

Appendix C – Manotick Stormwater Management Retrofit

- Part 1 – Lot Level Retrofit Options on City-Owned Parcels
- Table A – Lot Level Summary
- Part 2 – End of Pipe Retrofit Options
- Table B – End of Pipe Summary

MUD CREEK SUBWATERSHED STUDY - Manotick SWM Retrofit Assessment

Potential for Lot Level Retrofit on City-Owned Parcels

Appendix C1

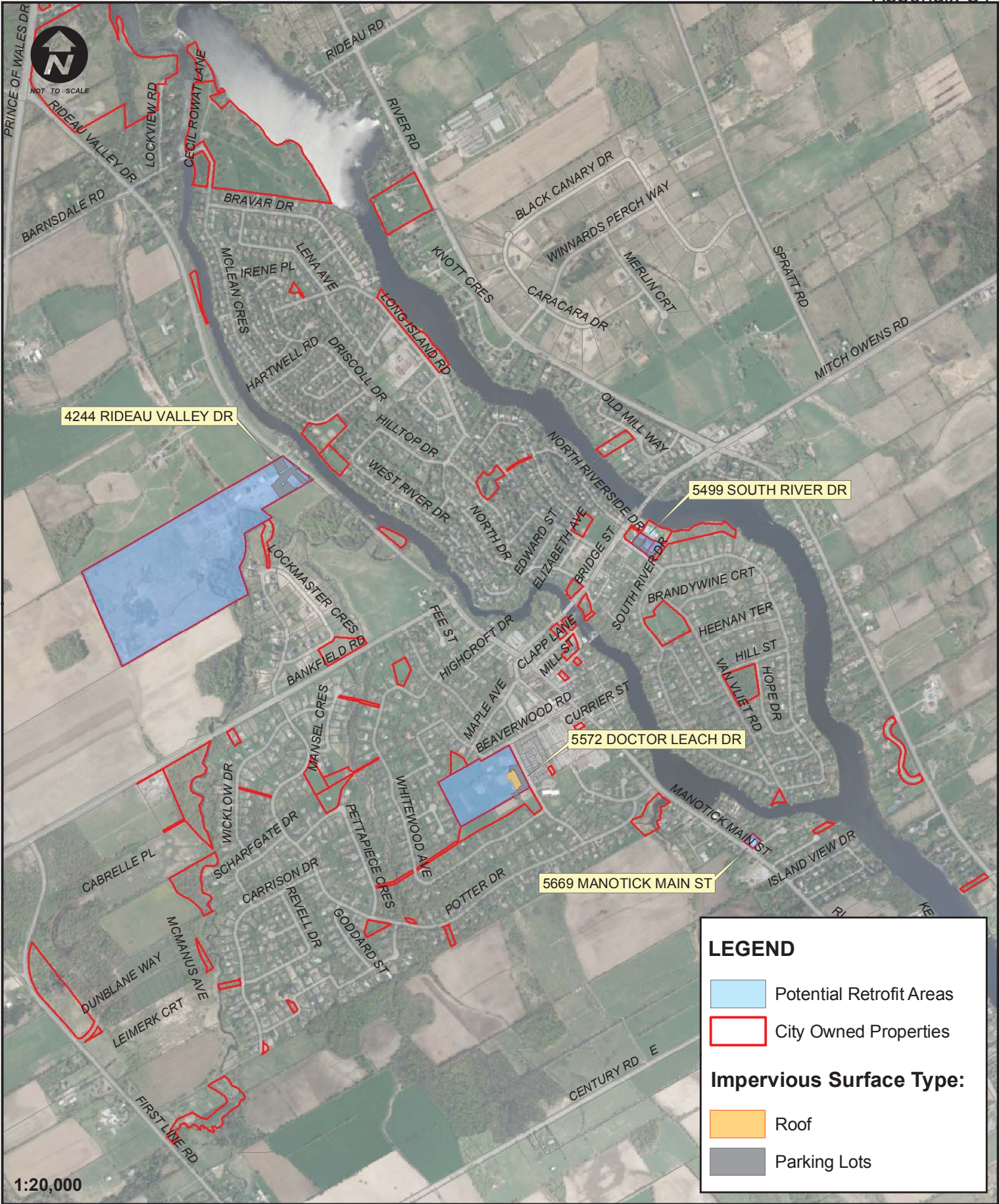


Table A: LOT LEVEL OPPORTUNITIES ON CITY OWNED PROPERTIES

ID	Address	Name	Replacement Cost and Scheduling ¹								Roof Drainage Characteristics		Implementation Potential		
			Roof				Pavement								
			Replacement Description ²	Year	Cost	Area ³ [m ²]	Replacement Description ²	Year	Cost	Area ³ [m ²]	Flat Roof	Downspout	Green Roof ⁵	Pervious Pavement ⁶	Rain Barrel/Cistern
1	5669 Manotick Main Street	Fire Station 94/Paramedic Post - Manotick	N/A	-	-	700	Replace asphalt in Parking Lot	2018	123,000	720	no	yes	no	yes	yes
2	5499 South River Drive	Library: Manotick	N/A	-	-	550	Replace asphalt in Parking Lot	2016	102,000	2360	no	none detected in aerial	no	yes	TBD ⁴
3	5572 Doctor Leach Drive	Manotick Arena and Community Centre	Replace protected roof area F installed in 1995	2016	69,000	2610	N/A	-	-	-	yes	none detected in aerial	yes	-	TBD ⁴
			Replace EPDM roof area A	2020	296,000		N/A	-	-	-	yes	none detected in aerial	yes	-	TBD ⁴
			N/A	-	-	-	Replace asphalt	2020	204,000	4330	-	-	-	yes	-
4	4244 Rideau Valley Drive North	Manotick Depot Office and Garage	N/A	-	-	1650	Replace asphalt in the yard	2018	255,000	7590	yes	none detected in aerial	no	yes	TBD ⁴
			N/A	-	-		Replace asphalt in the employee lot	2018	82,000	2390				yes	TBD ⁴

