of Meeting:	December 19, 2023
Subject:	**Proposed Amendments to Council Procedure By-law, By-law 2017-76, As Amended regarding Delegated Authority (holding symbols) and Notice of Motion Process**

Summary

The purpose of the Report is to provide Council with background information regarding proposed amendments to By-law 2017-76, As Amended, A By-Law to Provide for Governing The Proceedings Of The Council, The Conduct Of Members And The Calling Of Meetings. The proposed amendment is intended to update the Council Procedure By-law to align from a procedural standpoint with changes to delegated authority approved via By-law 2023-91 and to update the Notice of Motion process.

Recommendation

That By-law 2023-92, being a By-law to amend By-Law 2017-76, As Amended, "A By-Law To Provide For Governing The Proceedings Of The Council, The Conduct Of Members And The Calling Of Meetings", be given first and second reading; and

That By-law 2023-92 be given third reading, signed and sealed.

Background

Section 238 (2) of the *Municipal Act*, 2001 requires that every municipality and local board shall pass a procedure by-law for governing the calling, place and proceedings of meetings. The current Township of South Frontenac Council Procedure By-law was enacted on December 5, 2017 and has been amended periodically to account for procedural changes. Most recently, the Council Procedure By-law was amended on May 16, 2023 to account for administrative amendments related to the Committee By-law, Committee of the Whole, Delegations and Public Meetings related to planning matters.

By-law 2016-73 prescribes the notice procedures amendments to various by-laws, including the Procedural By-Law.

A report was presented to Council on November 7, 2023 outlining background information regarding proposed amendments to the Council Procedure By-law. The report was also seeking Council direction for staff to hold a public meeting on December 19, 2023 in accordance with the Notice Provisions By-Law, By-law 2016-73.

Notice was provided in accordance with the By-law 2016-73 in the Frontenac News and on the Township website.

Discussion/Analysis

Council approved a Zoning By-law amendment on September 19, 2023, to permit additional dwelling units in the Township. This By-law will not take effect until Frontenac County Council approves the corresponding Official Plan Amendment, No. 25. This amendment establishes a Township-wide holding overlay for additional dwelling units.

There are several steps to allowing By-laws to be passed by delegated authority. An Official Plan must allow delegated authority, Council must pass a by-law to allow delegated authority and the Council Procedural By-law must be amended as it currently requires all by-laws to be passed at a meeting open to the public.

Official Plan Amendment No. 24 Official Plan Amendment No. 24 (By-law 2023-01) was passed by Council on January 10, 2023, the amendment allows delegation of authority for Minor Zoning By-Law Amendments.

At the November 7, 2023 Council meeting, By-law 2023-91 was passed to allow delegated authority to staff to pass By-laws pertaining to the removal of a '-H' Holding Symbol or remove any lot from a Holding Overlay that forms part of any zone within the Township of South Frontenac Comprehensive Zoning By-Law No. 2003-75, as amended, and any successor thereto.

The draft By-law attached to the Report as Exhibit A proposes to amend the Council Procedural By-Law to allow for the passing of a by-law by delegated authority.

The draft By-law also proposes an amendment to the Notice of Motion section of the Procedural By-law to provide procedural clarity to ensure that the Councillor who moved the Notice of Motion has two minutes to explain the purpose of the Notice of Motion to Council prior to a seconder being sought.

Summary of Proposed Amendments:

"Section 6. i) - Bylaws"

A "notwithstanding" clause must be added to the By-laws section of the Procedural By-Law, as it currently states that "All By-laws must be passed in meetings that are open to the public".

The proposed amendment reads as follows:

> "Notwithstanding the above clause, a By-law may be passed through delegated authority in accordance with By-law 2023-01and may be presented to and enacted by the Director of Development Services or designate."

"Section 6. a) – Notice of Motion"

The proposed amendment reads as follows:

> "The member of Council who moved the Notice of Motion at the previous meeting shall be afforded a maximum of two minutes to explain the purpose of the Notice of Motion to Council prior to the seconder being sought."

Notice Requirements:
As directed by Council on November 7, 2023, staff provided notice to allow for Council to hold a public meeting on December 19, 2023 in order to seek comment from the public regarding amendments to the Council Procedure By-law, (By-law 2017-76). By-law 2016-73, A By-Law to Prescribe The Form And Manner And Times For The Provision Of Notice outlines the notice requirements to amend the Council Procedure By-law. Specifically, a full notice shall be published at least four weeks in advance of the meeting on the Township website. Additionally, a summary of the Notice shall be published in the weekly banner advertising directing readers to the website four weeks in advance of the meeting. A subsequent notice shall be published one week in advance of the meeting.

The following notice was published in the Frontenac News on November 15, 22 and 29 and December 6, 2023:

> "**Public Meeting Notice**
>
> The Council of The Corporation of the Township of South Frontenac will host a public meeting on December 19, 2023, at 7 pm on proposed amendments to By-law 2017-76 which provides for the governing the proceedings of Council, the conduct of members and the calling of meetings. The amendments are related to proposed changes to allow staff delegated authority to remove holding provisions and to clarify the Notice of Motion process. Members of the public may review the agenda and register to participate in the meeting via Zoom at https://southfrontenac.civicweb.net/Portal/MeetingSchedule.aspx. Residents may contact the Clerk, James Thompson at jthompson@southfrontenac.net or by phone at 613-376-3027, x2239 for more information. Any written comments should be submitted to the Clerk by noon on December 19, 2023.

The following notice was published on the Township of South Frontenac website November 6, 2023.

> "The Council of The Corporation of the Township of South Frontenac will host a public meeting on December 19, 2023 at 7 pm on proposed amendments to By-law 2017-76 which provides for the governing the proceedings of Council, the conduct of members and the calling of meetings.
>
> The amendments are related to proposed changes to allow staff delegated authority to remove holding provisions and to clarify the Notice of Motion process.

Members of the public may review the agenda and register to participate in the meeting via Zoom **at this link**. Residents may contact the Clerk, James Thompson at **jthompson@southfrontenac.net** or by phone at 613-376-3027, x2239 for more information. Any written comments should be submitted to the Clerk by noon on December 19, 2023."

Members of the public have yet to submit comments to staff regarding this matter. As such, staff are recommending approval of the Committee By-law at the December 19, 2023 Council meeting provided that significant concerns are not raised during the public meeting.

Financial Implications

None.

Relationship to Strategic Plans

☐ Not applicable to this report.

☒ This initiative is supported by the following priorities of the 2019-2022 Strategic Plan.

- Priority: 3. Ensure the organizational capacity to deliver cost-effective services in a changing world.

Climate Considerations

☒ Not applicable to this report.

☐ This initiative supports climate change mitigation/adaption efforts in South Frontenac; and/or impacts the Township's resilience to climate change.

Notice/Consultation

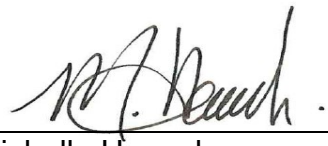
- Louise Fragnito, Chief Administrative Officer
- Christine Woods, Senior Planner

Attachments

Exhibit A – Draft By-law 2023-92 - A By-Law to Amend By-Law 2017-76, As Amended, 'A By-Law To Provide For Governing The Proceedings Of The Council, The Conduct Of Members And The Calling Of Meetings'.

Approvals

Prepared By:



Michelle Hannah
Deputy Clerk

Submitted By:

James Thompson
Clerk

Approved By:

Louise Fragnito, CPA, CGA
Chief Administrative Officer

TOWNSHIP OF SOUTH FRONTENAC
BY-LAW 2023-92

A BY-LAW TO AMEND BY-LAW 2017-76, AS AMENDED, "A BY-LAW TO PROVIDE FOR GOVERNING THE PROCEEDINGS OF THE COUNCIL, THE CONDUCT OF MEMBERS AND THE CALLING OF MEETINGS"

WHEREAS Council desires to update By-law 2017-76, As Amended;

NOW THEREFORE the Corporation of the Township of South Frontenac enacts as follows:

1. By-law 2017-76, As Amended "A By-Law To Provide For Governing The Proceedings Of The Council, The Conduct Of Members And The Calling Of Meetings" is hereby amended as follows:

   Section 6-Motions, subsection i) Bylaws is amended by adding a notwithstanding clause to read as follows:

   i) BYLAWS – The agenda may contain a summary of the contents of each bylaw. If a majority of Council requests, the Clerk will read the by-law in its entirety.

   All by-laws must be passed in meetings that are open to the public.

   Notwithstanding the above clause, a By-law may be passed through delegated authority in accordance with By-law 2023-01 and may be presented to and enacted by the Director of Development Services or designate.

   A Confirmatory By-law, to confirm the proceedings of Council during the meeting, will be placed before Council each meeting.

