5 DATA COLLECTION AND FIELD INVESTIGATIONS

Data collection provides the foundation for drainage system model development and assessment. As part of the Capacity Assessment Study, information was obtained from various sources and supplemented with additional data from field work.

5.1 Data Collection and Review

5.1.1 Data Collection

Three groups of data were collected as listed below. A detailed summary of the data collected is presented in **Appendix TM#1**.

- G1 data
    - Sewer network including sewers, maintenance holes, catchbasins, outfalls, etc.
    - Land use classification
    - Water consumption records
    - Existing and future population
    - Servicing areas
    - Digital elevation model and topographic data
    - Aerial photographs
    - Current and historical sewer design criteria and sewer by-laws
    - Previous and present studies and reports
    - Historical operation and maintenance records
    - City's Downspout Disconnection Program and Exemption records
    - Historical flooding records
    - Improvement and rehabilitation works
    - New and planned developments
    - Geotechnical reports
    - Natural surface water drainage information
    - TRCA Floodplain mapping and models
- Group 2 data
    - Smoke / dye test results
    - Foundation drain cards
    - As-built drawings.
- Other data
    - External / adjacent area InfoWorks models
    - Rainfall and flow monitoring information
    - Ministry of Ontario (MTO) drainage information

- TRCA storm outfall inspections

5.1.2 Data Gap Assessment and Rectification

The first step before commencing with the model set up was to identify data gaps in the existing sanitary and storm sewer network database. The preferred approach of data rectification was the review of as-built drawings followed by as-design drawings and lastly inference. If a data gap is found to be in close proximity to recorded flooding complaints, then a field investigation program was proposed to fill in the data gap. For inconsistent profiles in sewers, such as when the inverts downstream are higher than the upstream, or when the diameter downstream is smaller than the upstream diameter, wherever possible, the as-built or design drawings were reviewed for confirmation. Where as-built or as-designed drawings could not be found, an assessment might be made with respect to inconsistent profiles to determine whether the inconsistences are intentional or if an adjustment should be made. Table 5.1 summarizes the assumptions made to infill data gaps in the order listed. The detailed assumptions are also documented internally in the model input data.

Table 5.1: Data Gaps Rectification

Structure Type	Data Gap Type	Data Source / Assumptions
Sewers	Diameter	1) As-built or design drawings. 2) Interpolation between adjacent pipes.
	Pipe Cross-Section Shape	Estimated from adjacent pipes.
	Upstream Invert	1) As-built or design drawings. 2) Estimated from downstream elevation of the upstream segment. 3) Interpolation between adjacent pipes.
	Downstream Invert	1) As-built or design drawings. 2) Estimated from downstream elevation of the upstream segment. 3) Interpolation between adjacent pipes.
	Length	Estimated from GIS.
	Inconsistent Profiles - Inverts (downstream higher than upstream)	1) As-built or design drawings. 2) Downstream invert adjusted to be at least equal to the invert elevation of the upstream segment.
	Inconsistent Profile-Diameter (downstream smaller than upstream)	1) As-built or design drawings. 2) Diameter adjusted to be at least equal to the diameter of the upstream segment.
Manholes	Ground Elevation	Estimated from LiDAR.
	Bottom Elevation	Estimated from sewer invert elevations.

5.2 Field Investigations

As part of the Capacity Assessment Study, a comprehensive Field Survey and Investigation Program (FS&IP) was conducted in the summer of 2020 within the proposed survey flood clusters for Area 58. The purpose of the FS&IP is to obtain a better understanding of existing conditions and collect additional information to assist with model refinement. The FS&IP included the following surveys:

Address Survey (Property Condition)

Approximately 3,000 properties (both residential and ICI) have been inspected from the curb-side without accessing private properties to determine roof downspout connectivity, presence of reverse slope driveways, flat roofs and lot grading. These are potential causes of flooding as they can lead to increased flow to the sewer system and contribute to sewer system overloading, as well as directing stormwater runoff to the property.

The downspout connectivity was classified as disconnected (all visible downspouts discharge to the ground surface), connected (all visible downspouts discharge underground), partially disconnected (some of the visible downspouts discharge to the ground surface and the rest to the underground), and unknown. Overall, the disconnection rate for the surveyed properties is determined to be 77% on average (ranges from 60% to 100% by ward). A few properties with reverse slope driveways were also identified during the address survey.

Catchbasins Survey

All catchbasins within the survey extent were inspected for location verification, type, condition and grate. Any missing ones were added to the database.

Perforated Maintenance Hole and Dual Maintenance Holes Survey

All maintenance holes were checked for perforated lids, which is a source of inflow. Dual maintenance holes, where the storm and sanitary sewers share a common chamber but are separated either by a wall to keep the flow separate during low flow conditions, were inspected and all confirmed to be fully separated.

Major System and Low Points Survey

Existing overland flow paths, directions, low points, and overland spill paths were verified in the field through visual inspections as best as possible.

Storm Outfall Survey

The City's data and the outfall inspection records received from TRCA form the basis of the storm outfall database, and the field survey was performed using a GPS device to verify and / or collect additional information including outfall shape, dimension, invert level, type of structure, level of submergence, etc. A few outfalls were unable to be located.

Figure 5.1 to **Figure 5.5** illustrate the downspout connectivity, reverse slope driveway locations, outfalls, catchbasin inventory and the low-lying areas. Further details can be found in **Appendix D**.

5.3 Rainfall and Flow Monitoring Data Analysis

Historical rainfall and flow monitoring data were received from the City to facilitate the model validation and calibration. However, the existing rainfall and flow monitoring data within the study area is very limited. Within the study area, only one flow monitor was installed in the sanitary system and one City rain gauge, with six (6) additional rain gauges within 2km buffer of the study area border.

5.3.1 Historic Rainfall Data

For the flow monitoring analysis, data from the closest rain gauges to the monitored areas were used. Rain gauge RG_44 (Fire Station 121) was used in the analysis of station 58-SAN-1. The rain gauge location is illustrated on **Figure 5.6**. The distance between RG_044 and station 58-SAN-1 is 908 m.

Table 5.2 summarizes the significant rainfall events that occurred during the 2017 monitoring period. None of the measured storm events captured at least 40 mm of rain in 60 minutes, which is the minimum intensity of a significant storm event suitable for calibration as defined in the RFP. Therefore, calibration for station 58-SAN-1 was not undertaken. Further details may be found in the **Appendix TM#1**.