¹ Building maintenance summary spreadsheet was provided by Infrastructure Assessment - Bldg & Park Assets

² Excludes the following surface types: basketball courts, tennis courts, etc

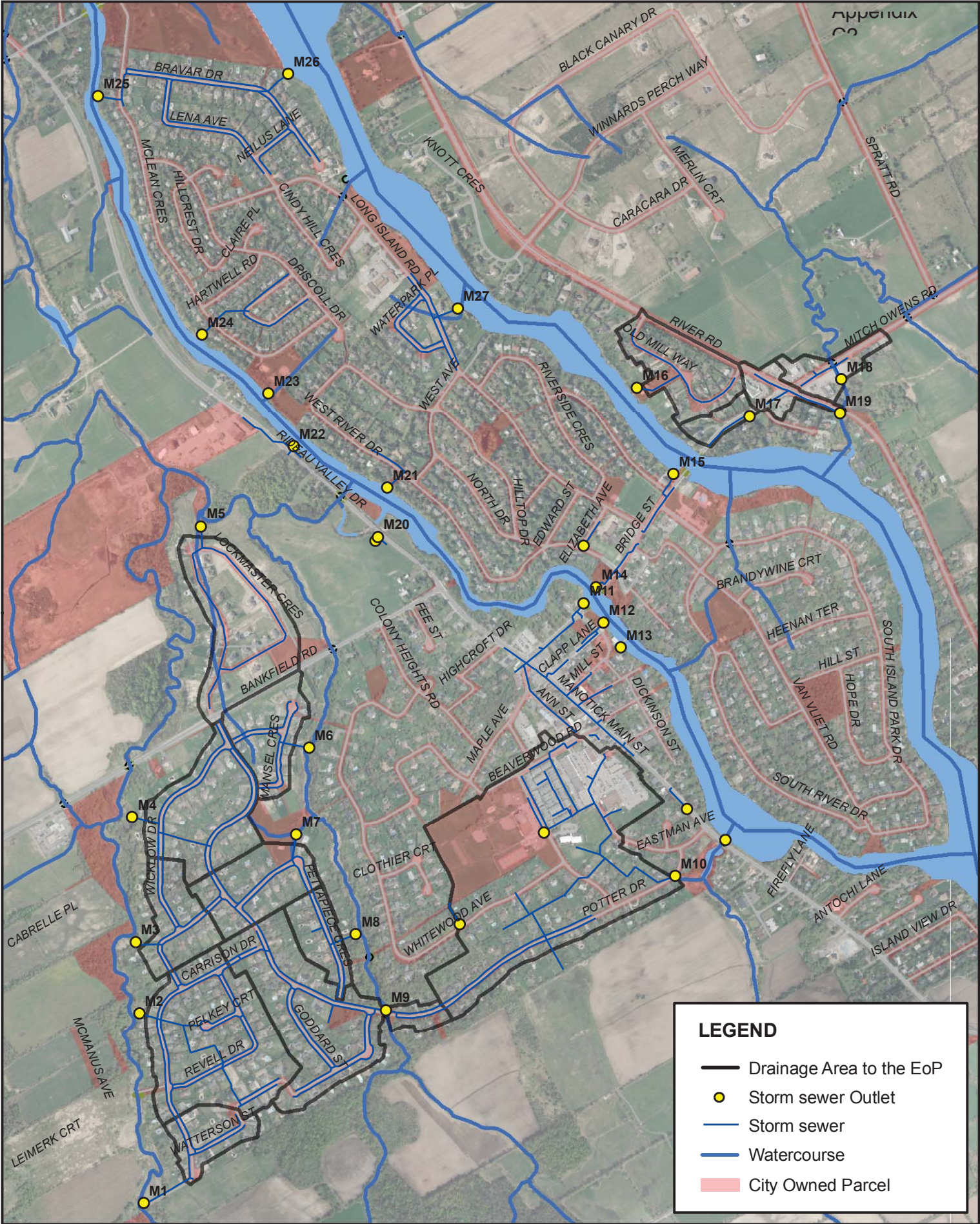
³ Surface type and area extracted from "impervious2009" GIS layer

⁴ Field investigation of roof drainage system required

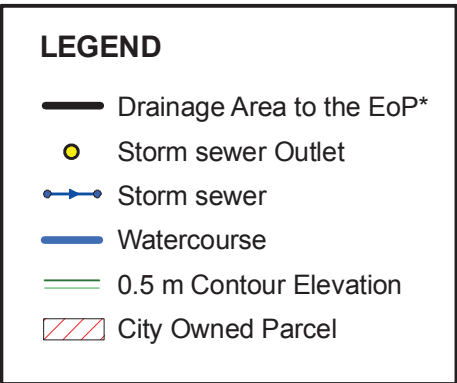
⁵ Subject to structural considerations

⁶ Field investigation on soil characteristics and connection to the storm sewer system required