2. By-law 2017-76, As Amended "A By-Law To Provide For Governing The Proceedings Of The Council, The Conduct Of Members And The Calling Of Meetings" is hereby amended as follows:

   Section 6 – Motions is amended by adding the following clause to read as follows:

   a) NOTICE OF MOTION - Notice of motions will preferably be received during the scheduled time as allocated under Section 2.0 (a), however the Clerk may receive a Notice of Motion at any time during a Council meeting. A notice of motion will become part of the agenda for the subsequent Council meeting unless otherwise approved by Council.

   A notice of motion requires a seconder only at the time of debate. The member of Council who moved the Notice of Motion at the previous meeting shall be afforded a maximum of two minutes to explain the purpose of the Notice of Motion to Council prior to the seconder being sought.

   If a motion is not moved and seconded on the day and at the meeting for which notice was given, it cannot be moved at any subsequent meeting without notice being given on the agenda for that meeting.

3. This By-law will come into force and take effect on the date of its passing.

Dated at the Township of South Frontenac this 19 day of December 2023.

Read a first and second time this 19 day of December, 2023.

Read a third time and finally passed this 19 day of December, 2023.

THE CORPORATION OF THE
TOWNSHIP OF SOUTH FRONTENAC

_____
Ron Vandewal, Mayor

_____
James Thompson, Clerk

Township of South Frontenac
Staff Report

To:	Council
Prepared by:	Development Services Department
Date of Meeting:	December 19, 2023
Subject:	**Deeming By-law Applications PL-LC-2022-0089 (St. Pierre), PL-LC-2022-0090 (Conn), PL-LC-2022-0151 (Stover), Plan 716**

Summary

This report recommends that Council pass by-laws to deem Lots 53, 54, and 55 on Plan 716, District of Storrington not to be lots in a plan of subdivision for the purpose of applying 50(3) of the *Planning Act.*

Recommendation

That By-laws 2023-101, 2023-102 and 2023-103 deeming the properties described as Lots 53, 54, and 55, Plan 716, District of Storrington, Township of South Frontenac not be lots in a plan of subdivision, be given first and second reading; and

That By-laws 2023-101-, 2023-102 and 2023-103 be given third reading, signed and sealed.

Background

The subject applications relate to consent applications PL-2021-0057, PL-BDJ-2022-0007, and PL-BDJ-2022-0150 for lot additions to properties on Sandpiper Lane. Attachment 1 is a location map. These applications took land from Part Block B on Plan 716 and added it to three Lots in the subdivision.

Applications PL-2021-0057 and PL-BDJ-2022-0007 were approved by the Director of Development Services on April 8, 2022. Application PL-BDJ-2022-0150 was approved by the Director on January 27, 2023.

A condition of these approvals was that a deeming by-law be passed to deem the lots not to be lots within a plan of subdivision. This will ensure that the existing lots and the lot addition lands are able to legally merge and not be able to be sold separately in the future.

The owners of Lots 53, 54 and 55 are requesting Council pass deeming by-laws to fulfill the condition of their consent applications. Passing the deeming by-law will allow the following to take place:

- A portion of Block B to be merged with all of Lot 53

- A portion of Block B to be merged with all of Lot 54
- A portion of Block B to be merged with all of Lot 55

Discussion

Under the Planning Act, whole lots in a plan of subdivision are always legally able to be sold separately. A deeming by-law must be passed by Council deeming the three lots to not be lots in a plan of subdivision so that the lot addition lands can legally merge with the parcels upon registration of the consents (i.e. so they stick together). This will ensure that the lot addition lands cannot unintentionally become new standalone parcels of land. It will also ensure that the original lots and the lot addition lands can be described under one Parcel Identification Number (PIN) through the Land Registry Office.

Financial Implications

The application fees have been paid for all applications.

The cost of registration of the required documentation will be paid by the applicants.

Relationship to Strategic Plans

☒ Not applicable to this report.

☐ This initiative is supported by the following priorities of the 2019-2022 Strategic Plan.

- Priority: Choose an item.
- Action Item (if applicable):

Climate Considerations

☒ Not applicable to this report.

☐ This initiative supports climate change mitigation/adaption efforts in South Frontenac; and/or impacts the Township's resilience to climate change.

Notice/Consultation

These applications did not require consultation.

Attachments

1. Location Map
2. By-law 2023-101
3. By-law 2023-102
4. By-law 2023-103

Approvals

Prepared By:

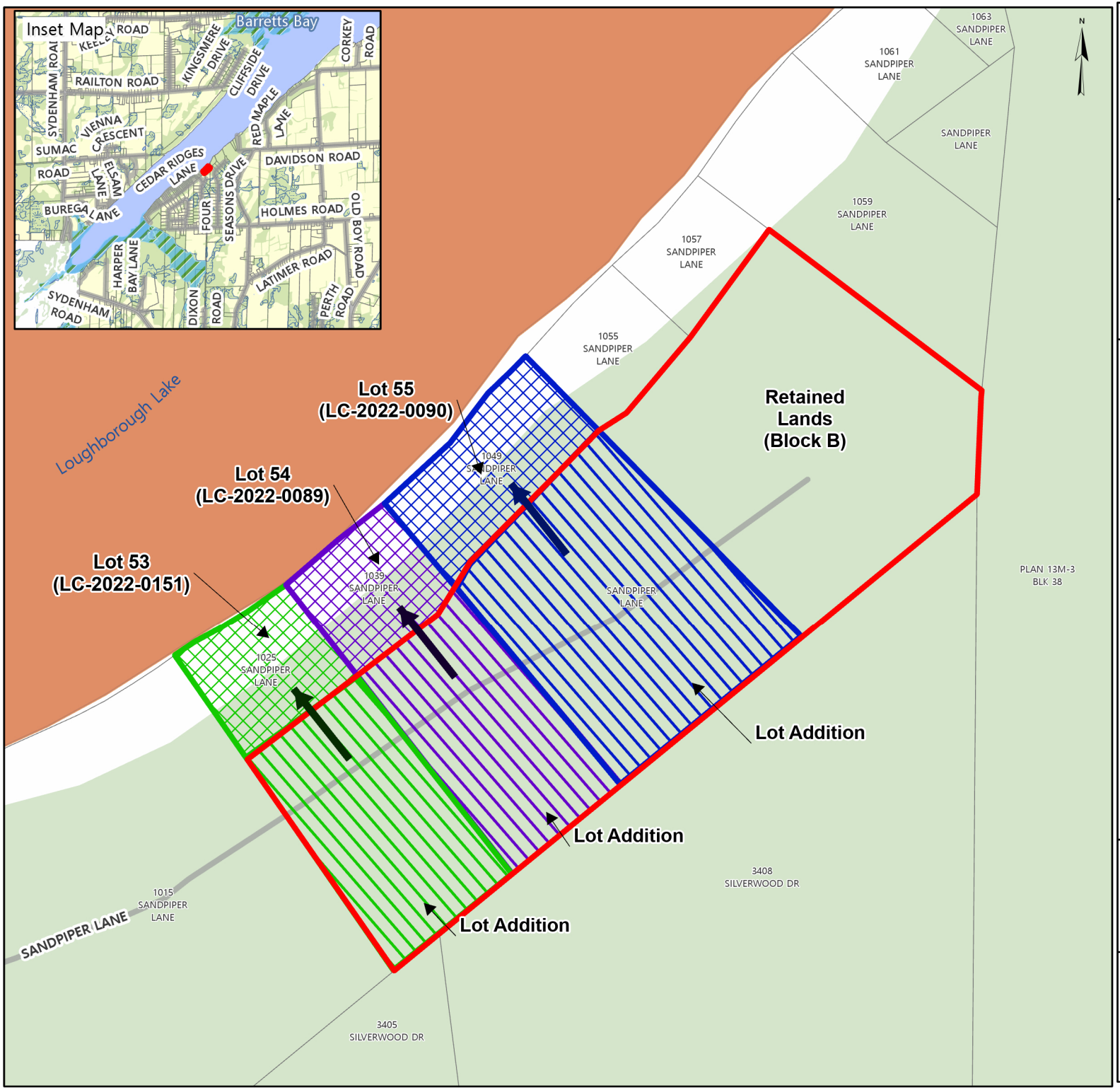
Christine Woods RPP, MCIP, Senior Planner

Submitted By:

Brad Wright, Director of Development Services

Approved By:

Louise Fragnito, CPA, CGA
Chief Administrative Officer



SOUTH FRONTENAC

PL-LC-2022-0089 (ST. PIERRE)
PL-LC-2022-0090 (CONN)
PL-LC-2022-0151 (STOVER)

SANDPIPER LANE

Legend

- Subject Property
- Lot 53 (LC-2022-0151)
- Lot 54 (LC-2022-0089)
- Lot 55 (LC-2022-0090)
- Provincially Significant Wetland
- Wetland
- Wooded Area
- Lake Trout Lake - At Capacity
- Lake Trout Lake - Not at Capacity
- Non-Lake Trout Lake - At Capacity
- Township Boundary
- Road
- Railway

Produced by the County of Frontenac under license with the Ontario Ministry of Natural Resources © King's Printer for Ontario, 2022.