Table 5.2: Period 1 Rainfall Events Summary

Event Date	Total Precipitation (mm)	Duration (hr)	Average Intensity (mm/hr)	Recorded Peak Intensity over 60 min (mm/hr)	Recorded Peak Intensity over Tc [1] (mm/hr)
May 21, 2017	16	17	0.9	6.4	18.3
May 25, 2017	49	27	1.9	9.1	12.2
Jun 17, 2017	26	1	28.8	25.9	59.9
Jun 22, 2017	62	25	2.5	19.8	52.8
Jul 20, 2017	41	2	24.2	35.8	48.8
Aug 02, 2017	29	15	1.9	26.1	57.9
Aug 04, 2017	21	10	2.1	15.5	27.4

[1] Time of Concentration (58-SAN-1) = 15 minutes

5.3.2 Historic Flow Monitoring Data

Only one sanitary flow monitoring station data was available. The station was installed in a 250mm sanitary sewer on Plymbridge Road on May 15, 2017, and removed on September 28, 2017, measuring sanitary flows for four (4) months. The flow monitor was localized with a drainage area of approximate 9.9ha, covering 1.8% of the local sewers. Considering that the coverage area of the flow monitor is only 1% of the study area, the flow data is not representative of the system of the entire study area. Thus, the flow data was not used for DWF calibration and validation.

5.3.3 Rainfall and Flow Monitoring Program

Due to the limited existing rainfall and flow monitoring data, a three-year (2020 – 2023) rainfall and flow monitoring program has been undertaken to capture the any potential significant storm events, flows and sewer system responses to rainfall events. However, no significant storm event (> 40mm / hour) was captured within the Capacity Assessment Study area during the period of monitoring.

N
W
E
S

Keele St
Carpenter Rd
Alness St
Finch Ave W
Chesswood Dr
Don River
Steeprock Dr
Dufferin St
Wilmington Ave
Bathurst St
Sheppard Ave W
William R Allen Rd
Wilson Heights Blvd

Legend

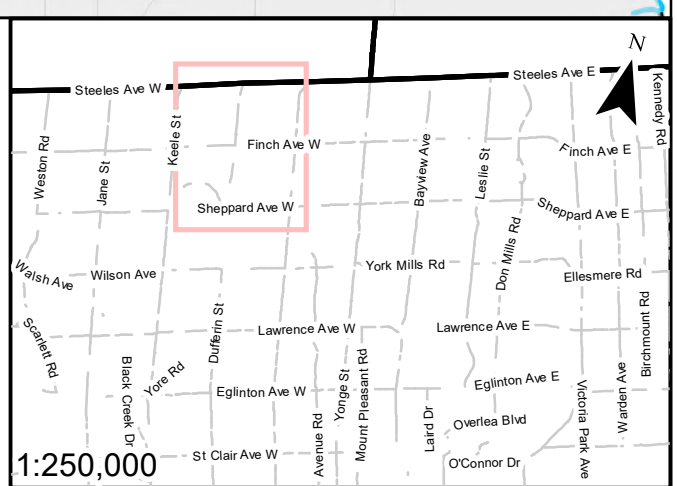
- Municipal Boundary
- Storm Boundary
- Property Parcel
- Road Centreline
- Watercourse (TRCA, 2012)

Flooding Clusters:

- Surveyed
- Unsurveyed

Disconnection Rate:

- Connected
- Partially Connected
- Disconnected
- Unknown



Aquafor Beech Limited

CIVICA Water Management Solutions

PARSONS

Project: Toronto Basement Flooding Study Area 58

Title: Figure 5.1 (A)
Roof Downspout Connectivity

Projection: NAD_1983_CSRS_MTM_10
Data Source: City of Toronto, TRCA, LIO

Date: October, 2020

0 0.2 0.4 0.8
Kilometers

1:16,500

Senlac Rd
Beecroft Rd
Doris Ave
Willowdale Ave
Sheppard Ave W
Sheppard Ave E
Bathurst St
Yonge St
Wilson Ave
York Mills Rd
Bayview Ave
Avenue Rd
Don River
Lawrence Ave W
Lawrence Ave E
Duplex Ave

Legend

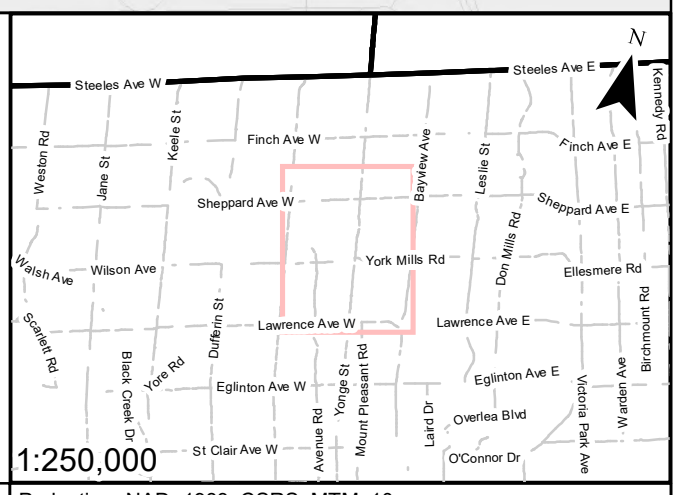
- Municipal Boundary
- Storm Boundary
- Property Parcel
- Road Centreline
- Watercourse (TRCA, 2012)

Flooding Clusters:

- Surveyed
- Unsurveyed

Disconnection Rate:

- Connected
- Partially Connected
- Disconnected
- Unknown



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PARSONS

Project: Toronto Basement Flooding Study Area 58

Title: Figure 5.1 (B)
Roof Downspout Connectivity

Projection: NAD_1983_CSRS_MTM_10
Data Source: City of Toronto, TRCA, LIO

Date: October, 2020

0 0.2 0.4 0.8
Kilometers

1:16,500

Lawrence Ave E
The Donway W
The Donway E
Leslie St
Don Mills Rd
Don River
Wynford Dr
Bayview Ave
Eglinton Ave E
Brentcliffe Rd
Wicksteed Ave
Laird Dr
Gateway Blvd
Overlea Blvd
Millwood Rd
Moore Ave
Pape Ave
Donlands Ave

Legend

- Municipal Boundary
- Storm Boundary
- Property Parcel
- Road Centreline
- Watercourse (TRCA, 2012)

Flooding Clusters:

- Surveyed
- Unsurveyed

Disconnection Rate:

- Connected
- Partially Connected
- Disconnected
- Unknown

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CIVICA Water Management Solutions