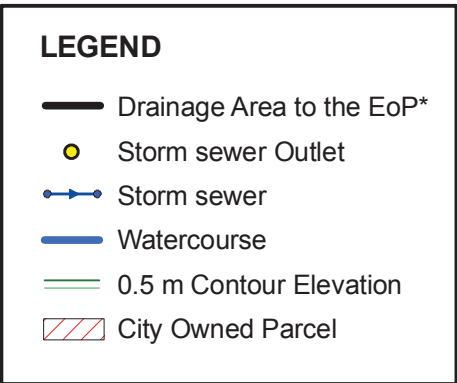
MUD CREEK SUBWATERSHED STUDY - Manotick SWM Retrofit Assessment



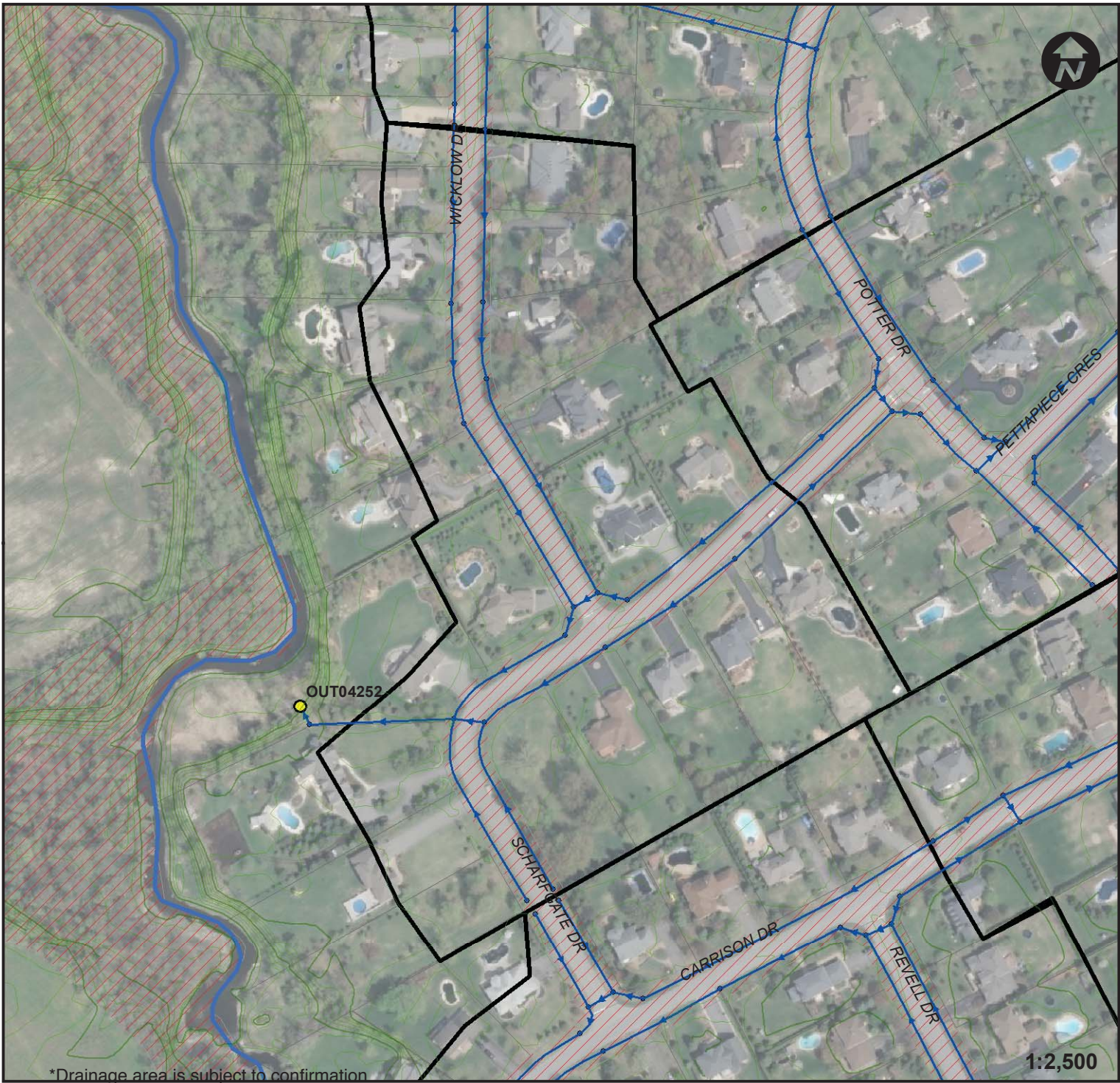
OUTLET 4246: EoP #M1



OUTLET 4247: EoP #M2



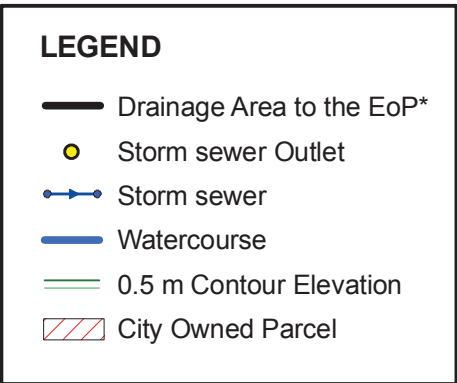
OUTLET 4252: EoP #M3



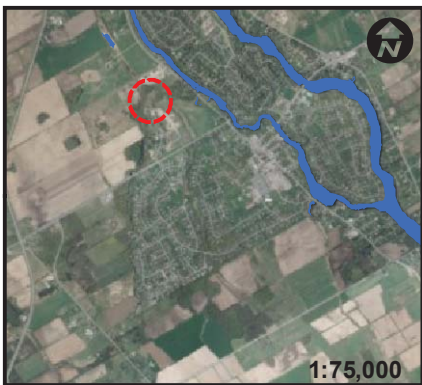