While the County makes every effort to insure that the information presented is accurate for the intended uses of this map, there is an inherent error in all mapping products, and accuracy of the mapping cannot be guaranteed for all possible uses. This map displays basic topographic features only.

Scale: 1:1,000

0 12.5 25 50 m

UTM Zone 18 NAD 83

Date: 2023-12-05

TOWNSHIP OF SOUTH FRONTENAC
BY-LAW 2023-101

BEING A BY-LAW TO DEEM PART OF PLAN OF SUBDIVISION NO. 716 NOT TO BE A REGISTERED PLAN OF SUBDIVISION: LOT 53, PLAN 716, DISTRICT OF STORRINGTON

WHEREAS, section 50(4) of the *Planning Act R.S.O. 1990*, c. P.13, authorizes Council to pass a by-law to designate any plan of subdivision, or part thereof that has been registered for eight years or more, to be deemed not to be a registered plan of subdivision for purposes of the part lot control provisions of section 50(3) of the *Planning Act*.

AND WHEREAS Plan of Subdivision 716 has been registered for more than eight (8) years;

AND WHEREAS Council considers it appropriate and necessary that those parts of Plan 716 described in this by-law be deemed not to be a registered plan of subdivision to facilitate the merging of lands that will be utilized as one property and is developed as a single property for a period greater than eight years.

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE TOWNSHIP OF SOUTH FRONTENAC HEREBY ENACTS AS FOLLOWS:

1. THAT Lot 53, Plan of Subdivision 716, District of Storrington is hereby deemed not to be a registered plan of subdivision for purposes of the part lot control provisions of subsection 50(3) of the *Planning Act*.

2. That the Owner(s) of the lands as of the date of by-law passage shall pay all costs associated with the development, passage and registration of this By-law.

3. That this By-law shall be registered in the proper Land Registry Office and the Municipality shall be provided with appropriate documentation that the registration has been completed within ten (10) business days of the date of registration;

4. That passage of this By-law shall be deemed to include authorization to legal counsel to register same in the appropriate Land Registry Office without further written authorization;

5. That this By-law shall come into effect when registered in the proper Land Registry Office.

Dated at the Township of South Frontenac this 19th day of December, 2023.

Read a first and second time this 19th day of December, 2023.

Read a third time and finally passed this 19th day of December, 2023.

THE CORPORATION OF THE
TOWNSHIP OF SOUTH FRONTENAC

_____
Ron Vandewal, Mayor

_____
James Thompson, Clerk

TOWNSHIP OF SOUTH FRONTENAC
BY-LAW 2023-102

BEING A BY-LAW TO DEEM PART OF PLAN OF SUBDIVISION NO. 716 NOT TO BE A REGISTERED PLAN OF SUBDIVISION: LOT 54, PLAN 716, DISTRICT OF STORRINGTON

WHEREAS, section 50(4) of the *Planning Act R.S.O. 1990*, c. P.13, authorizes Council to pass a by-law to designate any plan of subdivision, or part thereof that has been registered for eight years or more, to be deemed not to be a registered plan of subdivision for purposes of the part lot control provisions of section 50(3) of the *Planning Act*.

AND WHEREAS Plan of Subdivision 716 has been registered for more than eight (8) years;

AND WHEREAS Council considers it appropriate and necessary that those parts of Plan 716 described in this by-law be deemed not to be a registered plan of subdivision to facilitate the merging of lands that will be utilized as one property and is developed as a single property for a period greater than eight years.

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE TOWNSHIP OF SOUTH FRONTENAC HEREBY ENACTS AS FOLLOWS:

1. THAT Lot 54, Plan of Subdivision 716, District of Storrington is hereby deemed not to be a registered plan of subdivision for purposes of the part lot control provisions of subsection 50(3) of the *Planning Act*.

2. That the Owner(s) of the lands as of the date of by-law passage shall pay all costs associated with the development, passage and registration of this By-law.

3. That this By-law shall be registered in the proper Land Registry Office and the Municipality shall be provided with appropriate documentation that the registration has been completed within ten (10) business days of the date of registration;

4. That passage of this By-law shall be deemed to include authorization to legal counsel to register same in the appropriate Land Registry Office without further written authorization;

5. That this By-law shall come into effect when registered in the proper Land Registry Office.

Dated at the Township of South Frontenac this 19th day of December, 2023.

Read a first and second time this 19th day of December, 2023.

Read a third time and finally passed this 19th day of December, 2023.

THE CORPORATION OF THE
TOWNSHIP OF SOUTH FRONTENAC

_____
Ron Vandewal, Mayor

_____
James Thompson, Clerk

TOWNSHIP OF SOUTH FRONTENAC
BY-LAW 2023-103

BEING A BY-LAW TO DEEM PART OF PLAN OF SUBDIVISION NO. 716 NOT TO BE A REGISTERED PLAN OF SUBDIVISION: LOT 55, PLAN 716, DISTRICT OF STORRINGTON

WHEREAS, section 50(4) of the *Planning Act R.S.O. 1990*, c. P.13, authorizes Council to pass a by-law to designate any plan of subdivision, or part thereof that has been registered for eight years or more, to be deemed not to be a registered plan of subdivision for purposes of the part lot control provisions of section 50(3) of the *Planning Act*.

AND WHEREAS Plan of Subdivision 716 has been registered for more than eight (8) years;

AND WHEREAS Council considers it appropriate and necessary that those parts of Plan 716 described in this by-law be deemed not to be a registered plan of subdivision to facilitate the merging of lands that will be utilized as one property and is developed as a single property for a period greater than eight years.

NOW THEREFORE THE COUNCIL OF THE CORPORATION OF THE TOWNSHIP OF SOUTH FRONTENAC HEREBY ENACTS AS FOLLOWS:

1. THAT Lot 55, Plan of Subdivision 716, District of Storrington is hereby deemed not to be a registered plan of subdivision for purposes of the part lot control provisions of subsection 50(3) of the *Planning Act*.

2. That the Owner(s) of the lands as of the date of by-law passage shall pay all costs associated with the development, passage and registration of this By-law.

3. That this By-law shall be registered in the proper Land Registry Office and the Municipality shall be provided with appropriate documentation that the registration has been completed within ten (10) business days of the date of registration;

4. That passage of this By-law shall be deemed to include authorization to legal counsel to register same in the appropriate Land Registry Office without further written authorization;

5. That this By-law shall come into effect when registered in the proper Land Registry Office.

Dated at the Township of South Frontenac this 19th day of December, 2023.

Read a first and second time this 19th day of December, 2023.

Read a third time and finally passed this 19th day of December, 2023.

THE CORPORATION OF THE
TOWNSHIP OF SOUTH FRONTENAC

_____
Ron Vandewal, Mayor

_____
James Thompson, Clerk

Township of South Frontenac
Staff Report

To:	Council
Prepared by:	Development Services Department
Date of Meeting:	December 19, 2023
Subject:	**Parkland Dedication By-law Update**

Summary

Township staff has drafted a new Parkland Dedication By-law in response to legislative changes resulting from Bill 23, *More Homes Built Faster Act, 2022*. The proposed new By-law would repeal and replace the existing Parkland Dedication By-law (By-law Number 2017-16) to bring the Township's Parkland Dedication By-law into compliance with the current requirements of Bill 23.

Recommendation

That the report regarding the new Parkland Dedication By-law be received; and,

That the new Parkland Dedication By-law (By-law 2023-104) included with this report as Attachment 1 be given first and second reading; and,

That By-law 2023-104 be given third reading, signed and sealed.

Background

The *Planning Act* allows municipalities to require land for park (or other public recreational purposes) to be given to the Township as part of the approval of a development application. The contribution can come in the form of land conveyance (for a future park) or payment in lieu of land (which the Township uses to purchase land for parks and other recreational facilities).

The *Planning Act* is provincial legislation that sets out the rules for land use planning in Ontario. It describes how land uses may be controlled and who may control them. Section 42 of the *Planning Act* allows South Frontenac to address growth by requiring consents, plans of subdivision, and plans of condominium to contribute to the expansion and enhancement of the Townships parks.

With Bill 23, Section 42 of the *Planning Act* was amended to include the right to appeal the Township's parkland dedication by-law or amendment. Property owners can also appeal to the Ontario Land Tribunal if the municipality refuses to accept proposed land for conveyance. Legislative changes also include notice requirements for the passing of a parkland dedication by-law, and requirements that a municipality provide reports to the

public regarding the 'special account' for specific parkland revenues (cash-in-lieu of parkland). Another change to Section 42 of the *Planning Act* is the requirement for municipalities to spend or allocate 60% of parkland reserve funds at the start of each year.

Finally, Bill 23 adds a new subsection 42(4.30) that permits a landowner to identify and propose to the municipality a portion of a development site for dedication as parkland. Previously, the size and location of new parks required to be dedicated through a development process was at the discretion of the municipality. New subsection 42(4.31) also expands the type of lands that owners can propose as a public park dedication beyond unencumbered fee simple conveyances. Now, parkland proposals can include lands that are subject to easements or other restriction, or encumbered by below grade infrastructure. It should be noted that this section of the *Planning Act* has not been amended as of the date of this report, and amendments are to be made on a day to be named by proclamation of the Lieutenant Governor.

