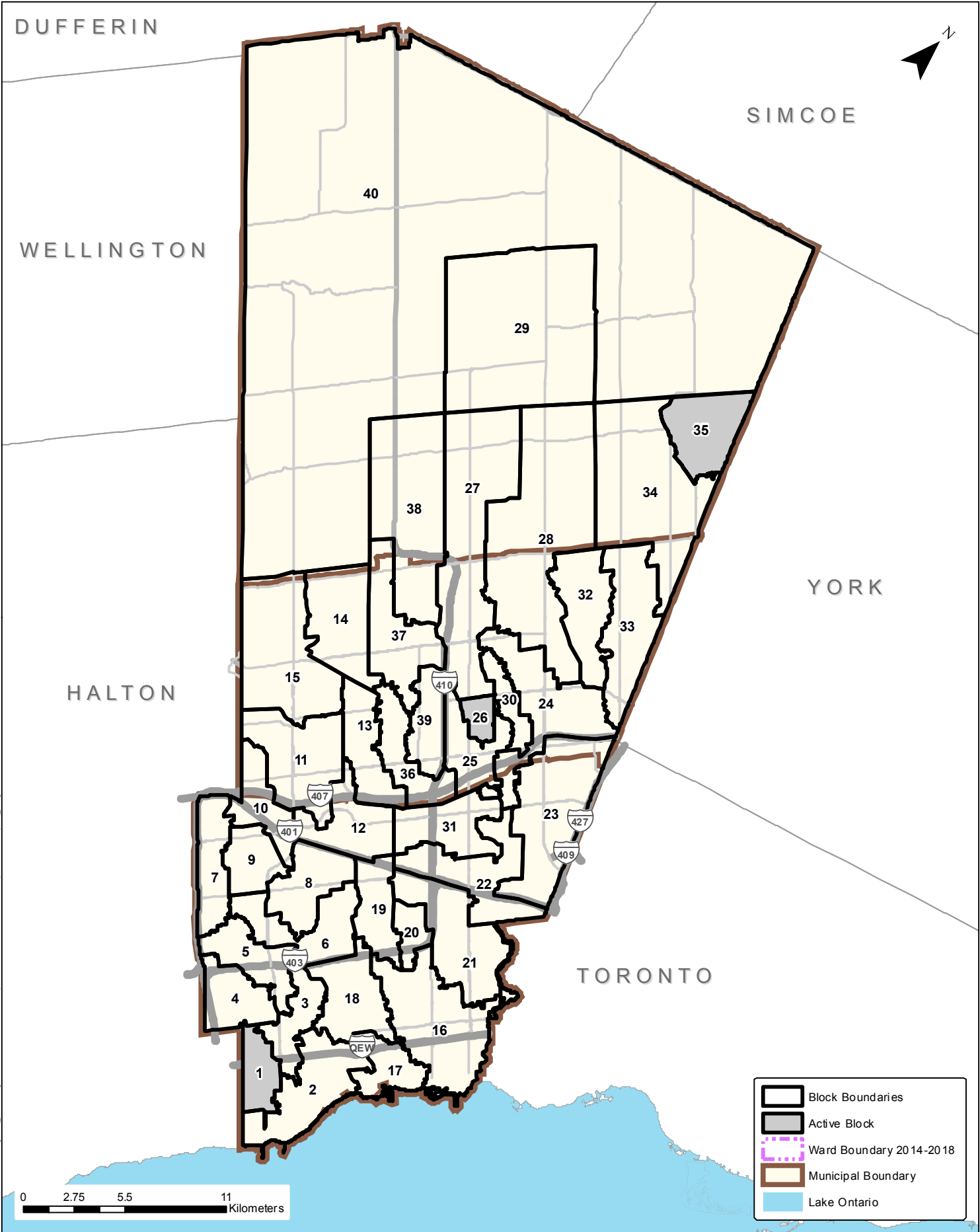