LEGEND

- Drainage Area to the EoP*
- Storm sewer Outlet
- Storm sewer
- Watercourse
- 0.5 m Contour Elevation
- ▨ City Owned Parcel

OUTLET 4248: EoP #M4



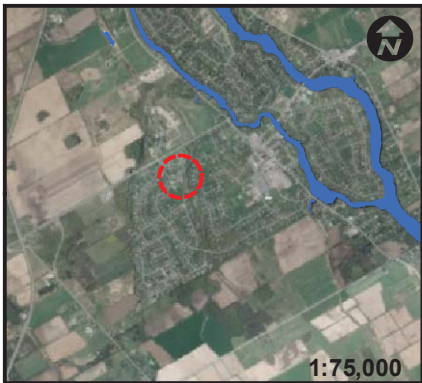
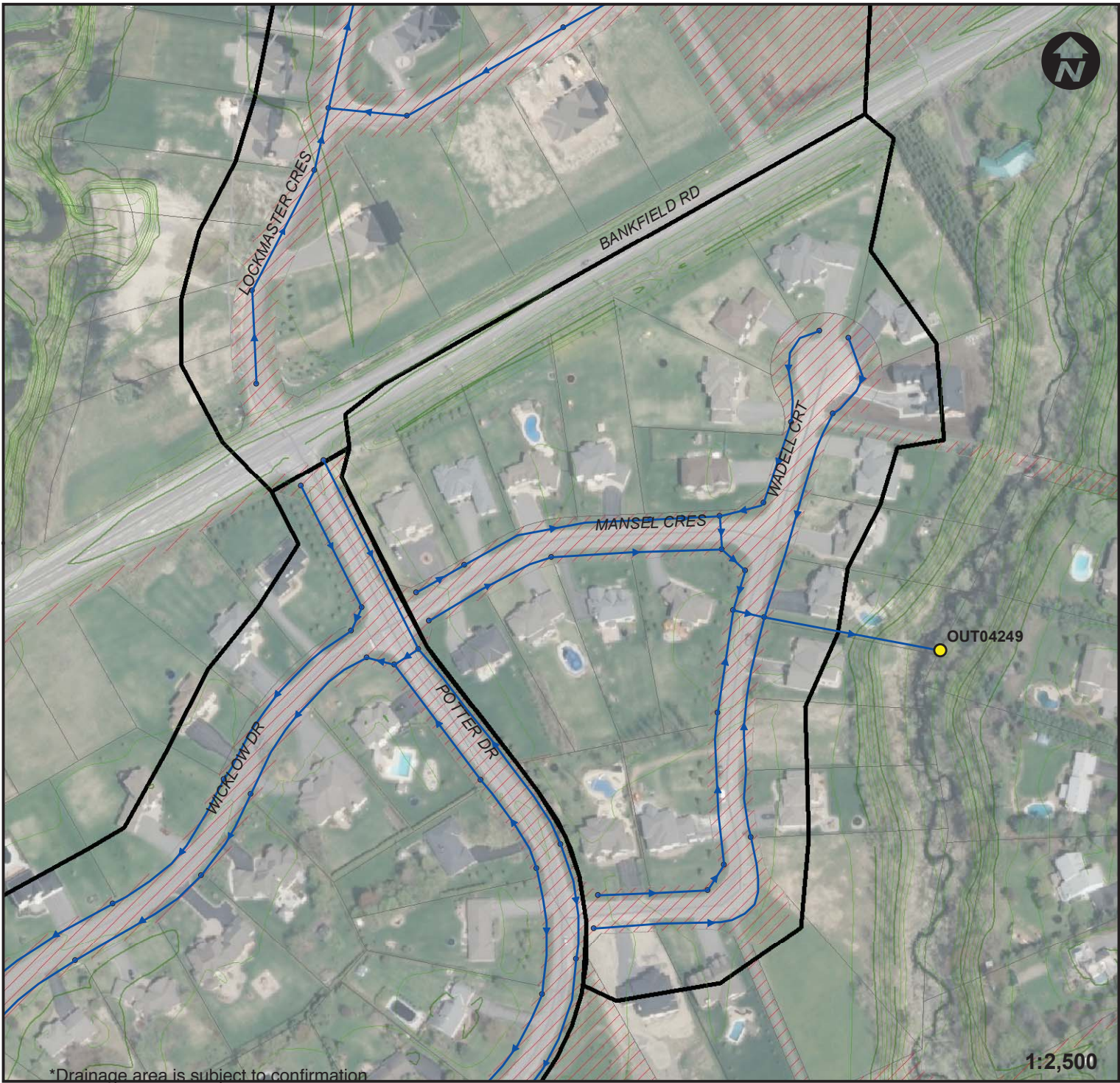
OUTLET 13026: EoP #M5



