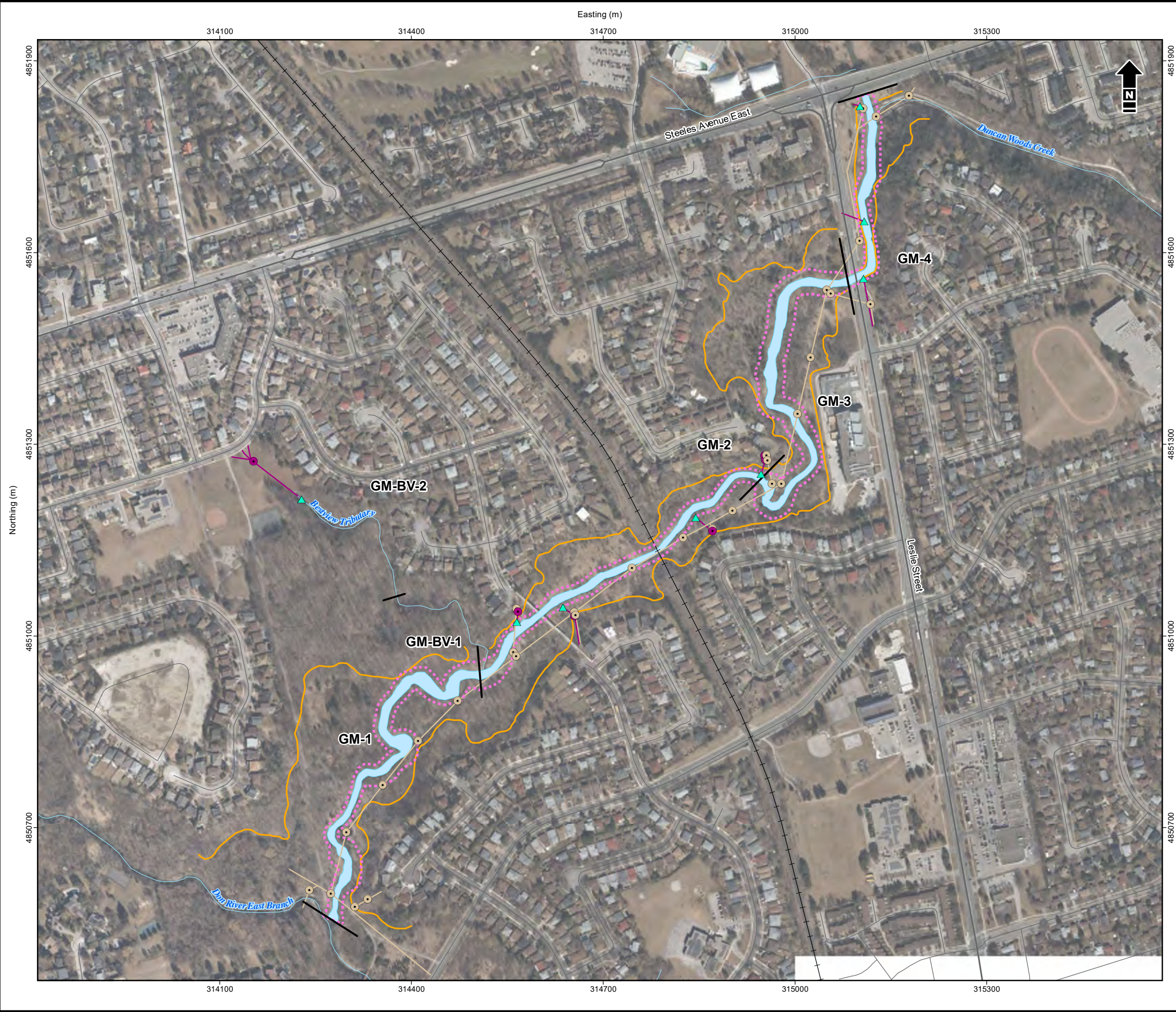


APPENDIX C
Characterization and Development of Alternatives
(Phase 2)