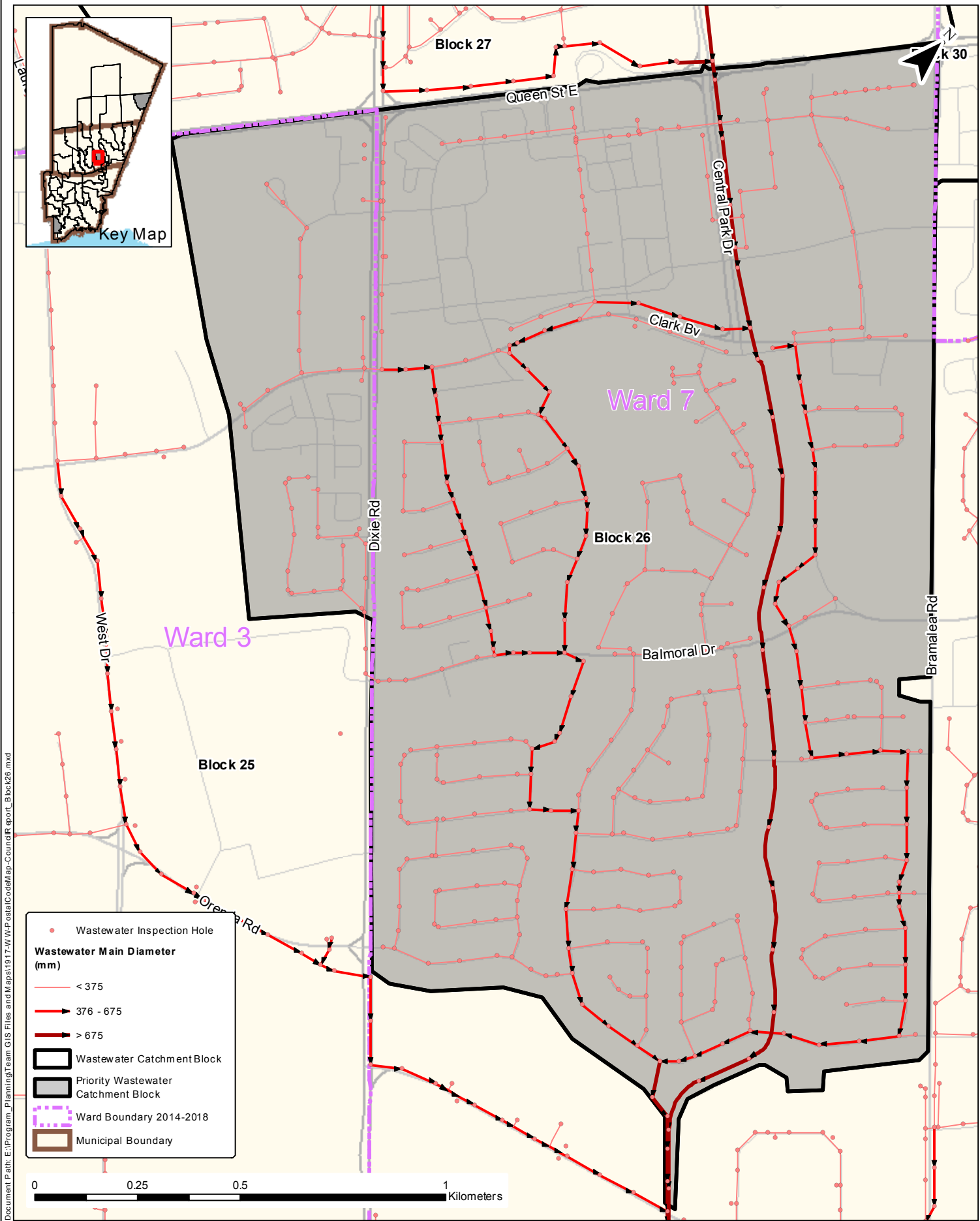


