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Staff Report

Operations – Water & Wastewater Services

Report To: **COW-Operations_Planning_and_Development_Services**
Meeting Date: August 27, 2024
Report Number: CSOPS.24.056
Title: Single Source for Inflow and Infiltration Flow Monitoring
Prepared by: Allison Kershaw, Manager of Water & Wastewater Services

A. Recommendations

THAT Council receive Staff Report CSOPS.24.056, entitled "Single Source for Inflow and Infiltration Flow Monitoring";

AND THAT Council approve the single source procurement of JL Richards/Civica for continuation of sanitary flow monitoring to identify areas of Inflow and Infiltration.

B. Overview

This report seeks Council approval to procure the services of JL Richards and Civica to continue with flow monitoring in the sanitary system to assist with, narrowing in on areas contributing to significant inflow and infiltration to the collection system.

C. Background

The Town's Wastewater Master Plan included a years worth of sanitary sewer flow monitoring in 12 different locations throughout the Town. This analysis has identified large areas that are contributing significant volumes of inflow and infiltration (I&I). To narrow down the area of high flows, additional flow monitoring is required.

This work will be building on the information previously gathered through the Wastewater Master Plan. The Master Plan was awarded to JL Richards/Civica through the Town's competitive bid process.

D. Analysis

The flow monitoring that was undertaken during the Town's Wastewater Master Plan identified high flows coming from some larger catchment areas. The additional flow monitoring is aimed to focus in on significant contributors and identify mitigation measures.

The work will include the installation and maintenance of seventeen flow meters for a four-month period in the collection system, collection and analysis of both flow data and rainfall

data, preparation of a technical memorandum summarizing the findings of the assessment, and development of an action plan to address identified issues, including infrastructure upgrades and next steps for private homeowners. The placement of the flow meters can be seen in Attachment 1.

Addressing inflow and infiltration is crucial for ensuring the long-term sustainability and efficiency of the wastewater system. By investing in a comprehensive flow monitoring program, the Town can proactively manage these challenges and optimize our operations.

Purchasing Policy POL.COR.07.05 notes:

Single Sourcing is a method of procurement whereby there is more than one vendor able to supply and a purchase order is issued, or contract awarded without a competitive bidding process. Single Sourcing will be permitted if one or more of the following circumstances apply:

2. the compatibility of a purchase with existing equipment, product standards, facilities or service is a paramount consideration.

7. when competitive procurement may be found to be impractical.

The use of Sole and Single Sourcing with a particular vendor exceeding $25,000 must be approved by Council. In order for a division to sole or single source for goods or services exceeding $25,000, an operating strategy must be presented with Purchasing input and approved by Council, outlining the rationale. Input must be sought from the Manager of Purchasing to ensure the purchasing principles in the Town's Procedures are taken into consideration and risk to the Town is minimized.

As JL Richards and Civica are the Town's consultants for the Wastewater Master Plan, there is an opportunity for efficiencies to have them continue the work related to the Master Plan.

E. Strategic Priorities

1. Communication and Engagement

We will enhance communications and engagement between Town Staff, Town residents and stakeholders

2. Organizational Excellence

We will continually seek out ways to improve the internal organization of Town Staff and the management of Town assets.

3. Community

We will protect and enhance the community feel and the character of the Town, while ensuring the responsible use of resources and restoration of nature.

4. Quality of Life

We will foster a high quality of life for full-time and part-time residents of all ages and stages, while welcoming visitors.

F. Environmental Impacts

Inflow and infiltration to the sanitary collection system is adding unnecessary flow into the system, putting the system at risk of backing up. The additional flow monitoring will assist staff in being able to identify the source. Back-ups in the sewer system can result in overflows to the natural environment and potentially sewage backing up in resident's basements.

Addressing the inflow and infiltration issues in the collection system will reduce the number of unnecessary expansions of sewage pumping stations and treatment plants.

G. Financial Impacts

The 2024 budget included $165,000 to address inflow and infiltration. The work proposed by JL Richards has a cost of $109,888. Staff are requesting a total of $126,500; this includes a 15% contingency.

H. In Consultation With

Serena Wilgress, Manager of Purchasing & Risk Management

Michael Switzer, Deputy Treasurer/Manager of Budget & Accounting

Mark Service, Wastewater Supervisor

I. Public Engagement

The topic of this Staff Report has not been the subject of a Public Meeting and/or a Public Information Centre as neither a Public Meeting nor a Public Information Centre are required. However, any comments regarding this report should be submitted to Allison Kershaw, Manager of Water & Wastewater Services managerwww@thebluemountains.ca .