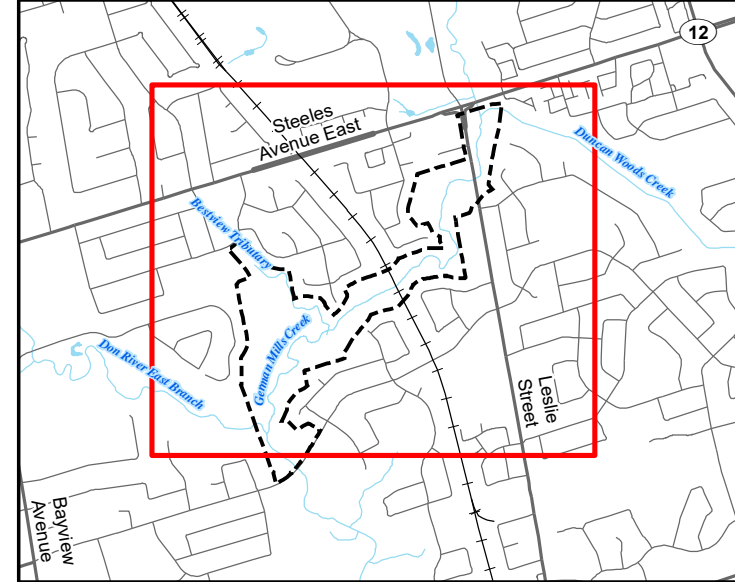
APPENDIX C9

Hazard Limit and Lateral Migration Sites

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- Watercourse
- Reach Break
- Highway
- Road
- Railway
- Valley Bottom
- Stormwater Outfall
- Sanitary Sewer Maintenance Hole
- Storm Sewer Maintenance Hole



Disclaimer: Sewers have been clipped to the Focused Study Area.

Reference: Contains information licensed under the Open Government License - Ontario, Imagery (2018) obtained from Canada Map Sales, used under license. Imagery provided by: Used under license.

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60 0 60 120 metres

NAD27 MTM zone 10



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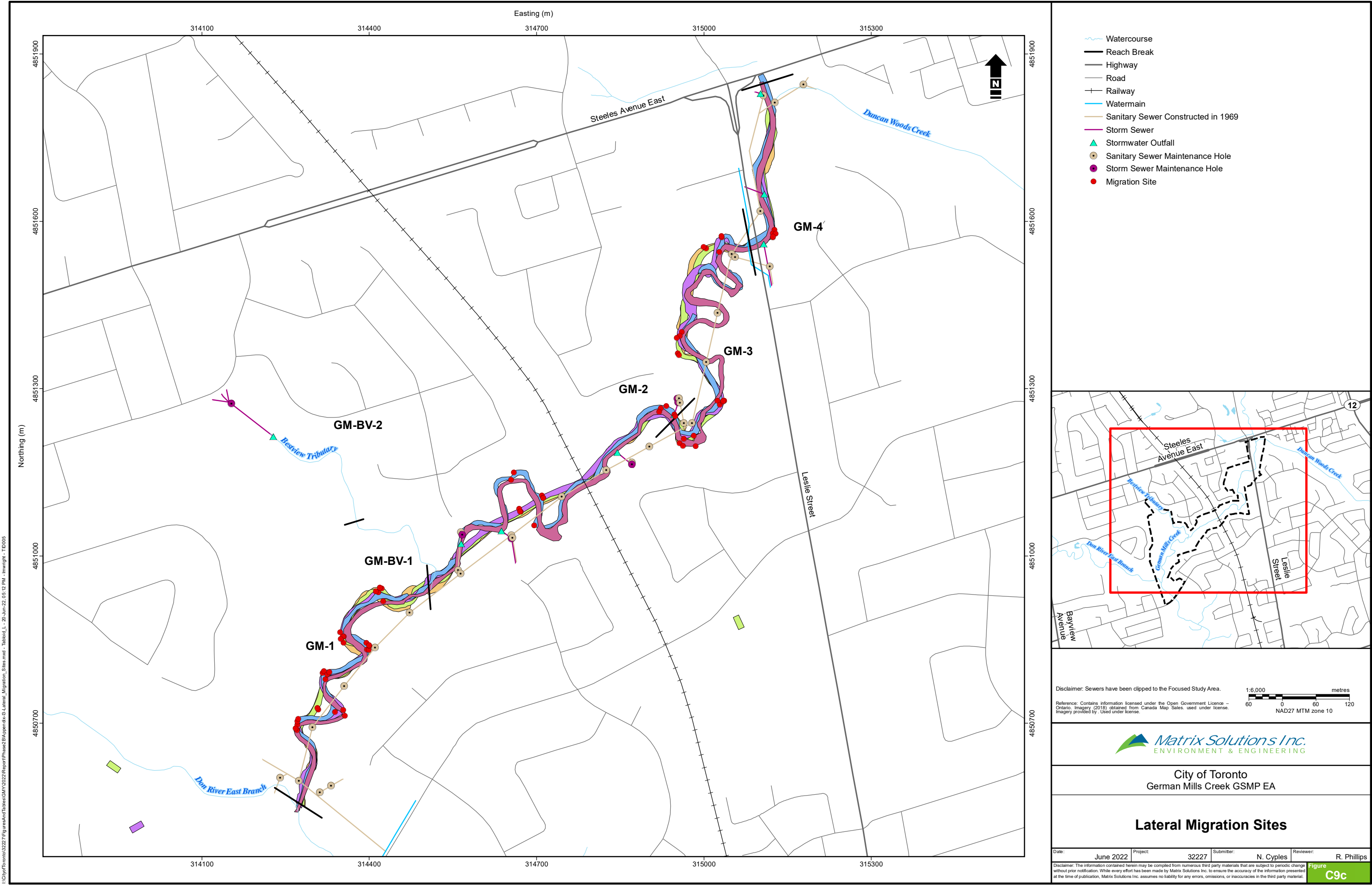
City of Toronto
German Mills Creek GSMP EA