The wording in the attached by-law maintains Council's previous direction to a preference for cash in lieu of parkland conveyance. Where a conveyance of land may be considered, the lands should be in alignment with the Township's Recreation, Parks & Leisure Master Plan.

Financial Implications
There are no financial implications associated with passing the proposed by-law. As the Township currently requires land or cash-in-lieu equivalent for parkland, the changes resulting from Bill 23 should have little effect to the amount of money or and that the Township receives for parkland. However, the Township will need to spend or allocate 60% of parkland reserve funds at the start of each year.

Relationship to Strategic Plans
☐ Not applicable to this report.

☒ This initiative is supported by the following priorities of the 2019-2022 Strategic Plan.

- Priority: 3. Ensure the organizational capacity to deliver cost-effective services in a changing world.

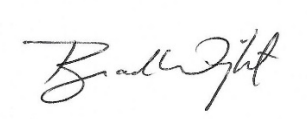
Notice/Consultation

- Planning Services staff

Attachments
Attachment A – By-law 2023-104– A by-law to establish a process for the conveyance of parkland and for valuating cash-in-lieu payments required as a condition of consent applicants or plans of subdivision or condominium and repeal by-law 2017-16

Approvals

Submitted by:



Brad Wright
Director of Development Services

Approved By:

Louise Fragnito, CPA, CGA
Chief Administrative Officer

TOWNSHIP OF SOUTH FRONTENAC
BY-LAW 2023-104

BEING A BY-LAW TO ESTABLISH A PROCESS FOR THE CONVEYANCE OF PARKLAND AND FOR VALUATING CASH-IN-LIEU PAYMENTS REQUIRED AS A CONDITION OF CONSENT APPLICATIONS OR PLANS OF SUBDIVISION OR CONDOMINIUM AND REPEAL BY-LAW 2017-16

WHEREAS, Sections 42, 51, 51.1 and 53 of the *Planning Act*, R.S.O. 1990 as amended, authorize Council to pass a by-law requiring land or cash-in-lieu of land to be conveyed to the municipality for park or other public recreational purposes as a condition of development, redevelopment, or subdivision of land(s); and

AND WHEREAS the Council of The Corporation of The Township of South Frontenac has adopted an Official Plan that contains policies with respect to the provision of lands for park or other public recreational purposes; and

AND WHEREAS the Council of The Township of South Frontenac deems it necessary to repeal and replace By-Law Number 2017-16, a by-law to establish a process for the conveyance of parkland and for valuating parkland cash-in-lieu payments required as a condition of consent applications or plans of subdivision or condominium;

NOW THEREFORE THE CORPORATION OF THE TOWNSHIP OF SOUTH FRONTENAC BY ITS COUNCIL, HEREBY ENACTS AS FOLLOWS:

1. **Definitions:**

(a) "Cash-in-lieu" means a payment of money for park or other public recreational purposes which is collected instead of a conveyance of land which would otherwise be required to be conveyed pursuant to the parkland provisions of the *Planning Act* as incorporated into this by-law.

(b) "Owner" means the registered owner of the land to be developed, redeveloped, or subdivided.

Parkland Conveyance:

1. That the Township of South Frontenac may require up to two percent of the land as a condition of consent or plan of subdivision or condominium application to create industrial or commercial lots, or five percent of the land for consent application or a plan of subdivision or condominium in all other cases.
2. That all lands to be conveyed pursuant to this By-law must be in a location and condition which is satisfactory to the Township. The Township may not elect to accept the conveyance of any land which it deems unsuitable or undesirable for its intended purpose due to constraints caused by the parcel configuration, size, or location. Factors which will be considered in determining the suitability of the parcel for conveyance to the Township include but are not limited to:

    i. Whether the lands have or will have safe access from a year-round maintained public road;
    ii. Whether the lands are adequately sized to accommodate park amenities such as sports fields, playgrounds, beaches;
    iii. Whether the lands are favourably located within the context of the development;
    iv. Whether the lands are abutting complementary uses;

v. Whether the conveyance of lands is in line with the Official Plan, applicable secondary plan requirements, or the Township's Recreation, Parks & Leisure Master Plan;
vi. Whether the lands are located within environmental protection areas and/or lands associated with flooding or erosion hazards; and
vii. Whether the topography of the subject lands is conducive to the creation of recreational amenities.

3. That if the Township is unsatisfied with the condition of the land due to disturbances including the dumping of debris, unconsolidated fill, the removal of topsoil, or contamination prior to or during the process of development, the Owner must restore the land to a condition that is satisfactory to the Township prior to conveyance occurring.

4. That the following lands will be discouraged as part of the required lands for parkland conveyance:

   a. Stormwater management facilities;
   b. Roads or road allowances;
   c. Utility corridors;
   d. Contaminated lands which have not been fully remediated;
   e. Areas with topographical constraints which could pose a danger to users or that precludes the possibility of the development of recreational uses, including, but not limited to rock outcroppings, wetlands, and areas characterized by steep slopes;
   f. Lands which are subject to liens, easements, or rights-of-way;

5. That the Township may, at its discretion, accept any lands over and above the required parkland conveyance and may incorporate these lands into the Township's park system.

6. That the Township may, at its discretion, accept conveyed lands which are not contiguous with each other, or with the lands related to the development in question, provided that the value of these lands is approximately equal to the value of the lands which would be otherwise conveyed.

Cash-In-Lieu of Parkland Conveyance:

7. That the Township of South Frontenac may require up to two percent of the land value as a condition of consent or plan of subdivision or condominium application to create industrial or commercial lots, or five percent of the land value for consent application or a plan of subdivision or condominium in all other cases.

8. That the preference of Council is a cash-in-lieu payment rather than the conveyance of parkland unless proposed lands to be conveyed are in alignment with the Township's Recreation, Parks & Leisure Master Plan.

Appraisal:

9. That the amount of payment in lieu required by this By-law shall be based on a valuation of the land as of the day before the day of the approval of the draft plan of subdivision or draft plan of condominium;

10. That a valuation for a parkland cash-in-lieu payment for a lot created by consent may be provided by a qualified professional realtor chosen by the Township;

11. That a valuation for a parkland cash-in-lieu payment for a plan of subdivision or plan of condominium shall be provided by a qualified and certified professional appraiser or valuator with an OA-AIC, AACI, P. App or CRA

designation - such appraiser to be chosen by the Township;

12. That an additional valuation for a parkland cash-in-lieu payment for a plan of subdivision or plan of condominium may be provided by a qualified and certified professional appraiser or valuator with an OA-AIC, AACI, P. App or CRA designation - such appraiser to be chosen by the Owner;

13. That the valuations noted in item #11 and #12 above shall be brought to Council for a final determination of the value of the land;

14. That all costs associated with the conveyance of land as described in this By-law shall be the responsibility of the Owner.

15. That a flat fee of $100.00 shall be required as the amount of parkland cash-in-lieu as a condition of approval for any consent application for a lot addition;

Budget:

16. That the Township shall spend or allocate at least 60 percent of the monies that are within the special account intended for a parkland reserve fund at the beginning of each calendar year.

17. This by-law shall come into force in accordance with sections 42, 51, 51.1 and 53 of the *Planning Act*, R.S.0.1990, either on the date of passage or as otherwise provided by sections 42, 51, 51.1 or 53.

18. That all other by-laws establishing a process for the conveyance of parkland and for valuating cash-in-lieu payments are hereby repealed.

Dated at the Township of South Frontenac this 19th day of December 2023.

Read a first and second time this 19th day of December 2023.

Read a third time and finally passed this 19th day of December 2023.

The Corporation of the Township of South Frontenac

_____

Ron Vandewal, Mayor

_____

James Thompson, Clerk

Township of South Frontenac
Staff Report

To:	Council
Prepared by:	Development Services Department
Date of Meeting:	December 19, 2023
Subject:	**Zoning By-law Amendment Application Z-21-29, Estate of Everett Orser (Keith Orser), Part of Lot 3, Concession 8, Loughborough**

Summary

This report recommends that Council pass a by-law to change the zone on the subject property to allow a building permit to be issued for a single detached dwelling.

Recommendation

THAT By-law 2023-105 to amend the zoning on the lands at Part of Lot 3, Concession 8, District of Loughborough, Township of South Frontenac be given first and second reading; and

That By-law 2023-105 be given third reading, signed and sealed.

Background

Council held a virtual public meeting under the Planning Act on February 1, 2022, on the proposed amendment to Zoning By-law No. 2003-75. This application is being brought forward to Council for a decision.

Discussion/Analysis

Summary of Application

The proposal is to change the zone on the subject property from Rural (RU) to Limited Services Residential (RLS). The effect of the proposed by-law would be to allow a building permit to be issued for a single detached dwelling.