PARSONS

Project: Toronto Basement Flooding Study Area 58

Title: Figure 5.1 (C)
Roof Downspout Connectivity

Projection: NAD_1983_CSRS_MTM_10
Data Source: City of Toronto, TRCA, LIO

Date: October, 2020

0 0.225 0.45 0.9
Kilometers

1:18,000

N
W
E
S

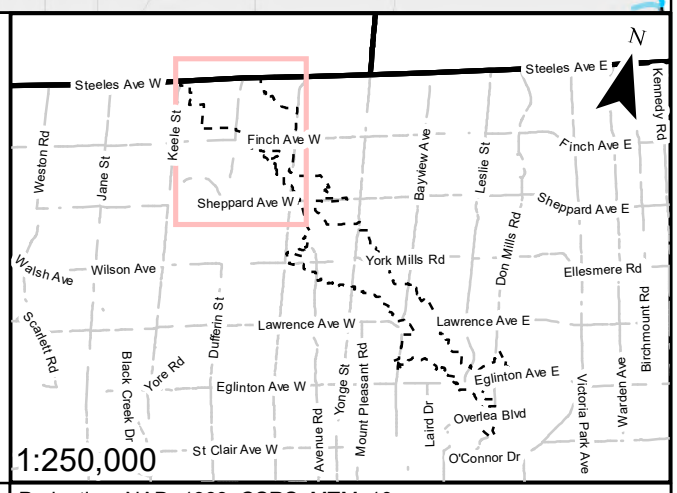
Keele St
Shale Dr
Limestone Cres
Magnetic Dr
Canarctic Dr
Supertest Rd
Alness St
Martin Ross Ave
Brisbane Rd
Carpenter Rd
Hidden Trl
Henry Welsh D
Dollery Crt
Ivan Nelson Dr
Robert Hicks Dr
Virgilwood Dr
Finch Ave W
Chesswood Dr
Don River
Denmark Cres
Carscadden Dr
Steeprock Dr
Dufferin St
Wilmington Ave
Sheppard Ave W
William R Allen Rd
Wilson Heights Blvd
Bathurst St

Legend

- Reverse Slope Driveway Locations
- Municipal Boundary
- Storm Boundary
- Property Parcel
- Road Centreline
- Watercourse (TRCA, 2012)

Flooding Clusters:

- Surveyed
- Unsurveyed



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CIVICA Water Management Solutions

PARSONS

Project: Toronto Basement Flooding Study Area 58

Title: Figure 5.2 (A)
Reverse Slope Driveway Locations

Projection: NAD_1983_CSRS_MTM_10
Data Source: City of Toronto, TRCA, LIO

Date: October, 2020

0 0.2 0.4 0.8
Kilometers

1:16,500

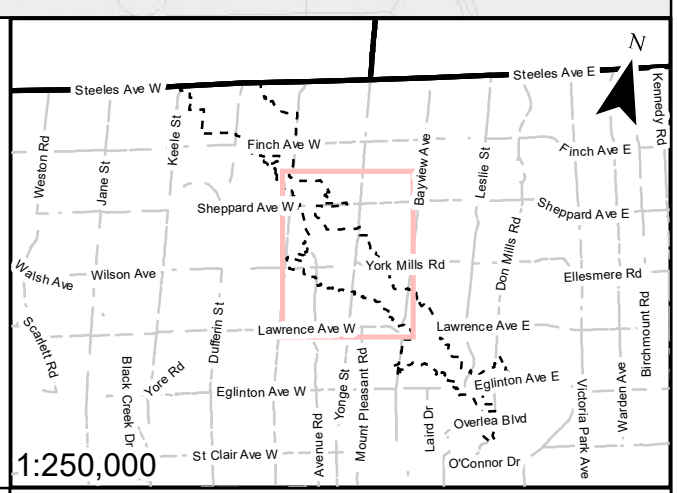
Senlac Rd
Beecroft Rd
Doris Ave
Willowdale Ave
Sheppard Ave E
Sheppard Ave W
Wentworth Ave
Don River Blvd
Highway 401
Bathurst St
Sandringham Dr
Bideford Ave
Tregellis Rd
Bidewell Ave
Marchwood Dr
Kirkton Rd
Bombay Ave
Yonge Blvd
Armour Blvd
Delhi Ave
Belgrave Ave
Yonge St
Oakley Pl
York Ridge Rd
York Mills Rd
Wilson Ave
Mason Blvd
Saunders St
Dunster Ave
Apsley Rd
Ridley Blvd
De Vere Gdns
Harley Ave
Elm Rd
Jainey Pl
Esgore Dr
Felbrigg Ave
Brooke Ave
Ivor Rd
Campbell Cres
Old Yonge St
Brookfield Rd
Hedgewood Rd
Beechwood Ave
Plymbridge Rd
York Valley Cres
Green Valley Rd
St Margarets Dr
Donwoods Dr
Donino Ave
Knightswood Rd
Bayview Ave
Arjay Cres
Forest Glen Cres
Doncliffe Dr
Don River
Avenue Rd
Lawrence Ave W
Duplex Ave
Lawrence Ave E
Lawrence Ave E

Legend

- Reverse Slope Driveway Locations
- Municipal Boundary
- Storm Boundary
- Property Parcel
- Road Centreline
- Watercourse (TRCA, 2012)

Flooding Clusters:

- Surveyed
- Unsurveyed



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CIVICA Water Management Solutions

PARSONS

Project: Toronto Basement Flooding Study Area 58

Title: Figure 5.2 (B)
Reverse Slope Driveway Locations

Projection: NAD_1983_CSRS_MTM_10
Data Source: City of Toronto, TRCA, LIO

Date: October, 2020

0 0.2 0.4 0.8
Kilometers

1:16,500

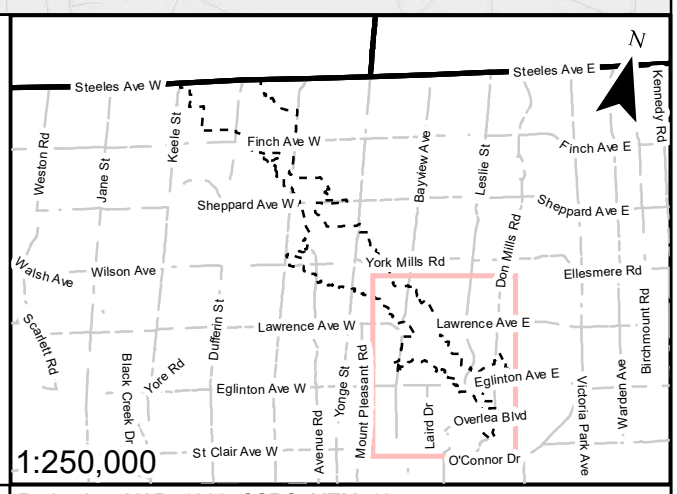
St Margarets Dr
Green Valley Rd
Arjay Cres
Lawrence Ave E
High Point Rd
Glenorchy Rd
Valleyanna Dr
Leslie St
The Donway W
The Donway E
Lawrence Ave E
Don River
Wynford Dr
Eglinton Ave E
Bayview Ave
Brentcliffe Rd
Wicksteed Ave
Laird Dr
Don Mills Rd
Gateway Blvd
Overlea Blvd
Millwood Rd
Moore Ave
Don Valley Parkway
Pape Ave
Donlands Ave