**APPENDIX**  
**REGION OF PEEL DIVIDED INTO 40 SEWERSHEDS CALLED BLOCKS**



Document Path: E:\Program\_PlanningTeam GIS Files and Maps\19-WW-Peel\CodeMap\_CouncilReport\_Report\_Regin.mxd

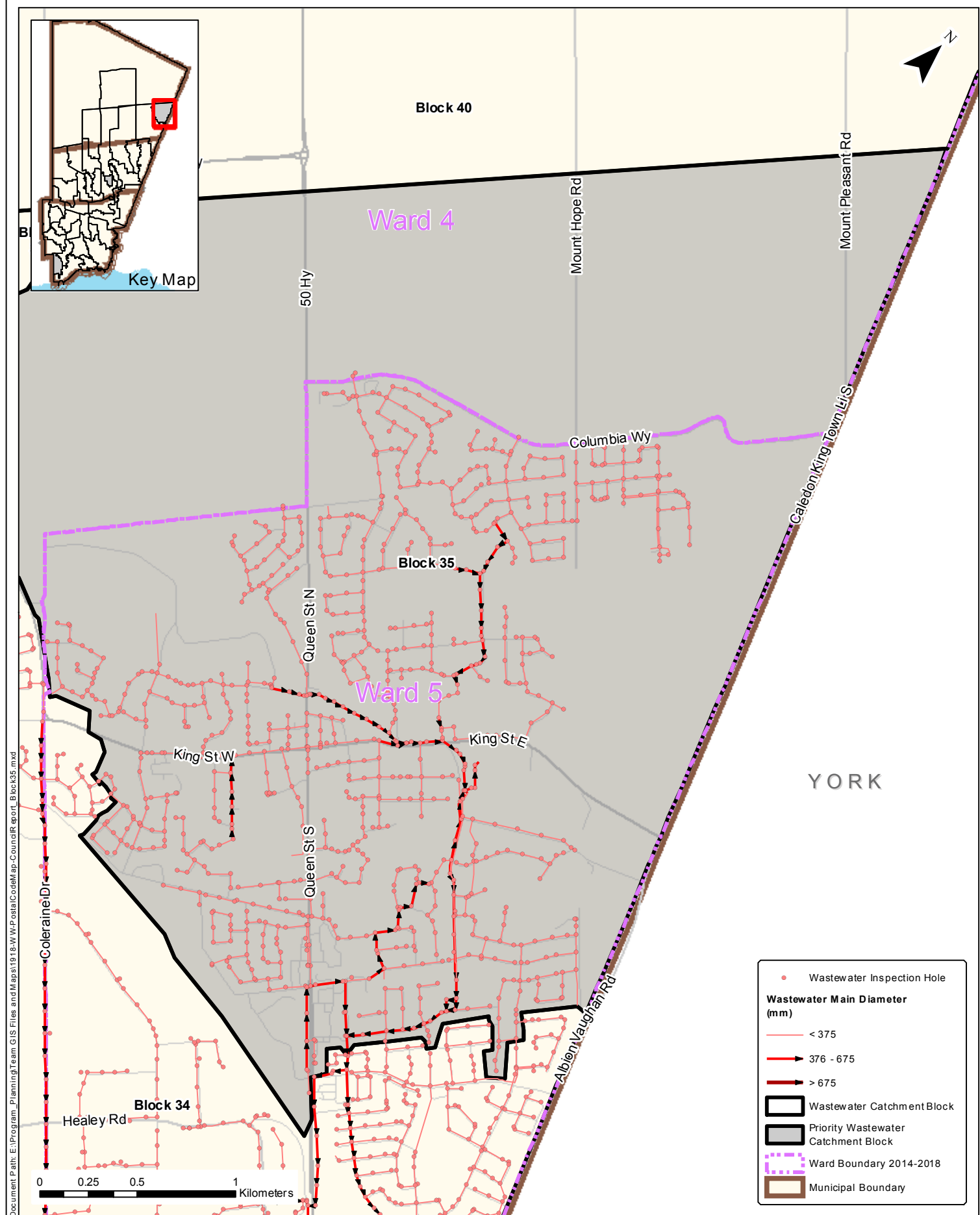
**APPENDIX**  
**Block 26 in Center Brampton Encompassing Avondale Neighbourhood**