J. Attached

1. Attachment 1 – Proposed locations of flow meters

Respectfully submitted,

Allison Kershaw,
Manager of Water & Wastewater Services

Alan Pacheco
Director of Operations

For more information, please contact:
Allison Kershaw, Manager of Water & Wastewater Services
managerwww@thebluemountains.ca
519-599-3131 extension 226

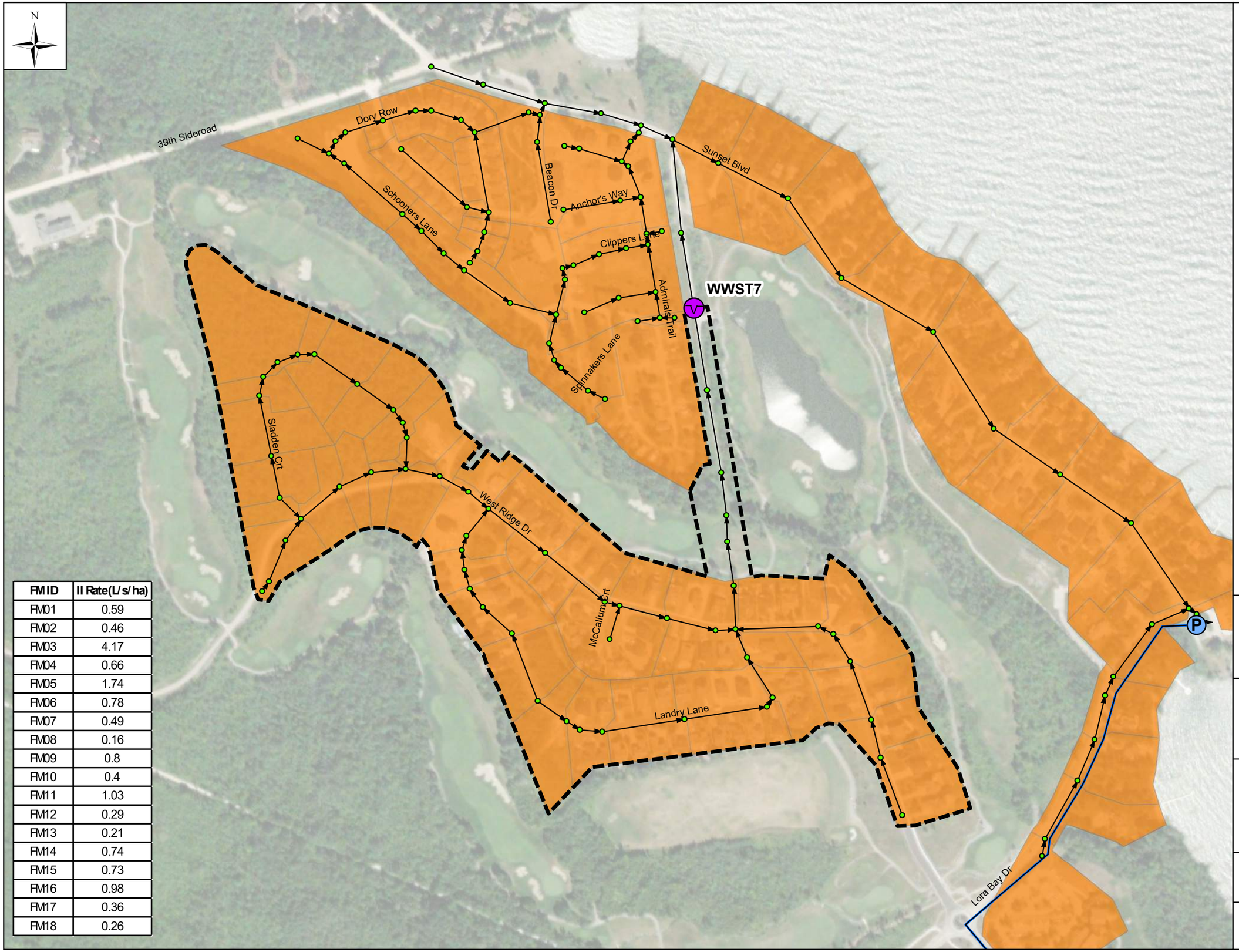
Report Approval Details

Document Title:	CSOPS.24.056 Single Source for Inflow and Infiltration Flow Monitoring.docx
Attachments:	Attachment 1- Proposed locations of flow meters
Final Approval Date:	Jul 23, 2024