Legend

- Reverse Slope Driveway Locations
- Municipal Boundary
- Storm Boundary
- Property Parcel
- Road Centreline
- Watercourse (TRCA, 2012)

Flooding Clusters:

- Surveyed
- Unsurveyed



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CIVICA Water Management Solutions

PARSONS

Project: Toronto Basement Flooding Study Area 58

Title: Figure 5.2 (C)
Reverse Slope Driveway Locations

Projection: NAD_1983_CSRS_MTM_10
Data Source: City of Toronto, TRCA, LIO

Date: October, 2020

0 0.225 0.45 0.9
Kilometers

1:18,000

N
W
E
S

Keele St
Shale Dr
Limestone Cres
Magnetic Dr
Canarctic Dr
Superdest Rd
Alness St
Martin Ross Ave
Brisbane Rd
Carpenter Rd
Hidden Trl
Finch Ave W
Chesswood Dr
Dufferin St
Steeprock Dr
Don River
Wilmington Ave
Sheppard Ave W
Bathurst St
William R Allen Rd
Wilson Heights Blvd

Legend

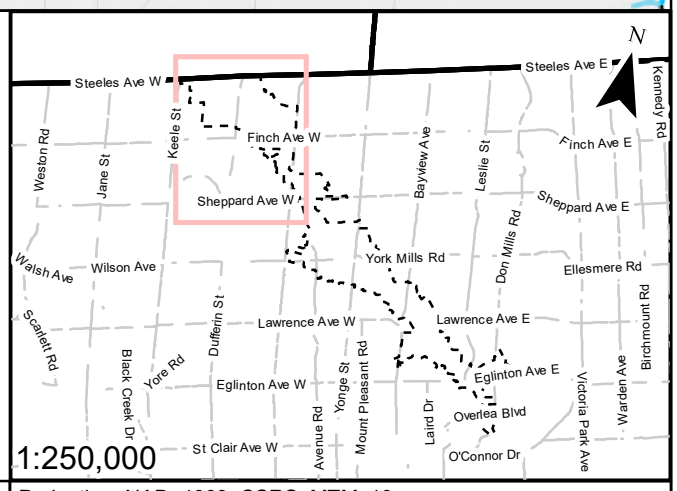
- Municipal Boundary
- Storm Boundary
- Property Parcel
- Road Centreline
- Watercourse (TRCA, 2012)

Flooding Clusters:

- Surveyed
- Unsurveyed

Carchbasins within Priority Flood Clusters:

- Single Catchbasin - Grid
- Single Catchbasin - Honeycomb
- Single Catchbasin - Horizontal Bar/ Fishbone
- Twin Catchbasin - Horizontal Bar/ Fishbone



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CIVICA Water Management Solutions
PARSONS

Project: Toronto Basement Flooding Study Area 58

Title: Figure 5.3 (A)
Surveyed Catchbasins

Projection: NAD_1983_CSRS_MTM_10
Data Source: City of Toronto, TRCA, LIO

Date: October, 2020

0 0.2 0.4 0.8
Kilometers

1:16,500

Senlac Rd
Beecroft Rd
Doris Ave
Willowdale Ave
Sheppard Ave E
Sheppard Ave W
Wentworth Ave
Don River Blvd
Highway 401
Bathurst St
Yonge St
Yonge Blvd
Sandringham Dr
Bideford Ave
Tregellis Rd
Bidwell Ave
Marchwood Dr
Kirkton Rd
Bombay Ave
Armour Blvd
Delhi Ave
Belgrave Ave
Wilson Ave
York Mills Rd
York Ridge Rd
Campbell Cres
Old Yonge St
Beechwood Ave
Hedgewood Rd
Brookfield Rd
Plymbridge Rd
York Valley Cres
Green Valley Rd
Donwoods Dr
St Margarets Dr
Knightswood Rd
Donino Ave
Bayview Ave
Ariay Cres
Mason Blvd
Saunders St
Dunstor Ave
Apsley Rd
Ridley Blvd
De Vere Gdns
Elm Rd
Glainey Pl
Este Dr
Happy Ave
Felbrigg Ave
Ivor Rd
Brooke Ave
Forest Glen Cres
Doncliffe Dr
Avenue Rd
Don River
Lawrence Ave W
Lawrence Ave E
Duplex Ave

Legend

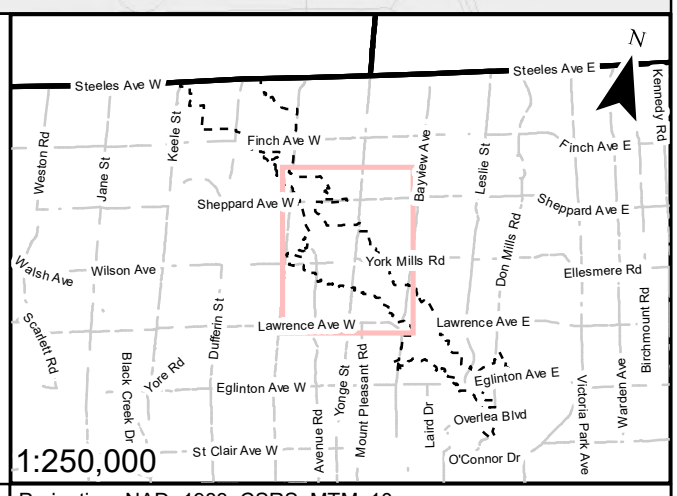
- Municipal Boundary
- Storm Boundary
- Property Parcel
- Road Centreline
- Watercourse (TRCA, 2012)

Flooding Clusters:

- Surveyed
- Unsurveyed

Carchbasins within Priority Flood Clusters:

- Single Catchbasin - Grid
- Single Catchbasin - Honeycomb
- Single Catchbasin - Horizontal Bar/ Fishbone
- Twin Catchbasin - Horizontal Bar/ Fishbone



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CIVICA Water Management Solutions

PARSONS

Project: Toronto Basement Flooding Study Area 58

Title: Figure 5.3 (B)
Surveyed Catchbasins

Projection: NAD_1983_CSRS_MTM_10
Data Source: City of Toronto, TRCA, LIO

Date: October, 2020

0 0.2 0.4 0.8
Kilometers

1:16,500

St Margarets Dr
Green Valley Rd
Ariay Cres
Lawrence Ave E
High Point Rd
Glasgow Cres
Valleyanna Dr
Leslie St
The Donway W
The Donway E
Lawrence Ave E
Don River
Wynford Dr
Eglinton Ave E
Bayview Ave
Brentcliffe Rd
Wicksteed Ave
Laird Dr
Don Mills Rd
Gateway Blvd
Overlea Blvd
Millwood Rd
Moore Ave
Don Valley Parkway
Pape Ave
Donlands Ave
N
W
E
S

Legend

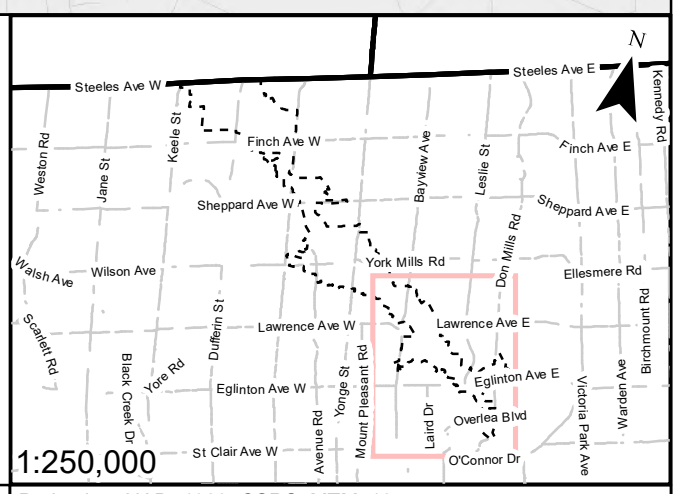
- Municipal Boundary
- Storm Boundary
- Property Parcel
- Road Centreline
- Watercourse (TRCA, 2012)

Flooding Clusters:

- Surveyed
- Unsurveyed

Carchbasins within Priority Flood Clusters:

- Single Catchbasin - Grid
- Single Catchbasin - Honeycomb
- Single Catchbasin - Horizontal Bar/ Fishbone
- Twin Catchbasin - Horizontal Bar/ Fishbone



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CIVICA Water Management Solutions

PARSONS

Project: Toronto Basement Flooding Study Area 58

Title: Figure 5.3 (C)
Surveyed Catchbasins

Projection: NAD_1983_CSRS_MTM_10
Data Source: City of Toronto, TRCA, LIO

Date: October, 2020

0 0.225 0.45 0.9
Kilometers

1:18,000

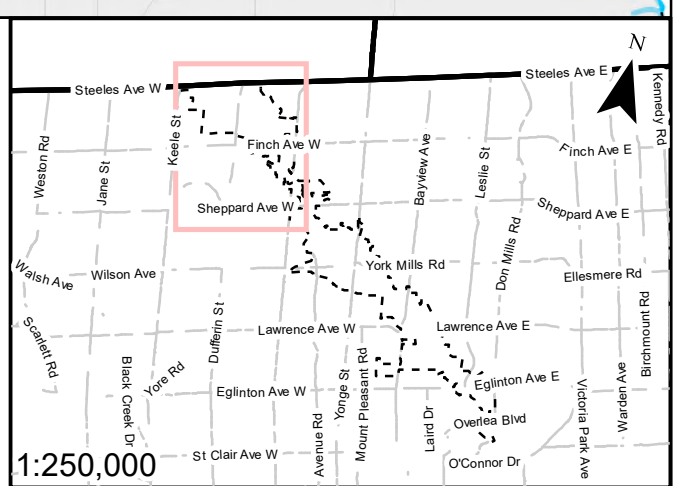
Keele St
Carpenter Rd
Alness St
Finch Ave W
Chesswood Dr
Don River
Dufferin St
Steeprock Dr
Wilmington Ave
Bathurst St
Sheppard Ave W
William R Allen Rd
Wilson Heights Blvd

Legend

- Municipal Boundary
- Storm Boundary
- Property Parcel
- Road Centreline
- Watercourse (TRCA, 2012)
- Low Point Locations
- Surveyed Low Points
- Rural Cross Section

Flooding Clusters:

- Surveyed
- Unsurveyed



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CIVICA Water Management Solutions

PARSONS

Project: Toronto Basement Flooding Study Area 58

Title: Figure 5.4 (A)
Major Systems & Low Lying Areas

Projection: NAD_1983_CSRS_MTM_10
Data Source: City of Toronto, TRCA, LIO

Date: May, 2020

0 0.2 0.4 0.8
Kilometers

1:16,500

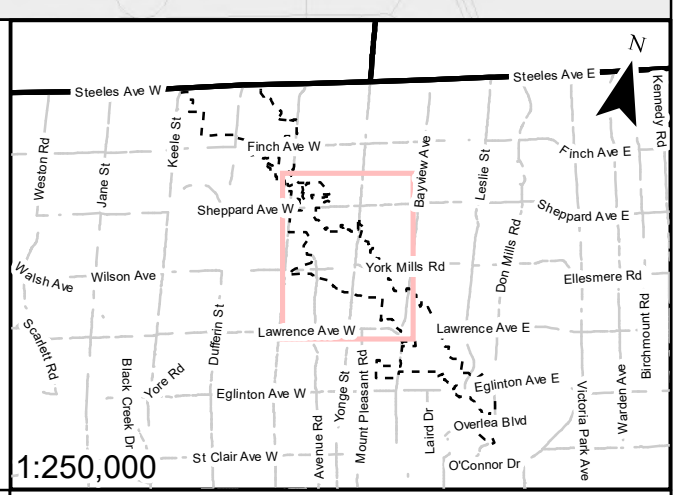
Senlac Rd
Beecroft Rd
Doris Ave
Willowdale Ave
Sheppard Ave W
Sheppard Ave E
Bathurst St
Highway 401
Yonge St
Wilson Ave
York Mills Rd
Bayview Ave
Avenue Rd
Don River
Lawrence Ave W
Duplex Ave
Lawrence Ave E