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# APPENDIX

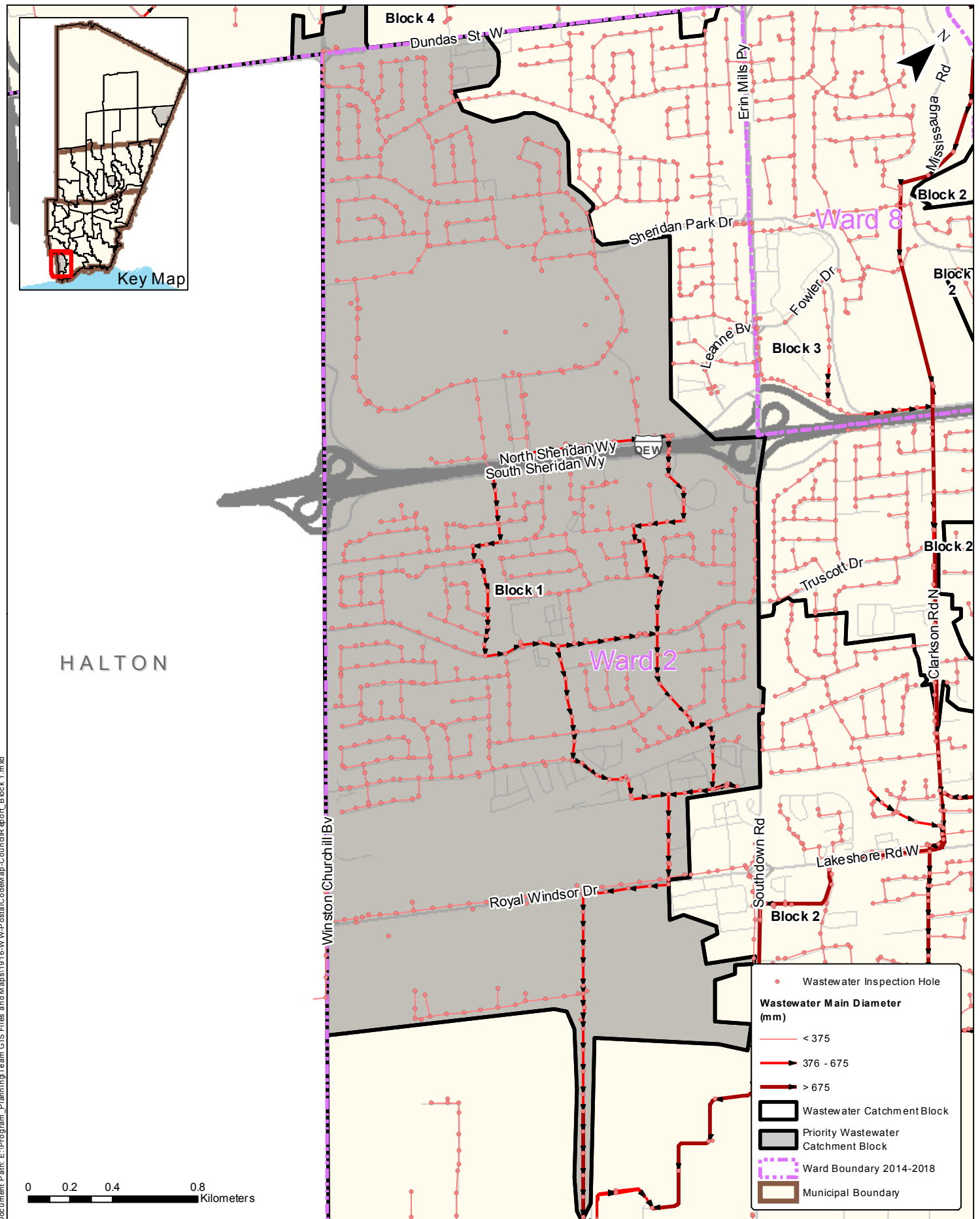
## Block35 in East Caledon Encompassing Bolton



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## APPENDIX

## Block1 in South West Mississauga Encompassing Park Royal and Sheridan Homelands



**APPENDIX****Work Accomplishment and Future Steps****1. Manholes and sewers rehabilitation and replacement:****1.1 - Progress Made to Date:**

Significant investigations and construction have performed to keep sewers and manhole in state of good repair. **Table 1** below summarized the work completed in this regard.