This report and all of its attachments were approved and signed as outlined below:

Allison Kershaw - Jul 18, 2024 - 3:24 PM

Alan Pacheco - Jul 23, 2024 - 8:52 AM



FM ID	II Rate (L/s/ha)
FM01	0.59
FM02	0.46
FM03	4.17
FM04	0.66
FM05	1.74
FM06	0.78
FM07	0.49
FM08	0.16
FM09	0.8
FM10	0.4
FM11	1.03
FM12	0.29
FM13	0.21
FM14	0.74
FM15	0.73
FM16	0.98
FM17	0.36
FM18	0.26

Legend

- Sanitary Pumping Station
- Proposed Additional Flow Monitoring Locations 2024
- Existing Flow Monitoring Locations
- Sanitary Manholes
- Sanitary Sewers
- Forcemains
- Proposed Flow Monitoring Drainage Area Boundary

II Rate - 25yr (L/s/ha)

- < 0.28
- 0.28 - 0.5
- 0.5 - 1.0
- > 1.0
- N/A

CIVICA

Town of Blue Mountains

Figure (1):
Proposed Additional Flow Monitoring Locations 2024

Drawn By: J.H. Date: July 5, 2024

0 50 100 200 Meters

N

WWSTR27

39th Sideroad
Dory Row
Schoolers Lane
Bergen Dr
Anchor's Way
Clippers Lane
Admirals Trail
Spinnakers Lane
Sunset Blvd
Sladden Crt
West Ridge Dr
McCallum Crt
Landry Lane
Lora Bay Dr

FM ID	II Rate (L/s/ha)
FM01	0.59
FM02	0.46
FM03	4.17
FM04	0.66
FM05	1.74
FM06	0.78
FM07	0.49
FM08	0.16
FM09	0.8
FM10	0.4
FM11	1.03
FM12	0.29
FM13	0.21
FM14	0.74
FM15	0.73
FM16	0.98
FM17	0.36
FM18	0.26

Legend

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- < 0.28
- 0.28 - 0.5
- 0.5 - 1.0
- > 1.0
- N/A

CIVICA

Town of Blue Mountains

Figure (2):
Proposed Additional Flow Monitoring Locations 2024

Drawn By: J.H. Date: July 5, 2024

0 50 100 200 Meters

FM ID	II Rate(L/s/ha)
FM01	0.59
FM02	0.46
FM03	4.17
FM04	0.66
FM05	1.74
FM06	0.78
FM07	0.49
FM08	0.16
FM09	0.8
FM10	0.4
FM11	1.03
FM12	0.29
FM13	0.21
FM14	0.74
FM15	0.73
FM16	0.98
FM17	0.36
FM18	0.26

Legend

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II Rate - 25yr (L/s/ha)

- < 0.28
- 0.28 - 0.5
- 0.5 - 1.0
- > 1.0
- N/A

CIVICA

Town of Blue Mountains

Figure (3):
Proposed Additional Flow Monitoring Locations 2024

Drawn By: J.H. Date: July 5, 2024

0 50 100 200 Meters

N

39th Sideroad
Dory Row
Schooners Lane
Beacon Dr
Anchor's Way
Clippers Lane
Admirals Trail
Shipmakers Lane
Sunset Blvd
Sladden Crt
West Ridge Dr
McCallum Crt
Landry Lane
Lora Bay Dr
WWST18

FM ID	II Rate(L/s/ha)
FM01	0.59
FM02	0.46
FM03	4.17
FM04	0.66
FM05	1.74
FM06	0.78
FM07	0.49
FM08	0.16
FM09	0.8
FM10	0.4
FM11	1.03
FM12	0.29
FM13	0.21
FM14	0.74
FM15	0.73
FM16	0.98
FM17	0.36
FM18	0.26

Legend

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II Rate - 25yr (L/s/ha)