Legend

- Municipal Boundary
- Storm Boundary
- Property Parcel
- Road Centreline
- Watercourse (TRCA, 2012)
- Low Point Locations
- Surveyed Low Points
- Rural Cross Section

Flooding Clusters:

- Surveyed
- Unsurveyed



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CIVICA Water Management Solutions
PARSONS

Project: Toronto Basement Flooding Study Area 58

Title: Figure 5.4 (B)
Major Systems & Low Lying Areas

Projection: NAD_1983_CSRS_MTM_10
Data Source: City of Toronto, TRCA, LIO

Date: May, 2020

0 0.2 0.4 0.8
Kilometers

1:16,500

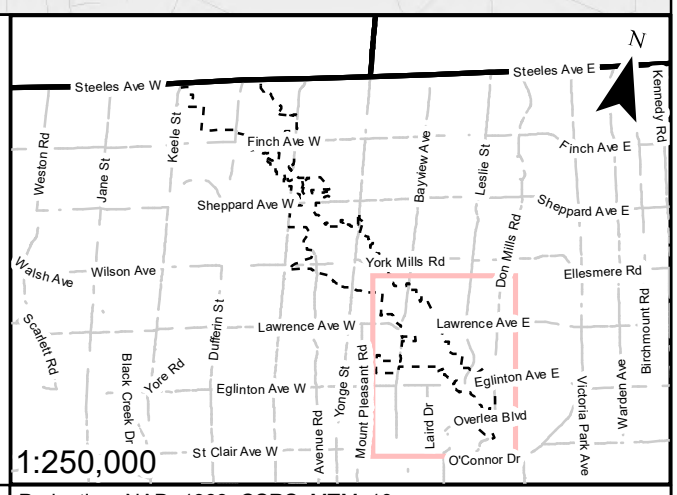
Lawrence Ave E
The Donway W
The Donway E
Leslie St
Don River
Wynford Dr
Bayview Ave
Eglinton Ave E
Brentcliffe Rd
Wicksteed Ave
Laird Dr
Don Mills Rd
Gateway Blvd
Overlea Blvd
Millwood Rd
Moore Ave
Don Valley Parkway
Pape Ave
Donlands Ave

Legend

- Municipal Boundary
- Storm Boundary
- Property Parcel
- Road Centreline
- Watercourse (TRCA, 2012)
- Low Point Locations
- Surveyed Low Points
- Rural Cross Section

Flooding Clusters:

- Surveyed
- Unsurveyed



Aquafor Beech limited

CIVICA Water Management Solutions

PARSONS

Project: Toronto Basement Flooding Study Area 58

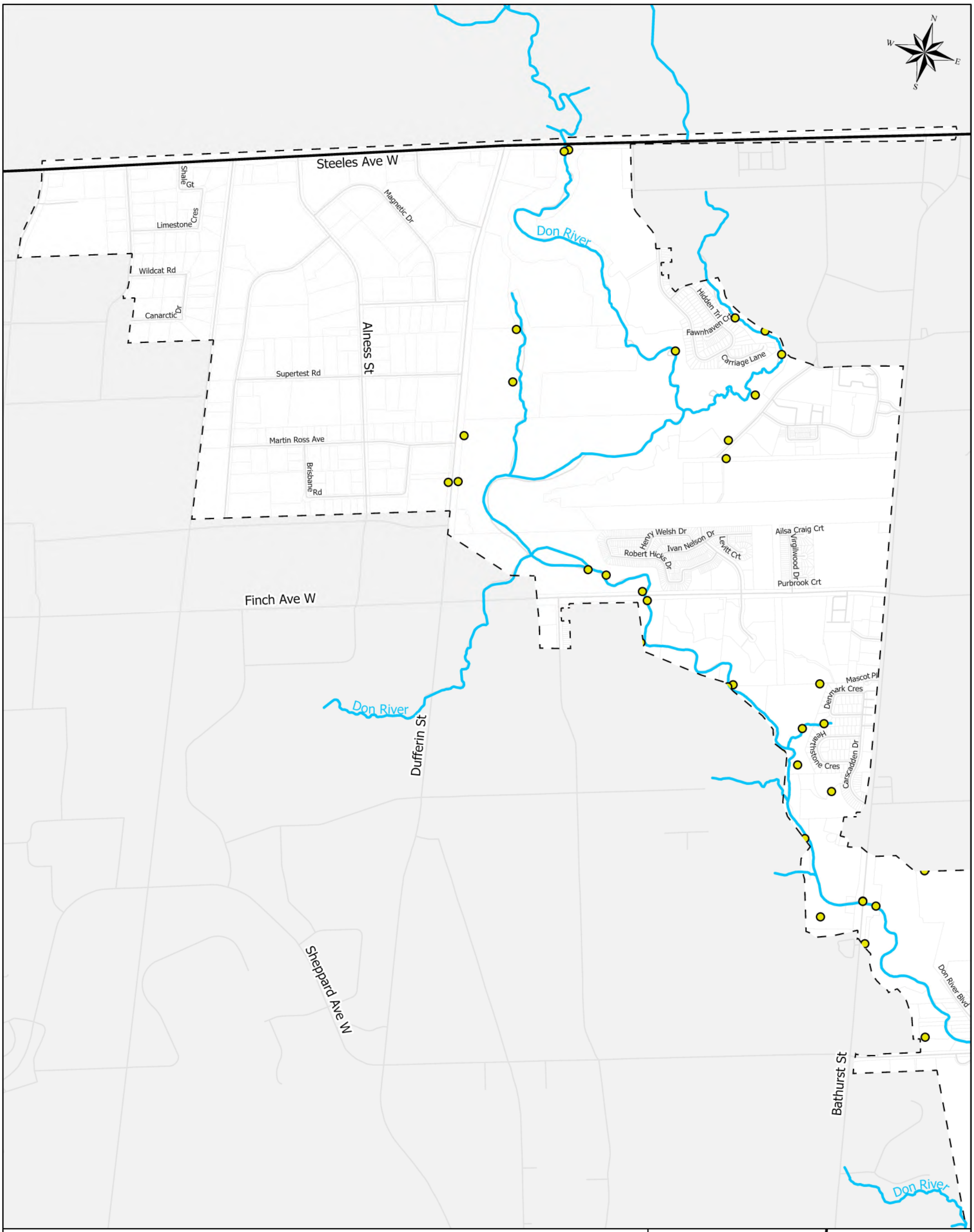
Title: Figure 5.4 (C)
Major Systems & Low Lying Areas