LEGEND

- Drainage Area to the EoP*
- Storm sewer Outlet
- Storm sewer
- Watercourse
- 0.5 m Contour Elevation
- City Owned Parcel

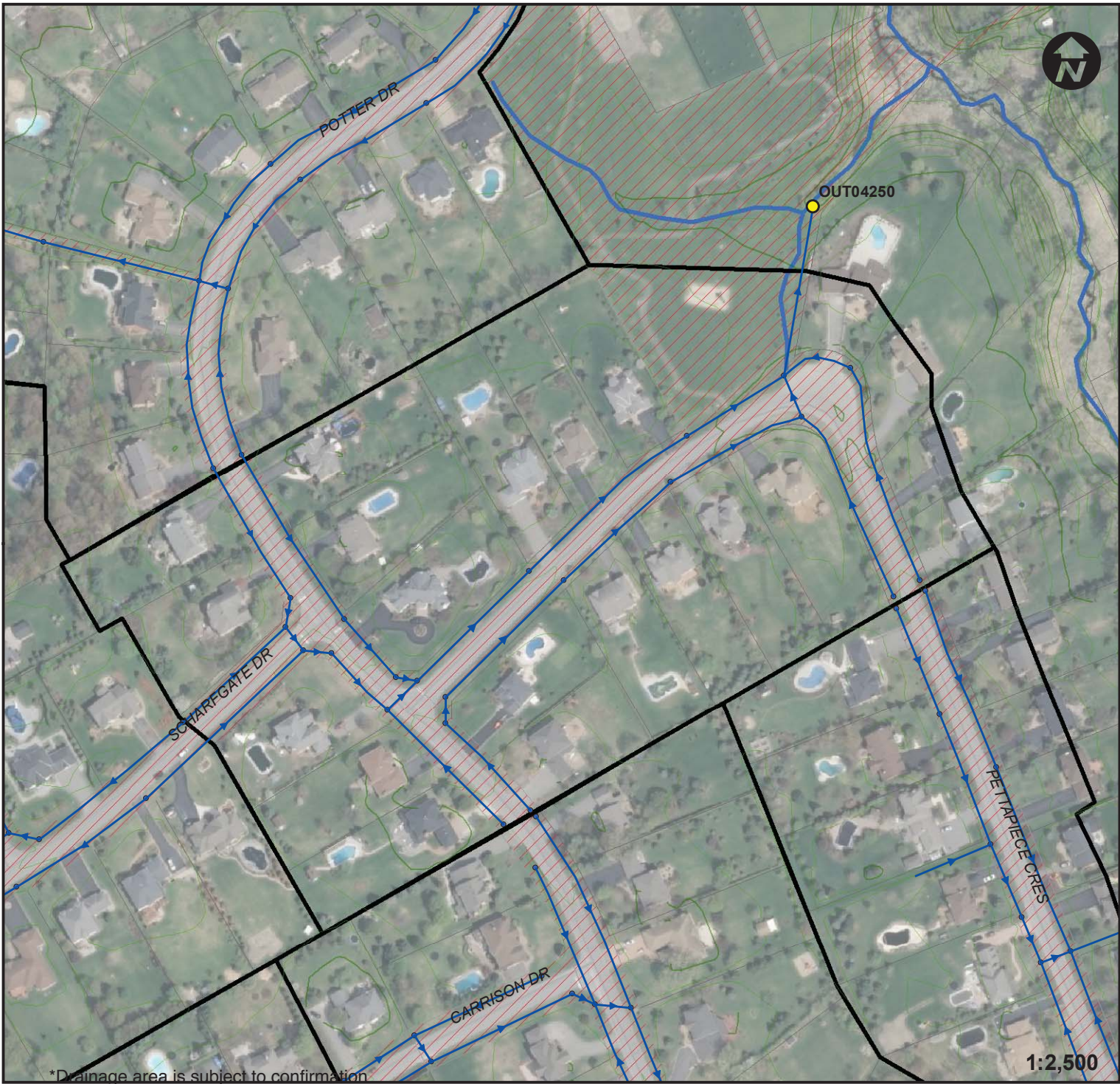
OUTLET 4249: EoP #M6



LEGEND

- Drainage Area to the EoP*
- Storm sewer Outlet
- Storm sewer
- Watercourse
- 0.5 m Contour Elevation
- ▨ City Owned Parcel