- < 0.28
- 0.28 - 0.5
- 0.5 - 1.0
- > 1.0
- N/A

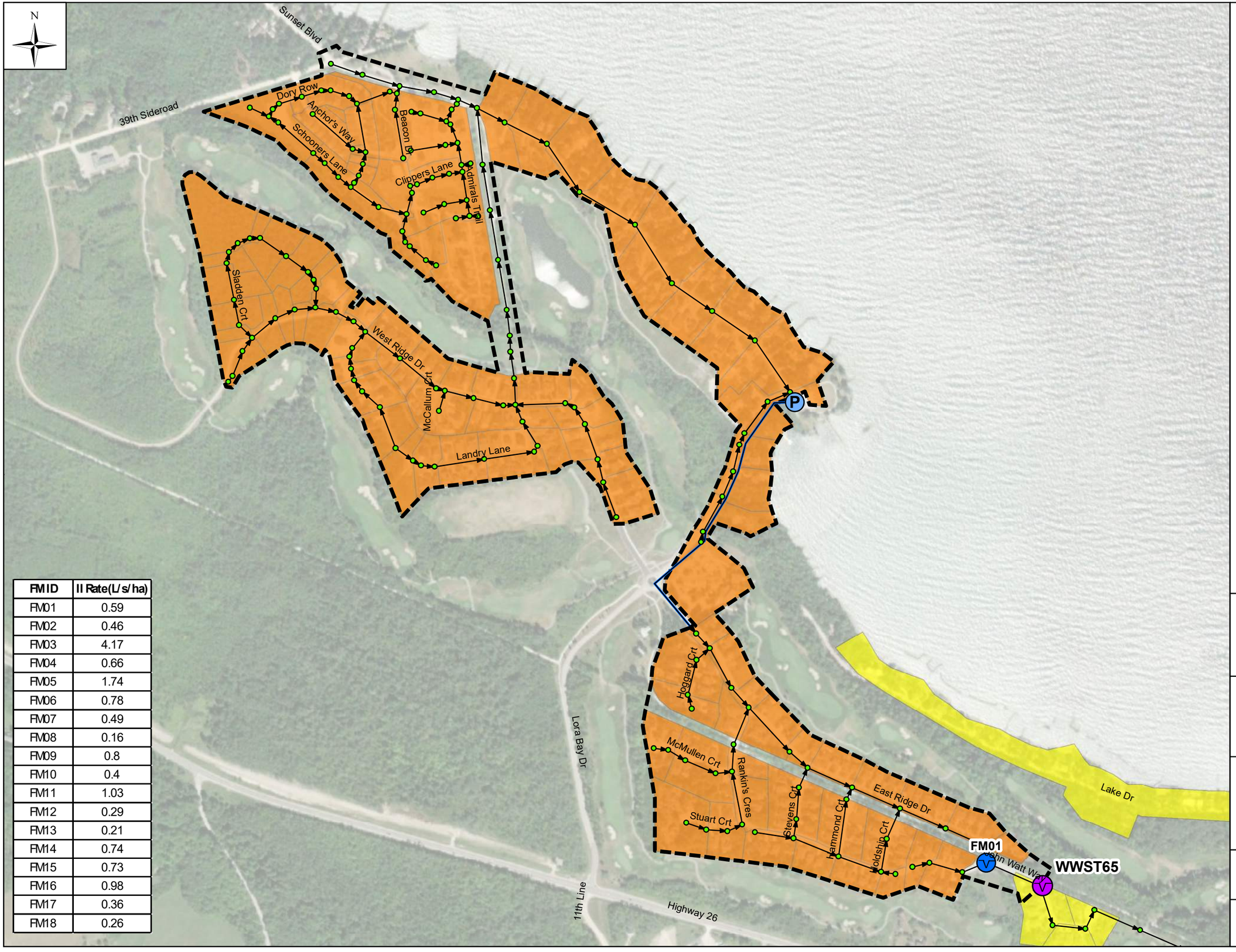
CIVICA

Town of Blue Mountains

Figure (4):
Proposed Additional Flow Monitoring Locations 2024

Drawn By: J.H. Date: July 5, 2024

0 50 100 200 Meters



FM ID	II Rate(L/s/ha)
FM01	0.59
FM02	0.46
FM03	4.17
FM04	0.66
FM05	1.74
FM06	0.78
FM07	0.49
FM08	0.16
FM09	0.8
FM10	0.4
FM11	1.03
FM12	0.29
FM13	0.21
FM14	0.74
FM15	0.73
FM16	0.98
FM17	0.36
FM18	0.26

Legend

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II Rate - 25yr (L/s/ha)