Property Description

The subject property is 13 hectares (32 acres) in area and has approximate 700 metres of frontage on Everett Lane near Knowlton Lake. The property is generally level and forested, except for approximately 3.5 hectares of unevaluated wetlands through the centre of the

property, and a high bedrock escarpment along the western lot line. The deciduous forested area was farmed at one time, according to the agent. The property does not have any water frontage.

The property is accessed from Everett Lane. The topography of the lane is generally level from Gould Lake Road to the west end of the subject property. The lane then travels along the bottom of the escarpment. The lane is privately maintained year-round.

Related Applications

The subject property is not subject to any other applications under the *Planning Act*.

Department and Agency Comments

This application did not meet the criteria for circulation to Public Services and Building Services.

Public Comments

A virtual public meeting was held under the *Planning Act* on February 1, 2022.

Prior to the public meeting, Planning staff received questions about the application from several members of the public. The questions related to what considerations are there for environmental impact and at-capacity lake status, what type of development is permitted in the Limited Service Residential zone, and whether the property could be subdivided. Staff responded to these questions. The matters raised are addressed in the Planning Analysis.

Prior to the public meeting, Patrick and Linda Hamilton (1049 Bob Sands Lane) raised concerns about the applicant constructing a single detached dwelling and operating his business from the property. In particular, they have concerns about big trucks and heavy equipment being stored on the site, noise, and road safety given the narrow roadway and that the private lane is maintained by the users. Councillor Sutherland also asked about this at the public meeting.

Tracy Riley (1031 Bob Sands Lane) had concerns with the proposal from an environmental protection perspective and wanted to know that care would be taken to protect the area if the property is developed. She questioned whether the Environmental Protection designation shown on the property on the Official Plan Schedule was recognized with respect to this application, and how it would be addressed as part of the development of the property. She questioned how the forest and pond system would be truly protected. She spoke to the importance of preserving forests to constructively address climate change. She also asked how runoff from this property would be prevented, as Knowlton Lake as well as several properties are downstream of the subject property.

Councillor Sleeth asked where the proposed dwelling would be relative to the Environmental Protection (EP) designation. Councillor MacDougall requested a further explanation about the EP designation and the study process.

Councillor Sutherland requested clarification that this would not be back lot development, since the Township does not permit back lot development on private lanes. Mayor Vandewal also spoke to back lot development and the pressure it can place on waterfront properties to provide access to the lake.

Deputy Mayor Revill suggested that the application is supportable given the proposed distance of the dwelling from the lane, the lake, and other properties, provided that the dwelling is away from the environmental protection area.

Planning Analysis

The proposed rezoning was assessed against the applicable policies of the Provincial Policy Statement 2020 (PPS), County of Frontenac Official Plan, and Township of South Frontenac Official Plan, as well as the provisions of Zoning By-law No. 2003-75.

Lake Trout Lake

Approximately half of the property is located within 300 metres of Knowlton Lake, which is an at-capacity lake trout lake. The Township Official Plan policies permit new development on lots of record adjacent to at-capacity (highly sensitive) lake trout lakes subject to a minimum 30 metre setback from the highwater mark of the lake, or a minor variance to this setback. The subject property is a lot of record and any development on this property will be located more than 50 metres from the lake. Therefore, the Lake Trout Lake policies have been addressed.

Natural Heritage

The PPS states that natural features and areas shall be protected for the long term. The County Official Plan and the Township Official Plan, in accordance with the PPS, do not permit development and site alteration in and adjacent to several types of significant natural features and areas unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

The Township Official Plan Schedule shows an Environmental Protection (EP) designation covering a large area between Knowlton Lake, Holleford Lake and Gould Lake, including the Holleford Lake Provincially Significant Wetland. The EP designation includes a large portion of the subject property. The Township and Cataraqui Conservation do not have reference material that would indicate what feature(s) the EP designation relates to on the subject property, as the EP designation typically applies to Provincially significant wetlands, other large wetlands, and floodplains.

The boundaries of the EP designation serve as the basis for the implementing Zoning By-law. The original Schedules of Zoning By-law No. 2003-75 identify an Environmental Sensitive Lands overlay that corresponds to the EP designation. Section 5.37.1 of the Zoning By-law indicates that development and site alteration may take place in these areas subject to an environmental impact assessment (EIA) and in accordance with the underlying zone requirements.

Staff requested an EIA following the public meeting. The applicant subsequently submitted an EIA (Gemtec, July 12, 2022) in support of the application.

The purpose of the EIA was to identify and evaluate the significance of any natural heritage features on the subject property and within the broader study area, as well as to assess the potential impacts from the proposed development, and to recommend appropriate mitigation measures.

The EIA identified significant woodland, candidate turtle wintering area, reptile hibernaculum, candidate woodland amphibian breeding habitat, wetland amphibian breeding habitat, and candidate habitat of species of conservation concern (e.g. eastern musk turtle, snapping turtle, eastern ribbon snake, eastern wood pewee, wood thrush).

The following potential impacts were identified: a minor loss of road front woodlands, a minor increase in impervious surface, a minor increase in stormwater generation, short-term increases in sedimentation and/or erosion and increased noise generation.

The EIA concluded that there would be no significant impacts to natural heritage features identified on-site, including fish habitat, significant wildlife habitat, or habitats of species at risk due to the size of the property, and the distance of the proposed single detached dwelling from the identified features.

The EIA recommended that a minimum 30 metre setback be maintained from the wetland, consistent with the Official Plan and Zoning By-law. It also recommended that the identified development envelope be registered on title. It also recommended implementation of best management practices such as no in-water works during fish spawning season, no tree removal during bird and bat active season, and use of appropriate sediment and erosion control measures.

As with any property that contains natural features such as wetlands and forest, there is the potential for wildlife habitat, including habitat of species at risk (e.g. grey ratsnake). Landowners are responsible to comply with the provisions of the *Endangered Species Act, 2007*, including those that provide protection for individual members of a species and their habitat if that species is listed on the Species at Risk in Ontario list as extirpated, endangered or threatened. If an activity may cause adverse impacts to a species at risk

and/or their habitat, authorization under the ESA may be required prior to conducting the activity.

The proposed by-law would place a holding (-H) symbol on the zone to require site plan control to implement the EIA recommendations before any development or site alteration would be permitted.

Rural Development

The PPS and County Official Plan speak to permitting resource-based recreational uses and development that is sensitive to the surroundings.

The Township Official Plan suggests that the type and amount of development on 'Rural' lands must maintain the rural character, natural heritage, and cultural landscape in the Township. The Official Plan permits some limited service residential development in the form of single detached dwellings and seasonal dwellings on properties accessed from a private road.

The subject property is currently zoned Rural, which allows a variety of uses and buildings. However, Section 6.12 of the Township Official Plan and Section 5.25 of Zoning By-law No. 2003-75 do not permit a building permit to be issued for a property on a private lane unless the property is a lot of record and is in a limited service residential zone (i.e. RLS, RLSW or RLSI).

The property is a lot of record that has been in existence for more than 40 years. The Official Plan and Zoning By-law acknowledge this situation by allowing a lot of record to be rezoned for residential development. The purpose of the requirement for a rezoning is to acknowledge that the property is accessed from a private lane, and to consider the condition of the lane before permitting development. Everett Lane is in good condition and is generally level up to the subject property.

In a Limited Service Residential (RLS) Zone, there is no commitment or requirement by the municipality to assume responsibility for ownership or maintenance of any private lane. It is noted that Everett Lane is located over a parcel of land shown as Orser Street on Subdivision Plan 1584. This parcel is Township-owned but was never assumed. Due to road conditions of privately maintained roads, there is no commitment or requirement by the municipality to ensure that emergency vehicles are able to access privately owned roads. The intent of the RLS Zone is to recognize non-waterfront residential development on private lanes.

Through the review of this application, it was identified that the subject property is separated from Everett Lane by a 0.3 metre wide reserve. Council agreed to take ownership of three 0.3 metre reserves in December 2022 in order to provide the subject

property with at least 76 metres of frontage on the lane, and to clean up the title of several other private properties. The three reserves were transferred to the Township in November 2023, at no cost to the Township. There is a separate report to Council to pass a by-law to dedicate the reserves.

The RLS Zone permits a seasonal dwelling or a single detached (year-round) dwelling, accessory buildings, and a home occupation. A home occupation is a business that is incidental to the residential use of a dwelling and is conducted entirely within such a dwelling by an inhabitant thereof (e.g. hairdresser, doctor, real estate agent office). Home industries, which occur in a dwelling or an accessory building (e.g. those that would involve big trucks and heavy equipment, veterinary clinic, automobile body shop, welding and plumbing), are not permitted in the RLS zone, and so would not be permitted on the subject property.

Proposed By-law

The proposed by-law would change the zone on the subject property to a Limited Service Residential – Special Provision with a Holding Symbol (RLS-15-H). The RLS zone would permit the intended residential use of the property. It would also permit conservation uses and a wood lot, consistent with the historical and current use of the property. The Holding Symbol would prohibit development and site alteration from occurring on the property until a Site Plan Agreement is entered into between the Owner and the Township and is registered on the title of the property. Site plan control will be used to ensure that future development will occur in accordance with the recommendations outlined in the EIA.