**Table 1 – Sewer and Manhole - Progress made to date**

	<b>Work Completed Region Wide</b>	<b>Work Completed within 3 Active Blocks</b>
CCTV Inspections	1023Km	46Km
Sanitary Sewer lining projects	47Km	10Km
Sanitary Sewer replacement projects	57Km	4Km
Maintenance Hole Inspections	8,242	3,792
Maintenance Hole Repairs	291	38

**1.2 Next steps:**

- State of Good Repair works such as spot repairs, lining, replacement and rehabilitation of sewers and maintenance holes from field investigations. This work will continue.
- Prioritized CCTV and Maintenance Hole Inspection Program: The Region has completed a process to prioritize its CCTV and maintenance hole inspection programs to undertake more frequent inspection in priority catchments.
- The Region has also developed a new process to deploy its CCTV crews to do inspection during rainfall events. This “Wet Weather” CCTV program assists by identifying sources of I&I which manifest themselves only during rainfall events. These types of inspections help identify sources of I&I that routine CCTV inspection process are unable to identify (i.e. those that take place during dry weather).

## 2. Downspout disconnection and fixing other types of cross-connections:

### 2.1 Progress Made to Date:

Significant amount of work is done to find and remediate downspouts that are connected to the sanitary system. Also, other types of cross-connections such as catch basins, laterals, etc. are identified and remediated.

**Table 2 – Downspouts and Cross-connections - Progress made to date**

	<b>Work Completed Region Wide</b>	<b>Work Completed within 3 Active Blocks</b>
Downspout Survey	9216 houses	8103 houses
Downspout Connected to Sanitary	360 downspouts	109 downspouts
Downspout Disconnected by new program	18 downspouts	25 downspouts
Smoke Testing	141 Kilometers	65 Kilometers
Dye Testing	22 Days	13 Days
# of Cross-connections found	32	30
# of Cross-connections fixed	19	9

### 2.2 Next Steps:

- Downspout Disconnection Program: A new downspout disconnection program was started in 2019 and operationalized in 2020. This work will continue.
- Fixing Cross-connections: Downspouts are the most famous type of features that shouldn't be connected to sanitary sewers, but they might be (A.K.A cross-connected). The strategy asked to revise the Region's 2014 downspout disconnection subsidy program as well as expanding this work beyond downspouts to include catch basins, sump pumps, etc. This work will continue.
- Downspout survey program: The downspout survey program catalogs every single downspout within the Region. The exact location, whether it is connected to ground or not, where is the discharge point, etc. It also takes note of all activities performed to remediate the downspouts as well as communications with private residents, state of remediation, etc. This work will continue.
- Smoke and Dye Testing Program: Smoke testing consists of adding a harmless smoke agent to sanitary sewer and observing where the smoke escapes through improper connections. For instance, smoke testing of a sanitary sewer often identifies downspout connections which allow staff to confirm the improper connection for subsequent removal. Where smoke testing is inconclusive, adding dye to suspected improper connection and observing presence in the sanitary system helps identify connectivity. This work will continue.
- Cross-connection subcommittee: The Region and City of Mississauga formed a subcommittee to further define roles and responsibilities and ensure they are fixed in a timely manner. This work will continue.

### 3. Mitigation Measures

#### 3.1 Progress made to date:

Once all the resources for reducing I/I are exhausted, the Region must ensure that the remaining I/I within the system is not causing any problem. This is referred to as I/I Mitigation. It can be done by increasing the capacity of the network by, for example, twining sewers or building storage tanks. Also, mitigation is done by maximizing the use of existing infrastructure such as diverting flow to areas with excess capacity. The wastewater capital development team is currently building a few large-scale structures that will benefit the entire Region. The strategy asked to complement the on-going work with neighborhood-specific mitigation solutions. These solutions will be more complex than disconnecting a downspout but less sophisticated than 11km flow diversion project from east to west side of the Region.