- < 0.28
- 0.28 - 0.5
- 0.5 - 1.0
- > 1.0
- N/A

CIVICA

Town of Blue Mountains

Figure (5):
Proposed Additional Flow Monitoring Locations 2024

Drawn By: J.H. Date: July 5, 2024

0 75 150 300 Meters

N

FM ID	II Rate (L/s/ha)
FM01	0.59
FM02	0.46
FM03	4.17
FM04	0.66
FM05	1.74
FM06	0.78
FM07	0.49
FM08	0.16
FM09	0.8
FM10	0.4
FM11	1.03
FM12	0.29
FM13	0.21
FM14	0.74
FM15	0.73
FM16	0.98
FM17	0.36
FM18	0.26

Legend

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II Rate - 25yr (L/s/ha)

- < 0.28
- 0.28 - 0.5
- 0.5 - 1.0
- > 1.0
- N/A

CIVICA

Town of Blue Mountains

Figure (6):
Proposed Additional Flow Monitoring Locations 2024

Drawn By: J.H. Date: July 5, 2024

0 125 250 500 Meters

N

WWST238

Pyatt Ave
Shirley Crt
Applevale Crt
Alfred St W
Napier St W
Orchard Dr
Cardinal Cres
Dove Dr
Victoria St S
Warbler Way
10th Line
Abbotts Lane
Alfred St E
Ferguson Ave
Cobblestone Lane
Riverbank Crt
Limestone Lane
Napier St E
Bruce St S
Duncan St W
Duncan St E
Russell St W
Russell St E
Russell Cres
Marshall St
Mary St
Edward St
Charles St

FM ID	II Rate (L/s/ha)
FM01	0.59
FM02	0.46
FM03	4.17
FM04	0.66
FM05	1.74
FM06	0.78
FM07	0.49
FM08	0.16
FM09	0.8
FM10	0.4
FM11	1.03
FM12	0.29
FM13	0.21
FM14	0.74
FM15	0.73
FM16	0.98
FM17	0.36
FM18	0.26

Legend

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II Rate - 25yr (L/s/ha)

- < 0.28
- 0.28 - 0.5
- 0.5 - 1.0
- > 1.0
- N/A

CIVICA

Town of Blue Mountains

Figure (7):
Proposed Additional Flow Monitoring Locations 2024

Drawn By: J.H. Date: July 5, 2024

0 25 50 100 Meters

N

Pyatt Ave

Pyatt Crt

Shirley Crt

Applevale Crt

Alfred St W

Orchard Dr

Napier St W

Abbotts Lane

Edmund

Ferguson Ave

Alice St E

Moore Cres

WWST251

Alfred St E

Cobblestone Lane

Riverbank Crt

Cobblestone Lane

Napier St E

Bruce St S

Russell St E

Marsh St

Mary St

FM ID	II Rate (L/s/ha)
FM01	0.59
FM02	0.46
FM03	4.17
FM04	0.66
FM05	1.74
FM06	0.78
FM07	0.49
FM08	0.16
FM09	0.8
FM10	0.4
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FM12	0.29
FM13	0.21
FM14	0.74
FM15	0.73
FM16	0.98
FM17	0.36
FM18	0.26

Legend

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II Rate - 25yr (L/s/ha)

- < 0.28
- 0.28 - 0.5
- 0.5 - 1.0
- > 1.0
- N/A

CIVICA

Town of Blue Mountains

Figure (8):
Proposed Additional Flow Monitoring Locations 2024

Drawn By: J.H. Date: July 5, 2024

0 25 50 100 Meters

N

King St W

Bruce St N

Hester St

Louisa St E

Bridge St E

Mill St

King St E

McAulay St S

Arthur St E

Bay St E

Cottage Ave

McAulay St N

Huron St E

Elgin St N

Elgin St S

FM04

WWST1097

FM ID	II Rate(L/s/ha)
FM01	0.59
FM02	0.46
FM03	4.17
FM04	0.66
FM05	1.74
FM06	0.78
FM07	0.49
FM08	0.16
FM09	0.8
FM10	0.4
FM11	1.03
FM12	0.29
FM13	0.21
FM14	0.74
FM15	0.73
FM16	0.98
FM17	0.36
FM18	0.26

Legend

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II Rate - 25yr (L/s/ha)