Land Division Potential

Members of the public asked whether the rezoning application could facilitate future division of the subject property.

Changing the zone on this property would allow a building permit to be issued for one dwelling. It is the understanding of staff that the applicant intends to either build a home on the property themselves, or to sell the property as a building lot. A rezoning would not facilitate further subdivision of the property.

As indicated above, approximately half of the property is located within 300 metres of Knowlton Lake, which is an at-capacity lake trout lake. Lot creation is not permitted within 300 metres of the lake unless any sewage systems would be located outside this area. The proximity to the lake, in addition to the size and orientation of the wetlands on the property, significantly impact the development potential of the property.

In addition, any division of the property would need to be through a plan of subdivision or a plan of vacant land condominium, as severances for non-waterfront lots on private lanes are not permitted.

Should a plan of subdivision or plan of condominium application be submitted, numerous studies including a hydrogeological assessment, terrain analysis, environmental impact assessment, species at risk assessment, and traffic impact study would be required. A decision on any future plan of subdivision or plan of condominium would be made by the County of Frontenac with input from South Frontenac Council and would go through a fulsome public consultation process.

Conclusion

It is the opinion of staff that the proposed zoning by-law amendment is consistent and conforms to the Provincial Policy Statement 2020, the County of Frontenac Official Plan, and the South Frontenac Official Plan, and represents good planning for the subject property.

Financial Implications

Not applicable.

Relationship to Strategic Plan

☒ Not applicable to this report.

☐ This initiative is supported by the following priorities of the 2019-2022 Strategic Plan.

- Priority: Choose an item.
- Action Item (if applicable): N/A

Notice/Consultation

Council held a virtual public meeting under the Planning Act on February 1, 2022. Members of the public who spoke at the public meeting or provided written submissions were notified by e-mail that the application would be brought forward to Council for a decision when the meeting agenda was posted on Civic Web.

Application and Supporting Documents

The application and supporting documents (if any) can be accessed through the Township's CivicWeb Document Center, https://southfrontenac.civicweb.net/filepro/documents/79970/

Attachments

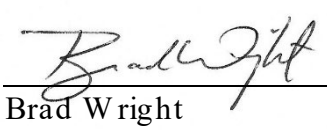
1. By-law 2023-105

Approvals

Report Prepared By:

Christine Woods, RPP, MCIP, Senior Planner

Submitted By:



Brad Wright
Director of Development Services

Approved By:

Louise Fragnito, CPA, CGA
Chief Administrative Officer

TOWNSHIP OF SOUTH FRONTENAC
BY-LAW 2023-105

BEING A BY-LAW TO AMEND BY-LAW 2003-75, AS AMENDED, TO REZONE LAND FROM RURAL (RU) TO LIMITED SERVICE RESIDENTIAL – SPECIAL PROVISION (RLS-15-H) ON LANDS DESCRIBED AS PART OF LOT 3, CONCESSION 8, DISTRICT OF LOUGHBOROUGH: ESTATE OF EVERETT ORSER

WHEREAS pursuant to the provisions of Section 34 of the *Planning Act*, RSO 1990 as amended, the Council of a Municipality may enact by-laws regulating the use of land and the erection, location and use of buildings and structures thereon;

AND WHEREAS By-law 2003-75 being the Zoning By-law regulates the use of land and the erection, location and use of buildings and structures within the Township of South Frontenac;

AND WHEREAS the Council of the Corporation of the Township of South Frontenac considered all written and oral submissions received on this application, the effect of which helped Council make an informed decision;

AND that there be no further notice pursuant to Section 34 (17) of the *Planning Act*;

NOW THEREFORE, the Council of the Corporation of the Township of South Frontenac, hereby enacts as follows:

1. **THAT** Schedule “B” to Zoning By-law Number 2003-75 as amended, is hereby further amended by changing the zoning from Rural (RU) to Limited Service Residential – Special Provision (RLS-15-H) for the lands shown on Schedule “1”.

2. **THAT** Zoning By-law Number 2003-75 as amended is hereby further amended by adding a new section RLS-15-H (Part of Lot 3, Concession 8, District of Loughborough) immediately after the last Limited Service Residential – Special Provision section to read as follows:

   RLS-15-H (Part Lot 3, Concession 8, Loughborough District)

   Notwithstanding the provisions of Section 9 or any other provision of this By-law to the contrary, the lands zoned Special Limited Service Residential (RLS-15) shall be used in accordance with the following:

   - *In addition to the Permitted Uses in Section 9.2, the following uses are permitted:*
     - *Conservation uses, including reforestation and other activities connected with the conservation of soil or wildlife*
     - *A wood lot*

   All other provisions of this By-law shall apply.

   Removal of the Holding (H) Symbol

   The Holding (H) Symbol shall be removed to permit development and site alteration only when a Site Plan Agreement is entered into between the Owner and the Township and is registered on the title of the property, implementing all the recommendations of the Environmental Impact Statement prepared by GEMTEC and dated July 12, 2022.

3. THIS BY-LAW shall come into force in accordance with Section 34 of the Planning Act, 1990, as amended, either upon the date of passage or as otherwise provided by said Section 34.

   Dated at the Township of South Frontenac this 19th day of December, 2023.

Read a first and second time this 19th day of December, 2023.

Read a third time and finally passed this 19th day of December, 2023.

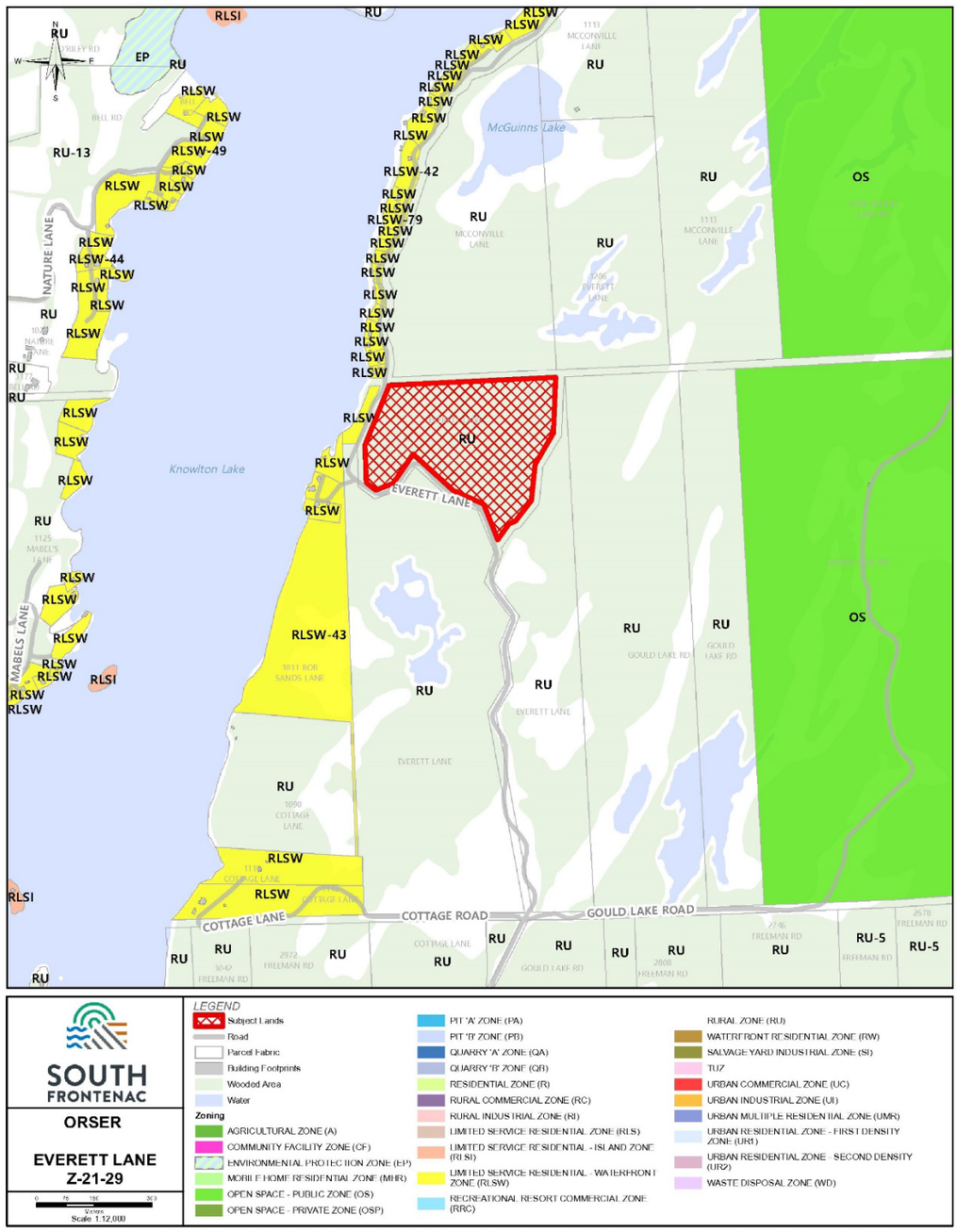
THE CORPORATION OF THE
TOWNSHIP OF SOUTH FRONTENAC

_____
Ron Vandewal, Mayor

_____
James Thompson, Clerk

Schedule 1

This is Schedule "1" to By-law No. 2023-105



Passed this 19th day of December, 2023

Ron Vandewal, Mayor

James Thompson, Clerk

Township of South Frontenac

Staff Report

To:	Council
Prepared by:	Development Services Department
Date of Meeting:	December 19, 2023
Subject:	**Zoning By-law Amendment Application PL-ZBA-2023-0092, Itterman, 2348 Sands Road, Storrington District**

Summary

This report provides Council with information about Zoning By-law Amendment Application PL-ZBA-2023-0092 for 2348 Sands Road. If approved, the zone on the subject lands would be changed from Urban Residential – First Density (UR1) to Urban Residential – First Density – Special Provision (UR1-25 and UR1-26).