Projection: NAD_1983_CSRS_MTM_10
Data Source: City of Toronto, TRCA, LIO

Date: May, 2020

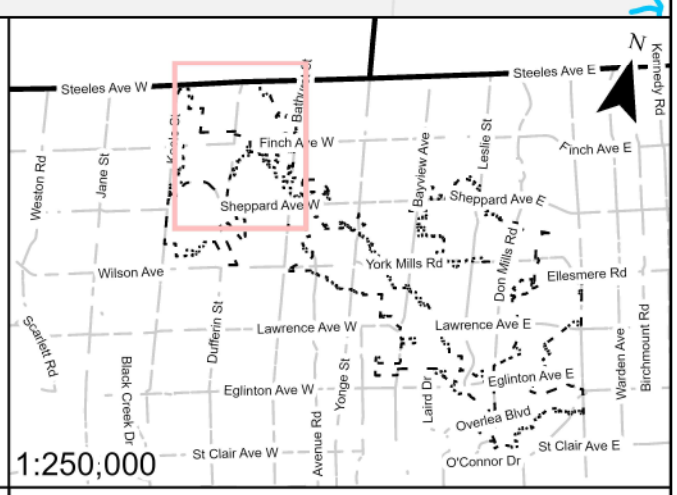
0 0.225 0.45 0.9
Kilometers

1:18,000



Legend

- Municipal Boundaries
- Storm Boundary
- Property Parcel
- Road Centreline
- Watercourse (TRCA, 2012)
- Storm Outfall



Aquafor Beech

CIVICA Water Management Solutions

PARSONS

Project: Toronto Basement Flooding Study Area 58

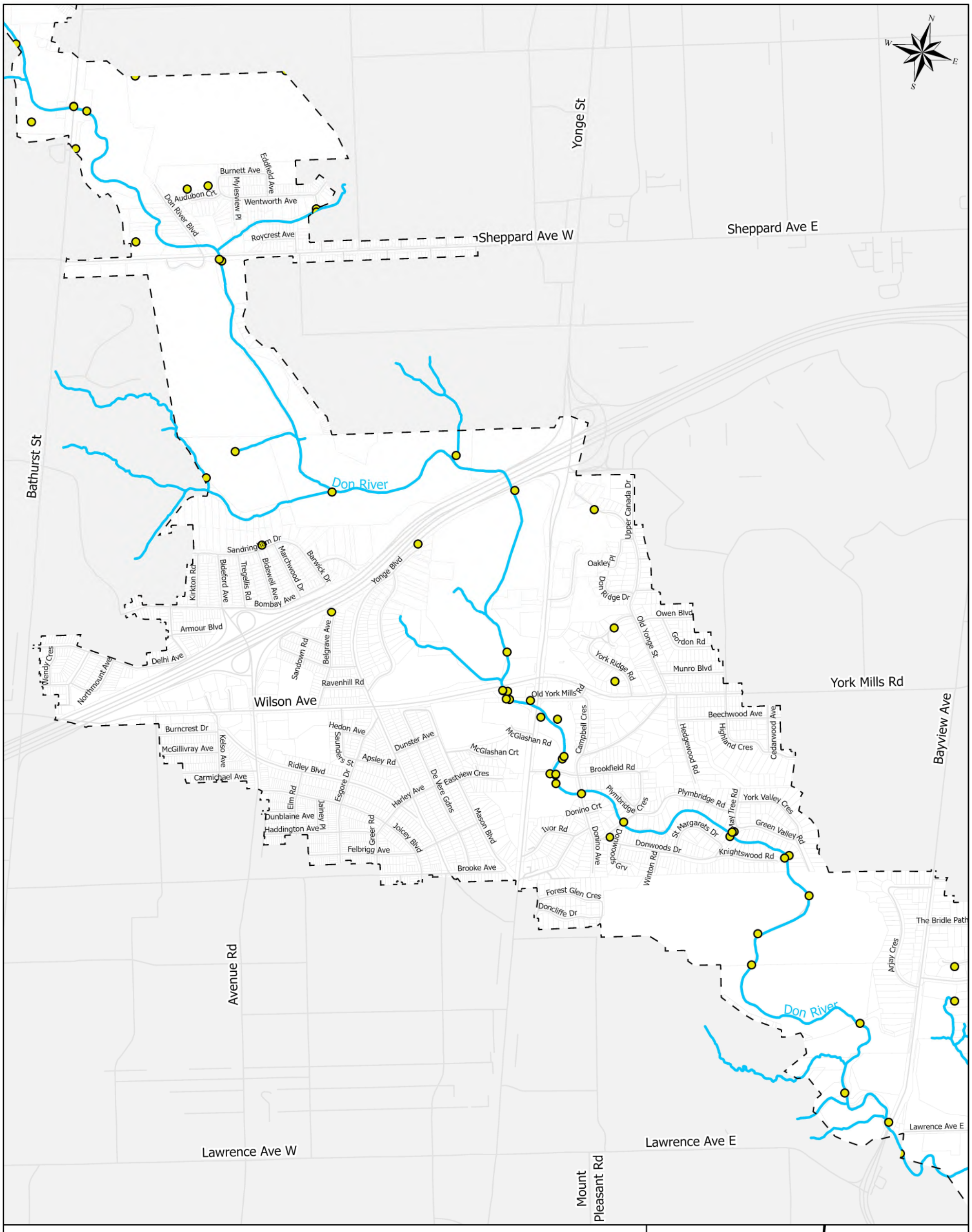
Title: Figure 5.5(A)
Storm Outfall Locations

Projection: NAD_1983_CSRS_MTM_10
Data Source: City of Toronto, TRCA, LIO

Date: October, 2020

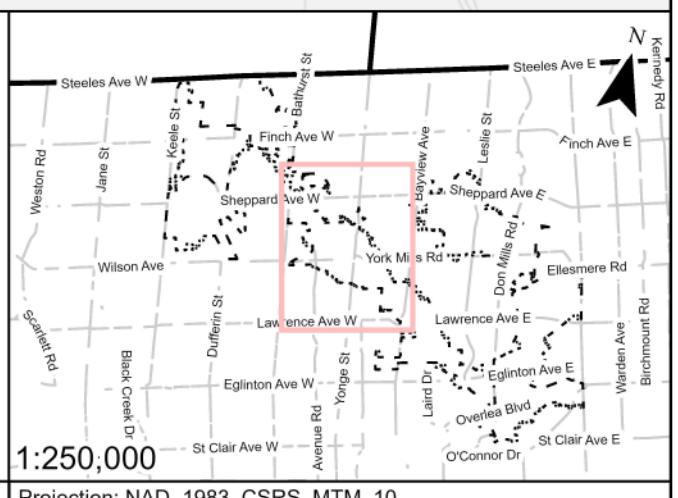
0 0.2 0.4 0.8
Kilometers

1:16,500



Legend

- Municipal Boundaries
- Storm Boundary
- Property Parcel
- Road Centreline
- Watercourse (TRCA, 2012)
- Storm Outfall