- < 0.28
- 0.28 - 0.5
- 0.5 - 1.0
- > 1.0
- N/A

CIVICA

Town of Blue Mountains

Figure (9):
Proposed Additional Flow Monitoring Locations 2024

Drawn By: J.H. Date: July 5, 2024

0 25 50 100 Meters

FM ID	II Rate (L/s/ha)
FM01	0.59
FM02	0.46
FM03	4.17
FM04	0.66
FM05	1.74
FM06	0.78
FM07	0.49
FM08	0.16
FM09	0.8
FM10	0.4
FM11	1.03
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FM15	0.73
FM16	0.98
FM17	0.36
FM18	0.26

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II Rate - 25yr (L/s/ha)

- < 0.28
- 0.28 - 0.5
- 0.5 - 1.0
- > 1.0
- N/A

CIVICA

Town of Blue Mountains

Figure (10):
Proposed Additional Flow Monitoring Locations 2024

Drawn By: J.H. Date: July 5, 2024

0 75 150 300 Meters

N

WWST864

Alta Rd
Arrowhead Rd
Alpine Springs Crt
Interlaken Crt
Nipissing Cres
Arrowhead Cres
Courchevel Cres
Arnot Cres
Blueski George Cres
Davos Dr
Cortina Cres
Sleepy Hollow Rd
Wyandot Crt
Petun Dr
Craigleith Rd
Craigleith Walk
Aspen Way
Chamonix Cres
St. Moritz Cres
McQueen Crt
Alexandra Way
Highway 26
Lakeshore Rd E
Kitzbuhl Cres
Innsbruck Lane
Salzburg Pl
Schoolhouse Crt
Grey Road 19
Lendvay Alley

FM ID	II Rate (L/s/ha)
FM01	0.59
FM02	0.46
FM03	4.17
FM04	0.66
FM05	1.74
FM06	0.78
FM07	0.49
FM08	0.16
FM09	0.8
FM10	0.4
FM11	1.03
FM12	0.29
FM13	0.21
FM14	0.74
FM15	0.73
FM16	0.98
FM17	0.36
FM18	0.26

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II Rate - 25yr (L/s/ha)

- < 0.28
- 0.28 - 0.5
- 0.5 - 1.0
- > 1.0
- N/A

CIVICA

Town of Blue Mountains

Figure (11):
Proposed Additional Flow Monitoring Locations 2024

Drawn By: J.H. Date: July 5, 2024

0 50 100 200 Meters

N

WWST875

Davos Dr
Arnot Cres
Courchevel Cres
Blueski George Cres
Aspen Way
Chamonix Cres
St. Moritz Cres
Kitzbuhl Cres
Schoolhouse Crt
Lakeshore Rd E
Highway 26
Sleepy Hollow Rd
McQueen Crt
Innsbruck Lane
Salzburg Pl
Grey Road 19
Wyandot Crt
Petun Dr
Alexandra Way
Lendvay Alley
Craigleith Walk
Craigleith Rd
Comet Lane
Birches Blvd
Manitou Crt
National Dr
Venture Blvd
Helen St
Tyrolean Lane
Craigmore Cres
Arlberg Cres

FM ID	II Rate (L/s/ha)
FM01	0.59
FM02	0.46
FM03	4.17
FM04	0.66
FM05	1.74
FM06	0.78
FM07	0.49
FM08	0.16
FM09	0.8
FM10	0.4
FM11	1.03
FM12	0.29
FM13	0.21
FM14	0.74
FM15	0.73
FM16	0.98
FM17	0.36
FM18	0.26

Legend

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II Rate - 25yr (L/s/ha)

- < 0.28
- 0.28 - 0.5
- 0.5 - 1.0
- > 1.0
- N/A

CIVICA

Town of Blue Mountains

Figure (12):
Proposed Additional Flow Monitoring Locations 2024

Drawn By: J.H. Date: July 5, 2024

0 50 100 200 Meters

N

Comet Lane
Birches Blvd
Manitou Crt
National Dr
Venture Blvd
Grey Road 19
Helen St
Craigmore Cres
Pilsen Way
Tyrolean Lane
Birch View Trail
Arlberg Cres
FM13
Crossan Cr
Lisa's Lane
Laurie's Crt
WWST710
Ridgeview Dr
FM16
Monterra Rd
Brooker Blvd
Kellie's Way
Kandahar Lane
Farm Gate Rd
FM14
FM15
Settlers Way
Pioneer Lane
Heritage Dr
Happy Valley Rd
Jozo Weider Blvd
Lucille Wheeler Cres
Drake's Path
Wintergreen Pl
Fairway Crt
Ann Heggtveit Dr