Council will review the proposal and invite public input at the statutory public meeting. Staff are recommending that Council pass a by-law during the Council meeting in which the public meeting is held, per Procedural By-law as Amended by By-law 2023-44, as the planning matter is technical in nature (i.e. it fulfills a condition of consent approval).

Recommendation

THAT By-law 2023-106 to amend the zoning on lands known as 2348 Sands Road, Part of Lot 8, Concession 9, District of Storrington, Township of South Frontenac be given first and second reading; and

That By-law 2023-106 be given third reading, signed and sealed.

Background

The subject application is related to consent application PL-BDJ-2023-0029 for the creation of one new lot. The consent application was approved by the Committee of Adjustment on July 13, 2023. The purpose of the rezoning application is to implement a condition that requires the parcels to be rezoned. This change would permit the severed parcel to have a minimum 67 m frontage, and the retained parcel to have a minimum 73 m frontage and 0.6 ha lot area, whereas a minimum 76 m frontage and 0.8 ha lot area is generally required.

Under the *Planning Act*, a public meeting is required to be held to receive comments from the public on the proposed rezoning.

Property Description

The subject property is located on Sands Road in the Battersea Settlement Area. The lands are forested, and generally level. A house and detached garage are located on the far east end of the property. The property is surrounded by residential land uses.

Department and Agency Comments

Public Services and Building Services were not circulated the rezoning application as they had no objection to the approval of the consent application.

Public Comments

No comments were received from the public at the time of writing this report.

Planning Analysis

The proposed zoning by-law amendment was assessed against the applicable policies of the Provincial Policy Statement 2020, County of Frontenac Official Plan, and Township of South Frontenac Official Plan, as well as the provisions of Zoning By-law No. 2003-75.

The Committee of Adjustment had consideration for these planning documents in the decision to grant provisional approval to the consent application.

The Provincial Policy Statement 2020 (PPS) states that rural settlement areas shall be the focus of growth and development and their vitality and regeneration shall be promoted. The PPS also states that planning authorities must consider rural characteristics, the scale of development and the provision of appropriate service levels when directing development in rural settlement areas.

The County of Frontenac Official Plan supports the PPS policies, encouraging the Township to promote mixed use development including residential, commercial, institutional, parks and employment areas (section 3.2). The Township of South Frontenac Official Plan also intends that a majority of new growth will be directed to existing settlement areas where it can be supported by appropriate servicing (section 5.6).

The original parcel was created in 1977. It was 0.4 hectares (1 acre) in size with 45 metres of frontage. The dwelling was constructed in the 1980s. The parcel was enlarged to the current size (2.5 hectares) and configuration through a lot addition in 1994. According to the Owner and Township records, the lot addition was from a larger parcel that was divided equally between family members. The Owner's intent is to divide the property so that as

much as possible of the lands are included with the severed parcel so that it stays with family over the long term.

Section 5.6.1 (ii)(b) of the Township Official Plan states that the minimum lot area for lots shall not be less than 0.8 hectares (2 acres) when serviced by a private well and private sanitary sewage system. The land division policies (Section 7.1) echo the requirement for minimum lot areas for lots created through consent (i.e. for the severed parcel). The UR1 zone also requires a minimum 0.8 hectare (2 acre) lot area.

The subject property is an L-shape. The severed parcel would be the deeper part of the lot (the “stick” of the L), while the retained parcel would be shallower part (the “base” of the L). The severed parcel would be a minimum of 1.9 hectares in area, which exceeds the minimum lot area requirements.

In order to achieve a satisfactory geometric design of the severed and retained parcels, and to maximize the area of the retained parcel, the severed parcel would have 67 metres of frontage. This frontage was confirmed by an Ontario Land Surveyor. The Official Plan does not specify a minimum lot frontage for residential lots in settlement areas. However, the UR1 zone requires a minimum of 76 metres of frontage. It is the opinion of Planning staff that a reduced frontage of 67 metres is acceptable given that there are opportunities for a safe entrance to the severed parcel (per Public Services review), and that the frontage would exceed the existing frontages of most lots in the immediate area.

The retained parcel would be 0.6 hectares in size. The retained parcel would be less than the 0.8 hectares required by the Official Plan and the Zoning By-law. The retained parcel would have 73 metres of frontage according to the Ontario Land Surveyor.

The Township Official Plan requires a minimum 0.8 hectare lot area to ensure adequate separation distances between wells and sewage systems so that groundwater quality is not impacted, to avoid an overdeveloped appearance, and to help ensure a reasonable separation between residential uses.

Section 5.6.1 of the Township Official Plan suggests that the minimum lot area could be changed subject to the approval of Council. This approval would come in the form of a zoning by-law amendment to permit the retained parcel to have a lesser lot area. Staff note that Council has spoken favourably of similar proposals that support infill development in settlement areas.

The subject property is in a low-density residential area, with lot areas ranging from 0.4 hectares to 7.5 hectares. The average area is 1.6 hectares (0.6 hectares when the largest lots are excluded from the calculation). There are no further opportunities for lot creation in the immediate area because all other useable frontage has already been divided. The

severed parcel would be twice the required size. The retained parcel is already developed so any potential impact to groundwater quality and quantity is anticipated to be the same regardless of whether the parcel is 0.8 hectares or 0.6 hectares.

Private wells and sewage systems are the only servicing option in Battersea. The Township must be satisfied that any new lot created by consent can be serviced by a sewage disposal facility and adequate water supply. Building Services was satisfied that the severed parcel has flexibility to locate a sewage disposal system. The Township typically requires the ability for a parcel to be serviced by a private well as a condition of consent approval. The retained parcel would contain the existing dwelling, well, and sewage system.

Conclusion

It is the opinion of staff that the proposed zoning by-law amendment is consistent and conforms to the Provincial Policy Statement 2020, the County of Frontenac Official Plan, and the South Frontenac Official Plan, and represents good planning for the subject lands.

Staff are recommending that Council pass a by-law during the Council meeting in which the public meeting is held, per Procedural By-law as Amended by By-law 2023-44, as the planning matter is technical in nature. Specifically, the Committee of Adjustment had consideration for all applicable policy in the decision to grant provisional approval to the consent applications, and the by-law will fulfill one of their conditions.

Financial Implications

Not applicable.

Relationship to Strategic Plans

☒ Not applicable to this report.

☐ This initiative is supported by the following priorities of the 2019-2022 Strategic Plan.

- Priority: Choose an item.
- Action Item (if applicable): N/A

Climate Considerations

☒ Not applicable to this report.

☐ This initiative supports climate change mitigation/adaption efforts in South Frontenac; and/or impacts the Township's resilience to climate change.

Notice/Consultation

Notice of the Statutory Public Meeting was given pursuant to the requirements of the Planning Act, 20 days in advance of the Public Meeting. This included notice given:

- by mail to every owner of land within 120 metres of the subject lands
- by posting notice signs on the subject lands
- by e-mail to prescribed persons and public bodies

Application and Supporting Documents

The application and supporting documents (if any) can be accessed through the Township's CivicWeb Document Center, https://southfrontenac.civicweb.net/filepro/documents/90083/

Attachments

1. By-law 2023-106

Approvals

Report Prepared By:

Christine Woods, RPP, MCIP, Senior Planner

Submitted By:

Brad Wright
Director of Development Services

Approved By:

Louise Fragnito, CPA, CGA
Chief Administrative Officer

TOWNSHIP OF SOUTH FRONTENAC
BY-LAW 2023-106

BEING A BY-LAW TO AMEND BY-LAW 2003-75, AS AMENDED, TO REZONE LAND FROM URBAN RESIDENTIAL – FIRST DENSITY (UR1) TO URBAN RESIDENTIAL – FIRST DENSITY – SPECIAL PROVISION (UR1-25 AND UR1-26) ON LANDS DESCRIBED AS 2348 SANDS ROAD, PART OF LOT 8, CONCESSION 9, DISTRICT OF STORRINGTON

WHEREAS pursuant to the provisions of Section 34 of the *Planning Act*, RSO 1990 as amended, the Council of a Municipality may enact by-laws regulating the use of land and the erection, location and use of buildings and structures thereon;

AND WHEREAS By-law 2003-75 being the Zoning By-law regulates the use of land and the erection, location and use of buildings and structures within the Township of South Frontenac;

AND WHEREAS the Council of the Corporation of the Township of South Frontenac considered all written and oral submissions received on this application, the effect of which helped Council make an informed decision;

AND that there be no further notice pursuant to Section 34 (17) of the *Planning Act*;

NOW THEREFORE, the Council of the Corporation of the Township of South Frontenac, hereby enacts as follows:

1. **THAT** Schedule “H” to Zoning By-law Number 2003-75 as amended, is hereby further amended by changing the zoning from Urban Residential – First Density (UR1) to Urban Residential – First Density – Special Provision (UR1-25 and UR1-26) for the lands shown on Schedule “1”.