**Table 3 – I/I Mitigation and Studies - Progress made to date**

	<b>Work Completed Region Wide</b>	<b>Work Completed within 3 Active Blocks</b>
Flow Monitoring	348	62
Rainfall Monitoring	32	3
Studies	Master Plan – Regular RTC Strategy – In Progress	One study for each Block is in progress

#### 3.2 Next Steps:

- The studies and projects named above have resulted in the following projects that are currently underway. When completed, these diversions will provide capacity relief to the existing sewer network in these areas and significantly reduce the potential for basement flooding.
  - **Dixie Road Diversion** – south of the QEW - Phase 1 and phase 2 completed in early 2019 and in service. This project helps to alleviate hydraulic surcharging of the Haig Blvd sanitary sewer.
  - **Haig Boulevard Storage** – QEW to Lakeshore – Conversion of existing sub-trunk sanitary sewer into sanitary storage device – Design in 2019 and Construction in 2020-2022.
  - **Cawthra Road Relief Sewer** – Burnhamthorpe Road to Dundas Street – Phase 1 under construction and phases 2, 3, 4 under detailed design. Construction will be 2020-2023.
  - **Lakeshore Road Relief Sewer** – Credit River to Richards Memorial pumping station – Environmental Assessment completed and commencing design process for construction commencing 2021.
  - **East-West Diversion/ Storage** – Diversion sewer along Derry Road from Bramalea to Erin Mills.
  - **West-East Diversion** – Complete in 2013 and in service. Utilized to balance extraneous flows along the Credit trunk sewer.
- Flow monitoring and isolation monitoring: The Region will continue to expand its flow and rainfall monitoring program. These monitors will be strategically placed to isolate

large catchment areas in to smaller catchments in an effort to further identify specific I&I sources and to prioritize field investigation and mitigation programs.

- The studies mentioned above are based on flow and rainfall monitoring program that has been growing and maturing over the past few years.
- The Region has employed state of art technology call (Gauge Adjusted Radar or GAR) to monitoring the weather patterns and precipitation accurately.
- Real Time Control strategy project will be completed in the next 2 years.

#### 4. Preventing I&I in new subdivisions

##### 4.1 Progress made to date:

- New Construction Standards – Staff developed new engineering and construction standards for implementation and engaged engineering consultants, the Greater Toronto Sewer and Watermain Construction Association and the development community via the Building Industry and Land Development Association. Staff have also commenced work with the Ministry of the Environment, Climate Change and Parks on new Provincial standards for the wastewater systems.

##### 4.2 Next Steps:

- I&I in New Subdivision Program - Peel staff led a study on behalf of the Regional Public Works Commissioners of Ontario to quantify I&I in new subdivision from the private side. This has created an awareness amongst the building officials and development industry. A working group of Regional staff and developers have been formed to proactively deal with I&I from the new subdivision. Staff are engaged in developing new agreements and criteria for I&I allowance in new subdivisions.

#### 5. Current Approved Capital projects

Table 4 shows the list of capital project related to I&I that are currently approved.

**Table 4 – Current Approved I&I Projects**

Capital Project #	Project Description	Funding (M)
21-2512	I&I Studies and Investigations	\$ 2.5
21-2100/21-2401	Flow and Rainfall Monitoring Program	\$ 1.6
20-2512	I&I Studies and Investigations	\$ 1.0
20-2100/20-2401	Flow and Rainfall Monitoring Program	\$ 1.6
18-2301/20-2301	I&I SOGR Remediation Works and Downspout Program	\$ 6.5
19-2307	Maintenance Hole Rehabilitation	\$ 2.5
18-2252	Cawthra Road Trunk Sewer Diversion Phase 2	\$ 49.6
19-2215	Lakeshore Road West Trunk Sewer – Design	\$ 6.0
19-2405/19-2410/19-2471	Various Trunk Sewer Rehabilitation Projects – Design	\$ 2.5

Disclaimer: The numbers and statistics provided in this document are all approximate values and are subject to change. The timeframe for the statistics provided here may vary from one to the other.