FM ID	II Rate(L/s/ha)
FM01	0.59
FM02	0.46
FM03	4.17
FM04	0.66
FM05	1.74
FM06	0.78
FM07	0.49
FM08	0.16
FM09	0.8
FM10	0.4
FM11	1.03
FM12	0.29
FM13	0.21
FM14	0.74
FM15	0.73
FM16	0.98
FM17	0.36
FM18	0.26

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II Rate - 25yr (L/s/ha)

- < 0.28
- 0.28 - 0.5
- 0.5 - 1.0
- > 1.0
- N/A

CIVICA

Town of Blue Mountains

Figure (13):
Proposed Additional Flow Monitoring Locations 2024

Drawn By: J.H. Date: July 5, 2024

0 50 100 200 Meters

N

Grey Road 19

Happy Valley Rd

Arlberg Cres

Pilsen Way

Settlers Way

Craigmore Cres

Pioneer Lane

Heritage Dr

Farm Gate Rd

Kandahar Lane

Kellie's Way

Brooker Blvd

WWST602

Lucille Wheeler Cres

Drake's Path

Lucille Wheeler Lane

Jozo Welder Blvd

Ann Heggtveit Dr

Ann Heggtveit Dr

Wintergreen Pl

FM ID	II Rate (L/s/ha)
FM01	0.59
FM02	0.46
FM03	4.17
FM04	0.66
FM05	1.74
FM06	0.78
FM07	0.49
FM08	0.16
FM09	0.8
FM10	0.4
FM11	1.03
FM12	0.29
FM13	0.21
FM14	0.74
FM15	0.73
FM16	0.98
FM17	0.36
FM18	0.26

Legend

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II Rate - 25yr (L/s/ha)

- < 0.28
- 0.28 - 0.5
- 0.5 - 1.0
- > 1.0
- N/A

CIVICA

Town of Blue Mountains

Figure (14):
Proposed Additional Flow Monitoring Locations 2024

Drawn By: J.H. Date: July 5, 2024

0 25 50 100 Meters

N

Pioneer Lane

Heritage Dr

Grey Road 19

Lucille Wheeler Cres

Lucille Wheeler Lane

Drake's Path

WWST605

Wintergreen Pl

Fairway Crt

Ann Heggtveit Dr

Jozo Weider Blvd

Gord Canning Dr

FM ID	II Rate (L/s/ha)
FM01	0.59
FM02	0.46
FM03	4.17
FM04	0.66
FM05	1.74
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- < 0.28
- 0.28 - 0.5
- 0.5 - 1.0
- > 1.0
- N/A

CIVICA

Town of Blue Mountains

Figure (15):
Proposed Additional Flow Monitoring Locations 2024

Drawn By: J.H. Date: July 5, 2024

0 25 50 100 Meters

N

WWST621

FM18

Lucille Wheeler Cres
Drake's Path
Wintergreen Pl
Fairway Crt
Snowbridge Way
Ann Heggtveit Dr
Jozo Weider Blvd
Grey Road 19
Creekwood Crt
Springside Cres
Cattail Cres
Stoneleigh Dr
Reed Way
Stillwater Cres
Carmichael Cres
Campbell Cres
Kinsey Pl
Plater St
Gord Canning Dr
Black Willow Cres
Courtland St
Sycamore St
Crosswinds Blvd
Yellow Birch Cres

FM ID	II Rate (L/s/ha)
FM01	0.59
FM02	0.46
FM03	4.17
FM04	0.66
FM05	1.74
FM06	0.78
FM07	0.49
FM08	0.16
FM09	0.8
FM10	0.4
FM11	1.03
FM12	0.29
FM13	0.21
FM14	0.74
FM15	0.73
FM16	0.98
FM17	0.36
FM18	0.26

Legend

- Sanitary Pumping Station
- Proposed Additional Flow Monitoring Locations 2024
- Existing Flow Monitoring Locations
- Sanitary Manholes
- Sanitary Sewers
- Forcemains
- Proposed Flow Monitoring Drainage Area Boundary

II Rate - 25yr (L/s/ha)