2. **THAT** Zoning By-law Number 2003-75 as amended is hereby further amended by adding new sections UR1-25 and UR1-26 (Part of Lot 8, Concession 9, District of Storrington) immediately after the last Urban Residential – First Density – Special Provision section to read as follows:

   UR1-25 (Part of Lot 8, Concession 9, District of Storrington)

   Notwithstanding the provisions of Section 14 or any other provision of this By-law to the contrary, on the lands zoned Special Urban Residential – First Density (UR1-25), the following provisions apply:

   - *Lot Area (Minimum)* *0.6 hectares (1.4 acres)*
   - *Lot Frontage (Minimum)* *73 metres (239.5 ft)*

   All other provisions of this by-law shall apply.

   UR1-26 (Part of Lot 8, Concession 9, District of Storrington)

   Notwithstanding the provisions of Section 14 or any other provision of this By-law to the contrary, on the lands zoned Special Urban Residential – First Density (UR1-26), the following provisions apply:

   - *Lot Frontage (Minimum)* *67 metres (219.8 ft)*

   All other provisions of this by-law shall apply.

3. THIS BY-LAW shall come into force in accordance with Section 34 of the Planning Act, 1990, as amended, either upon the date of passage or as otherwise provided by said Section 34.

   Dated at the Township of South Frontenac this 19th day of December, 2023.

   Read a first and second time this 19th day of December, 2023.

Read a third time and finally passed this 19th day of December, 2023.

THE CORPORATION OF THE
TOWNSHIP OF SOUTH FRONTENAC

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Ron Vandewal, Mayor

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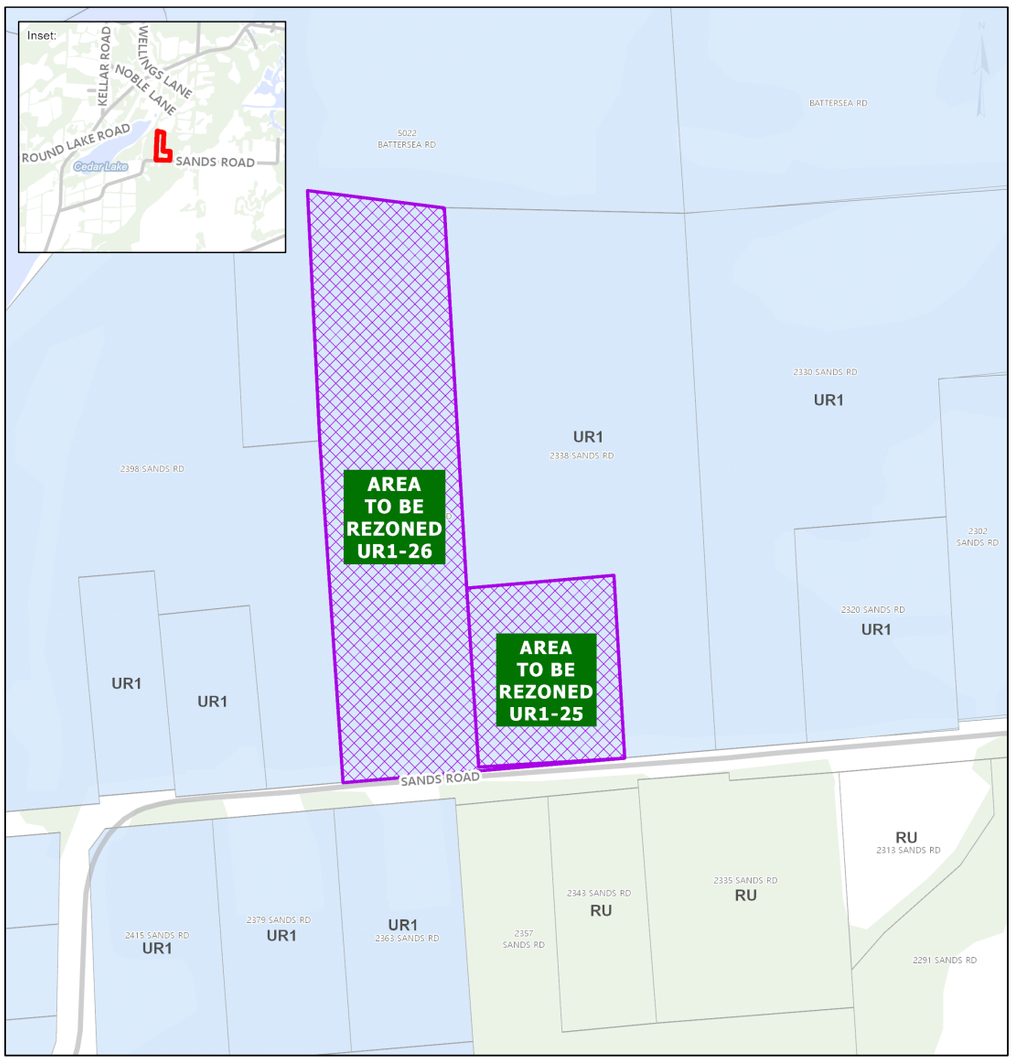
James Thompson, Clerk

Schedule 1

This is Schedule “1” to By-law No. 2023-106



Passed this 19th day of December, 2023

Ron Vandewal, Mayor

James Thompson, Clerk

TOWNSHIP OF SOUTH FRONTENAC
BY-LAW 2023-107

A BY-LAW TO CONFIRM GENERALLY ALL ACTIONS AND PROCEEDINGS OF THE COUNCIL MEETING OF THE CORPORATION OF THE TOWNSHIP OF SOUTH FRONTENAC ON DECEMBER 19, 2023

Whereas Section 8 of the *Municipal Act*, S.O. 2001 c. 25 and amendments thereto provides that a municipality has the capacity, rights powers and privileges of a natural person for the purpose of exercising its authority under the *Municipal Act* of any other *Act;* and;

Whereas Subsection 2 of Section 11 of the *Municipal Act* S.O. 2001, c. 25 and amendments thereto provides that a lower-tier municipality and an upper-tier municipality may pass by-laws respecting matters within the spheres of the jurisdiction described in the Table to Subsection 2, subject to certain provisions, and;

Whereas Section 5 of the *Municipal Act*, S.O 2001 c. 25 and amendments thereto provides that a municipal power, including a municipality's capacity, rights, powers and privileges under Section 8 shall be exercised by its council and by by-law unless the municipality is specifically authorized to do otherwise, and

Whereas the Council of the Township of South Frontenac deems it expedient to confirm its actions and proceedings;

NOW THEREFORE BE IT RESOLVED THAT THE COUNCIL CORPORATION OF THE TOWNSHIP OF SOUTH FRONTENAC, HEREBY ENACTS AS FOLLOWS:

1. The all actions and proceedings of the Council of the Corporation of the Township of South Frontenac taken at its regular meeting held on December 19, 2023 be confirmed as actions for which the municipality has the capacity, rights, powers and privileges of a natural person.

2. That all actions and proceedings of the Council of the Corporation of the Township of South Frontenac held December 19, 2023 be confirmed as being matters within the spheres of jurisdiction described in Subsection 2 of Section 11 of the *Municipal Act*, S.O. 2001, c.25 and amendments thereto.

3. That all actions and proceedings of the Council of the Corporation of the Township of South Frontenac taken at its regular meeting held on December 5, 2023 except those taken by by-law and those required by bylaw to be done by resolution are hereby sanctioned, ratified and confirmed as though set out within and forming part of this by-law.

4. Execution by the Mayor and the Clerk of all Deeds, Instruments and other Documents necessary to give effect to any such Resolution, Motion or other action and the affixing of the Corporate Seal to any such Deed, Instruments or other Documents is hereby authorized and confirmed.

5. This By-law shall come into force and take effect on the date of its passage.

Read a first and second time this 19th day of December 2023.

Read a third time and finally passed this 19th day of December 2023.

THE CORPORATION OF THE TOWNSHIP OF SOUTH FRONTENAC

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Ron Vandewal, Mayor

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James Thompson, Clerk