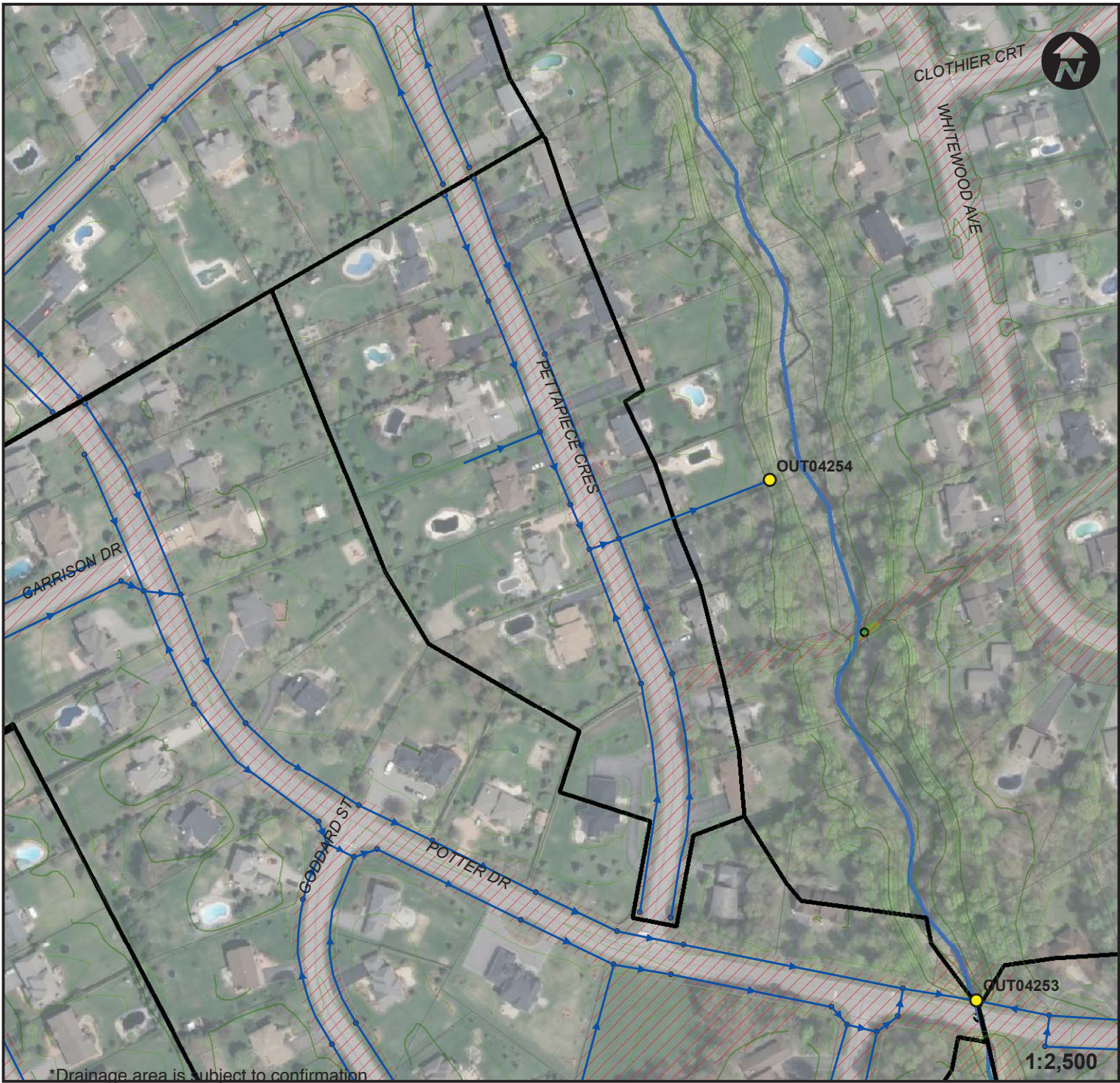
OUTLET 4250: EoP #M7



LEGEND

- Drainage Area to the EoP*
- Storm sewer Outlet
- Storm sewer
- Watercourse
- 0.5 m Contour Elevation
- City Owned Parcel