- < 0.28
- 0.28 - 0.5
- 0.5 - 1.0
- > 1.0
- N/A

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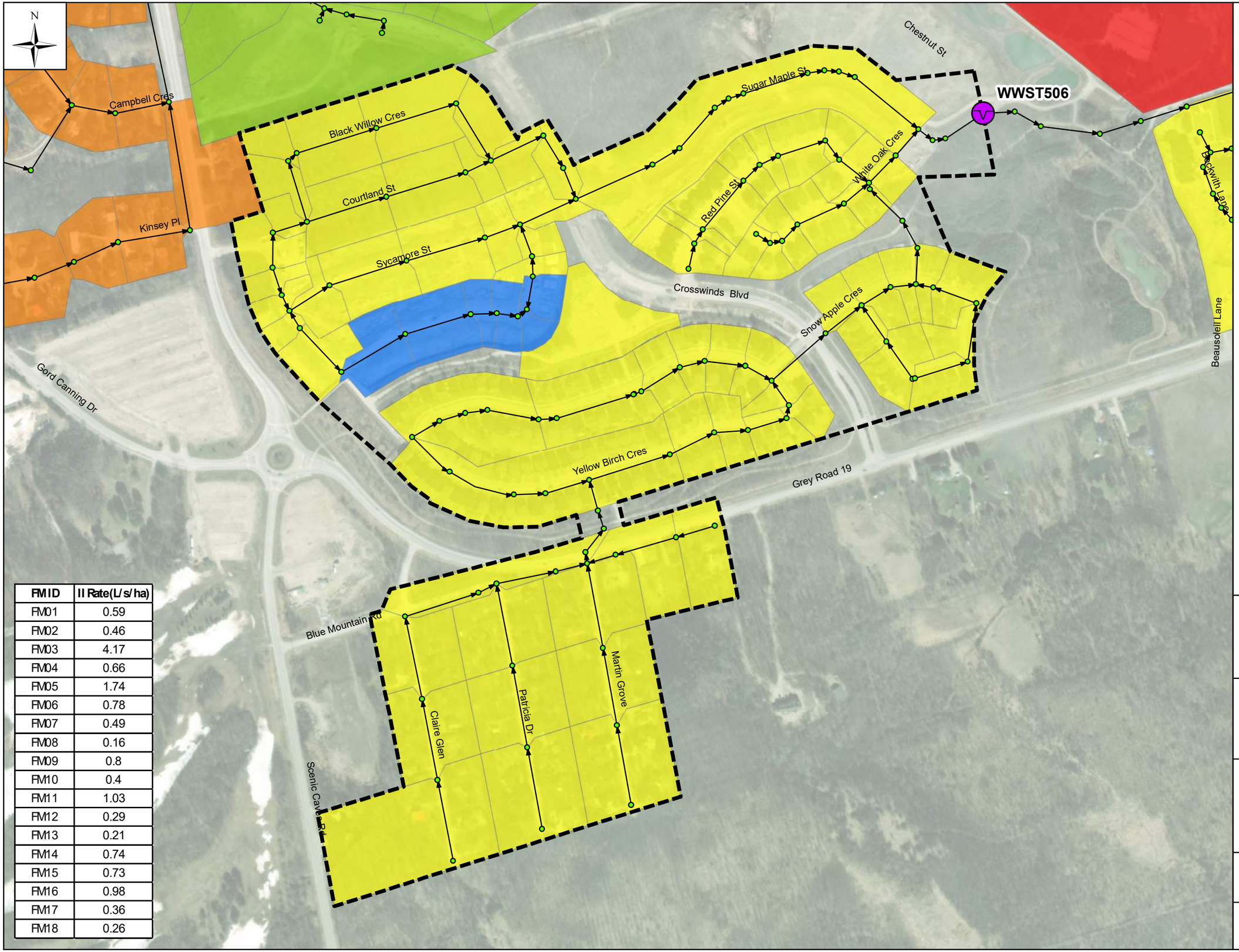
Town of Blue Mountains

Figure (16):
Proposed Additional Flow Monitoring Locations 2024

Drawn By: J.H. Date: July 5, 2024

0 50 100 200 Meters



FM ID	II Rate (L/s/ha)
FM01	0.59
FM02	0.46
FM03	4.17
FM04	0.66
FM05	1.74
FM06	0.78
FM07	0.49
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Legend

- Sanitary Pumping Station
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- < 0.28
- 0.28 - 0.5
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- > 1.0
- N/A

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Town of Blue Mountains

Figure (17):
Proposed Additional Flow Monitoring Locations 2024

Drawn By: J.H. Date: July 5, 2024

0 50 100 200 Meters