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Project: Toronto Basement Flooding Study Area 58

Title: Figure 5.5(B)
Storm Outfall Locations

Projection: NAD_1983_CSRS_MTM_10
Data Source: City of Toronto, TRCA, LIO

Date: October, 2020

0 0.2 0.4 0.8
Kilometers

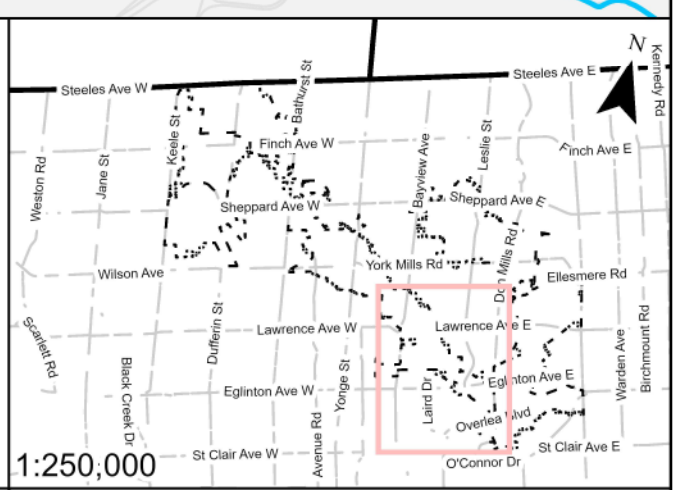
1:16,500

Knightswood Rd
Arjay Cres
Hyde Park Crcl
Don River
High Point Rd
Lawrence Ave E
Park Lane Crcl
Leslie St
Lawrence Ave E
Don Mills Rd
Araz Pl
Valleyanna Dr
Royal Oak Dr
Glenorchy Rd
Cres
Shady Oaks
Don River
Don River
Don River
Wynford Dr
Eglinton Ave E
Laird Dr
Bayview Ave
Overlea Blvd
Millwood Rd
Leaside Bdge
Don River
Pape Ave
Don River

N
W
E
S

Legend

- Municipal Boundaries
- Storm Boundary
- Property Parcel
- Road Centreline
- Watercourse (TRCA, 2012)
- Storm Outfall



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CIVICA Water Management Solutions
PARSONS

Project: Toronto Basement Flooding Study Area 58

Title: Figure 5.5(C)
Storm Outfall Locations

Projection: NAD_1983_CSRS_MTM_10
Data Source: City of Toronto, TRCA, LIO

Date: October, 2020

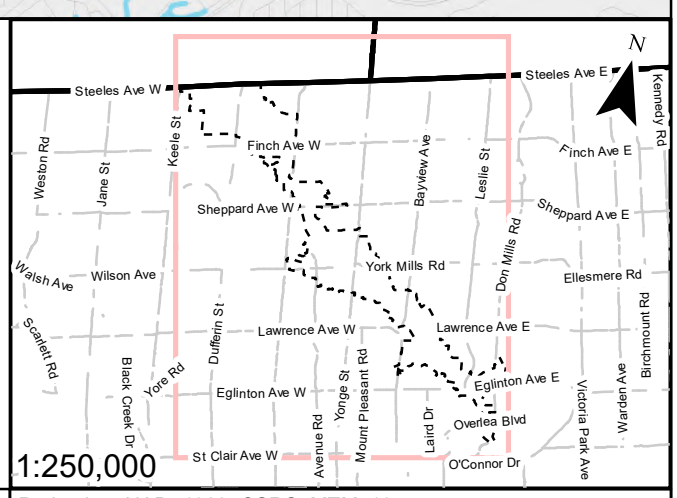
0 0.2 0.4 0.8
Kilometers

1:16,500

Steeles Ave W
Steeles Ave E
Magnetic Dr
Alness St
Supertest Rd
Martin Ross Ave
Brisbane Rd
Hidden Trail
Robert Hicks Dr
Finch Ave W
Drewry Ave
Cummer Ave
Willowdale Ave
Finch Ave E
Leslie St
Chesswood Dr
Steeprock Dr
Wilmington Ave
Carscadden Dr
Senlac Rd
Beecroft Rd
Doris Ave
Don River Blvd
Sheppard Ave W
Sheppard Ave E
William R Allen Rd
Wilson Heights Blvd
Transit Rd
Allen Rd
Bathurst St
Sandringham Dr
Bombay Ave
Yonge Blvd
Wilson Ave
Old Yonge St
Bayview Ave
York Mills Rd
Highway 401
Ridley Blvd
Elm Rd
Esgore Dr
Harley Ave
De Vere Gdns
Mason Blvd
Felbrigg Ave
Yonge St
Nor Rd
Donno Ave
Drumbridge Rd
Dellwoods Dr
Bridgeland Ave
Yorkdale Rd
Arjay Cres
Don River
High Point Rd
Park Lane Crcl
Glenorchy Rd
Lawrence Ave E
Lawrence Ave W
Avenue Rd
The Donway W
Caledonia Rd
Dufferin St
Glencairn Ave
Marlee Ave
Duplex Ave
Eglinton Ave W
Eglinton Ave E
Mount Pleasant Rd
Laird Dr
Don Mills Rd
Overlea Blvd
Millwood Rd
Rogers Rd
Vaughan Rd
Oakwood Ave
Spadina Rd
Oriole Pkwy
Moore Ave
St Clair Ave W
St Clair Ave E
Don Valley Parkway

Legend

- Municipal Boundary
- Storm Boundary
- Property Parcel
- Road Centreline
- Watercourse (TRCA, 2012)
- Flow Monitoring Locations
- Rain Gauge Locations



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Project: Toronto Basement Flooding Study Area 58

Title: Figure 5.6
Historical Flow Monitoring &
Rain Gauge Locations

Projection: NAD_1983_CSRS_MTM_10
Data Source: City of Toronto, TRCA, LIO

Date: May, 2020

0 0.5 1 2
Kilometers

1:42,000