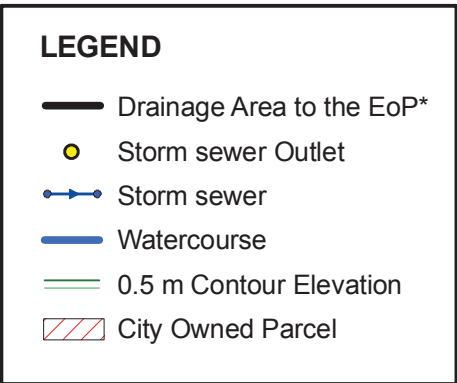
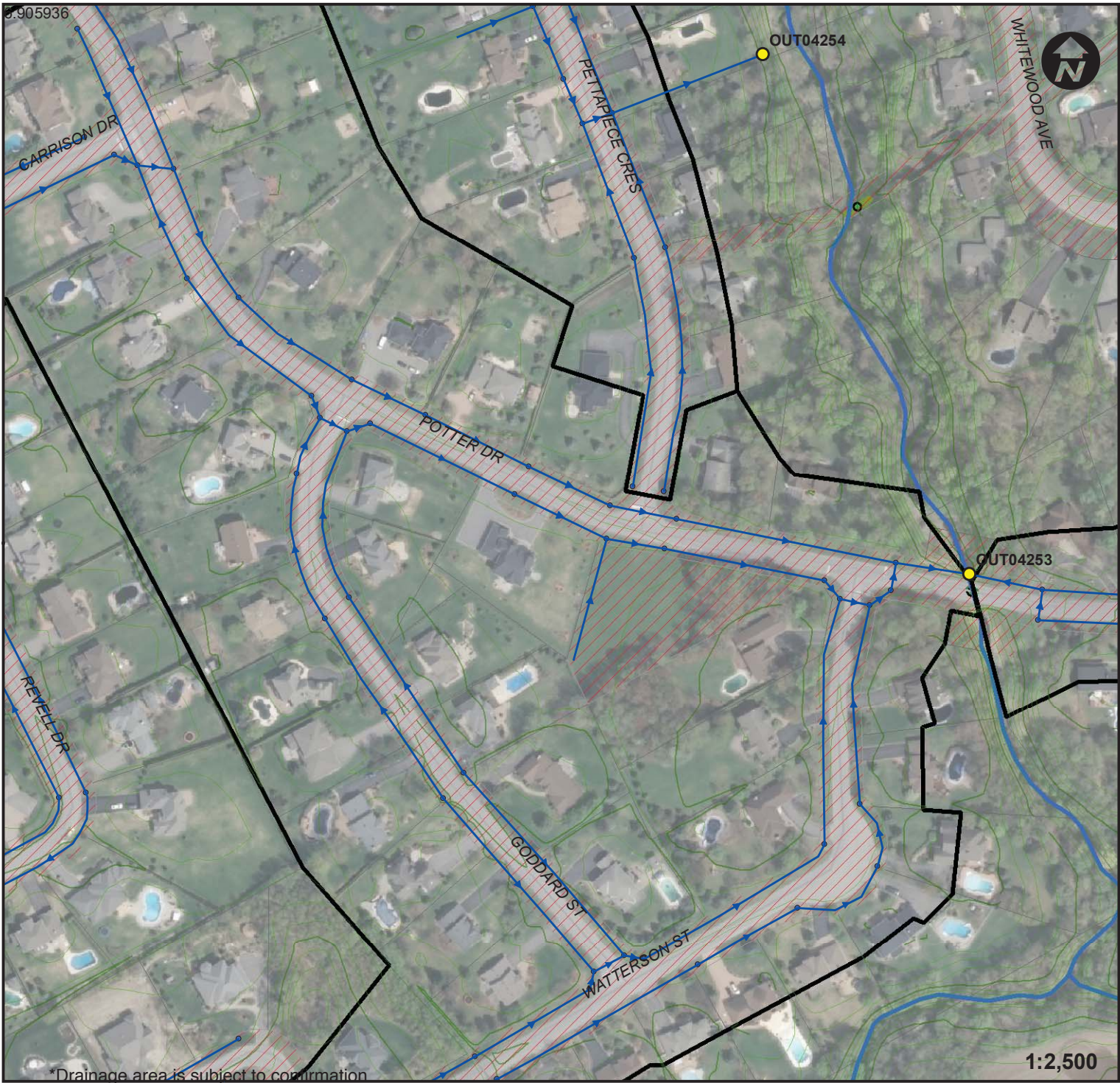
OUTLET 4254: EoP #M8



LEGEND

- Drainage Area to the EoP*
- Storm sewer Outlet
- Storm sewer
- Watercourse
- 0.5 m Contour Elevation
- ▨ City Owned Parcel

OUTLET 4253: EoP #M9



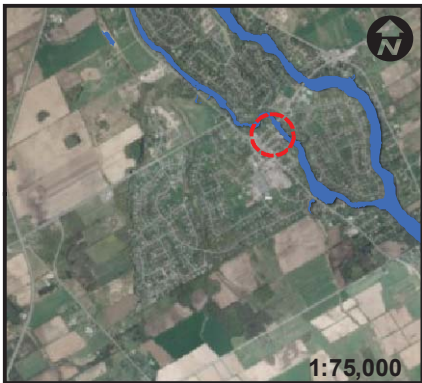
OUTLET 4241: EoP #M10



LEGEND

- Drainage Area to the EoP*
- Storm sewer Outlet
- Storm sewer
- Watercourse
- 0.5 m Contour Elevation
- City Owned Parcel

OUTLET 4257: EoP #M11



LEGEND

- Drainage Area to the EoP*
- Storm sewer Outlet
- Storm sewer
- Watercourse
- 0.5 m Contour Elevation
- ▨ City Owned Parcel

Table B: END-OF-PIPE OPPORTUNITIES

Manotick SWM Retrofit Assessment

Potential End-of-Pipe (EoP) Locations Reviewed

Internal ID	Outlet ID	Drainage Area (ha) ¹	Location	Land Ownership	Surface / Subsurface	SWM Measure	Quality / Quantity	STM Pipe Size (mm)	Invert at the outlet	Other Information Used In EoP Review	Mature Vegetation Impacts	Servicing Conflicts	Location Access	SWM Measure Selected	Reasons for Rejection	SWM facility Location
M1	4246	3.86	West of Carrison Dr	Private - Unknown	-	-	-	525	85.57	-	-	-	Access from Carrison Dr	-	Area is too small ^A	-
M2	4247	16.87	West of Scharfgate Dr and Carrison Dr	Private - Unknown	-	-	-	750	58.58	-	-	-	Must ask permission to the property owner	-	No space available (private land)	-
M3	4252	5.46	West of Scharfgate Dr	Private - Unknown	-	-	-	525	84.93	-	-	-	Must ask permission to the property owner	-	Area is too small ^A	-
M4	4248	10.42	West of Wicklow Dr	Private - Unknown	-	-	-	675	84.66	-	-	-	Access from Bankfield Rd. Must ask permission to property owner	-	No space available (private land)	-
M5	13026	12.27	North of Lockmaster Crescent	Public - City of Ottawa lands	-	-	-	825	83.35	-	-	-	Access from Lockmaster Crescent	OGS	Ditch pipe system already implemented for quality control (TBC)	At the outlet
M6	4249	6.00	East of Mansel Crescent	Private - Unknown	-	-	-	450	85.00	-	-	-	Access via Wadell Crescent. Ask permission to property owner	-	Area is too small ^A	-
M7	4250	6.90	North of Pettapiece Crescent	Public - City of Ottawa lands	-	-	-	675	85.16	-	-	-	Access via Pettapiece Crescent	-	Area is too small ^A	-
M8	4254	3.53	East of Pettapiece Crescent	Private - Unknown	-	-	-	600	85.91	-	-	-	Access via Pettapiece Crescent. Ask permission to property owner	-	Area is too small ^A	-
M9	4253	14.44	At Potter Drive and Watterson Street intersection	Public - City of Ottawa lands	-	-	-	750	85.74	-	-	-	Access via Potter Drive	-	No space available at the outlet or some mature vegetation would be affected	-
M10	4241	39.94	70 m south from Potter Drive and Eastman Avenue intersection	Public - City of Ottawa lands	Surface / Subsurface	OGS ³	Quality	1200	85.10	Drainage area should be reviewed based on the most up-to-date storm sewer data	Some mature vegetation would be affected by OGS implementation	No	Access via Potter Drive	OGS	Pond implementation would be in conflict with the watercourse downstream of Potter Drive	At the outlet
M11	4257	TBD ²	East of Dickinson Circle	Private - Unknown	Subsurface	OGS ³	Quality	1000	83.36	Sewer data are missing. Drainage area unknown	-	-	Access via Bridge Street	OGS	TBC when sewer data is available (work in progress)	At the outlet
M12	10427	TBD ²	East of Clapp Lane	Public - City of Ottawa lands	-	-	-	300	86.67	Sewer data are missing. Drainage area unknown	-	-	Access via Clapp Lane	-	Area is too small (TBC)	-
M13	10428	TBD ²	East of Mill Street	Public - City of Ottawa lands	-	-	-	Unknown	Unknown	Sewer data are missing. Drainage area unknown	-	-	Access via Mill Street	-	Area is too small (TBC)	-
M14	4258	TBD ²	West of West River Drive	Public - Unknown	-	-	-	375	82.30	Sewer data are missing. Drainage area unknown	-	-	Access via West River Drive	-	Area is too small (TBC)	-
M15	4259	TBD ²	40 m west from Bridge St and Eastman Northriverside Dr intersection	Public - City of Ottawa lands	-	-	-	525	85.53	Sewer data are missing. Drainage area unknown	-	-	Access via Bridge Street	-	No space available at the outlet or some mature vegetation would be affected	-
M16	10429	6.97 (TBC ²)	West of Old Mill Way	Public - City of Ottawa lands	-	-	-	675	85.49	Sewer data are missing. Drainage area unknown	-	-	Access via Old Mill Way. Must ask permission to the property owner	-	Area is too small (TBC)	-
M17	11004	1.72 (TBC ²)	At Mitchowens Rd and Kitoman Cres	Public - City of Ottawa lands	-	-	-	450	87.05	Sewer data are missing. Drainage area unknown	-	-	Access via Mitchowens Rd	-	Area is too small (TBC)	-
M18	10545	2.40 (TBC ²)	170 m South-East of River Rd and Mitchownes Rd interection	Private - Unknown	-	-	-	1200	Unknown	Sewer data are missing. Drainage area unknown	-	-	Access via Mitchowens Rd. Must ask permission to the property owner	-	Area is too small (TBC)	-
M19	4260	3.03 (TBC ²)	South of Mitchowens Rd	Public - City of Ottawa lands	-	-	-	525	85.65	Sewer data are missing. Drainage area unknown	-	-	Access via River Rd	-	Area is too small (TBC)	-
M20	14551	TBD ²	West of Rideau Valley Dr, North of Bankfield Dr	Public - Unknown	Storm sewer Database Incomplete			600	83.75	Storm sewer Database Incomplete						
M21	4255		West of West River Dr, North of West Ave	Public - City of Ottawa lands				Unknown	Unknown							
M22	10544		East of Rideau Valley Dr	Private - Unknown				650	Unknown							
M23	13830		East of Rideau Valley Dr, South of McLean Cres	Public - City of Ottawa lands				Unknown	Unknown							
M24	4256		West of McLean Cres	Private - Unknown				Unknown	Unknown							
M25	4245		West of McLean Cres	Public - Unknown				600	81.08							
M26	4244		East of Bravar Dr	Private - Unknown				600	85.30							
M27	4251		East of Long Island Rd	Private - Unknown				675	85.62							

Drainage area must be at least 20 ha to be a candidate for potential EoP retrofit

Sources: City of Ottawa GIS database

¹ Drainage area is subject to confirmation, based on the most up-to-date stormsewer database

² Storm sewer database incomplete

³ OGS: Oil and Grit Separator

NB: Ponds and wetlands can provide quality and quantity control; OGSs can only provide quality control.