**Projection of Potential Lateral
Migration Zone Over 25 Years**

Date: June 2022	Project: 32227	Submitter: N. Cyples	Reviewer: R. Phillips
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Figure C9b

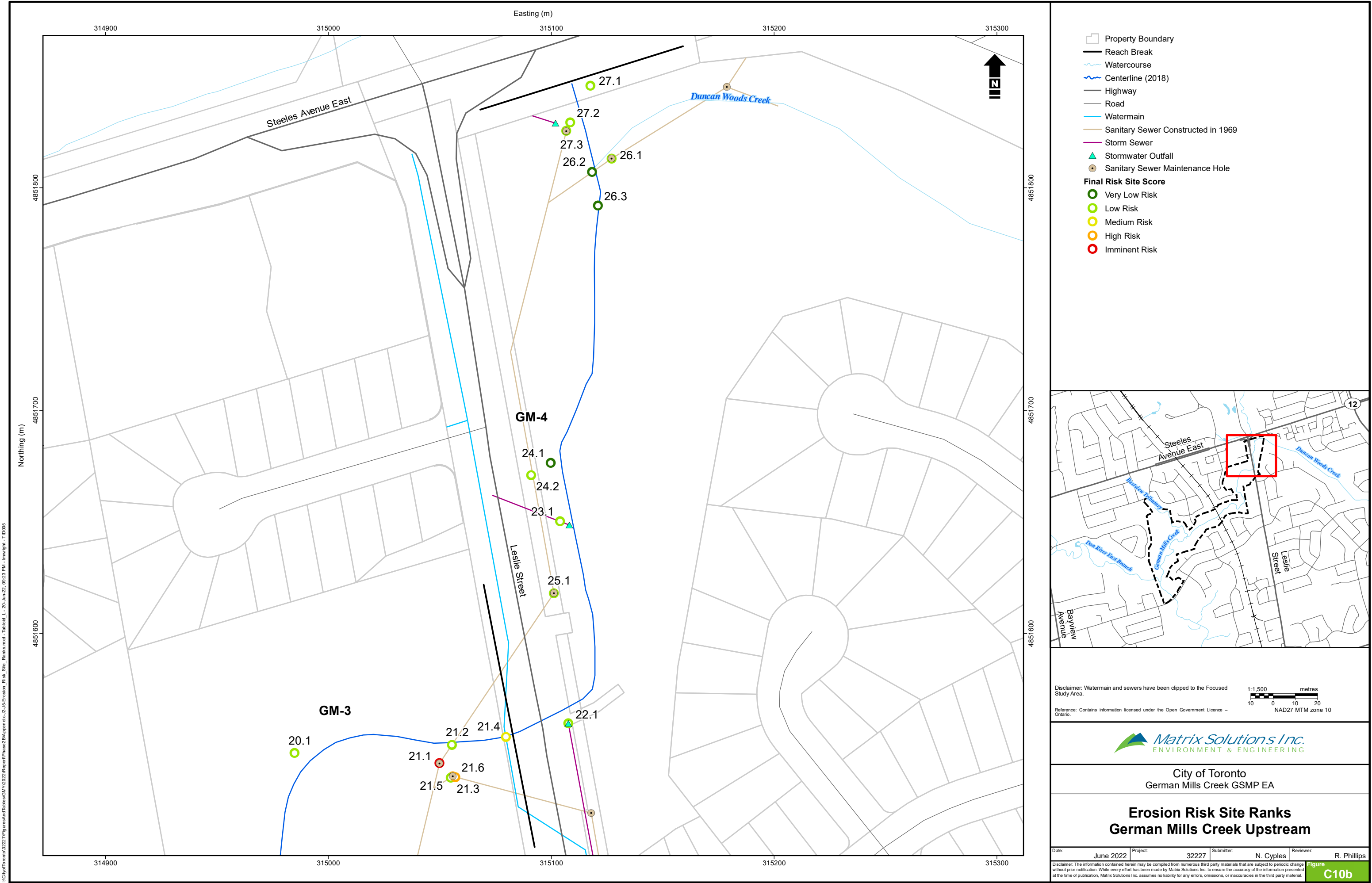


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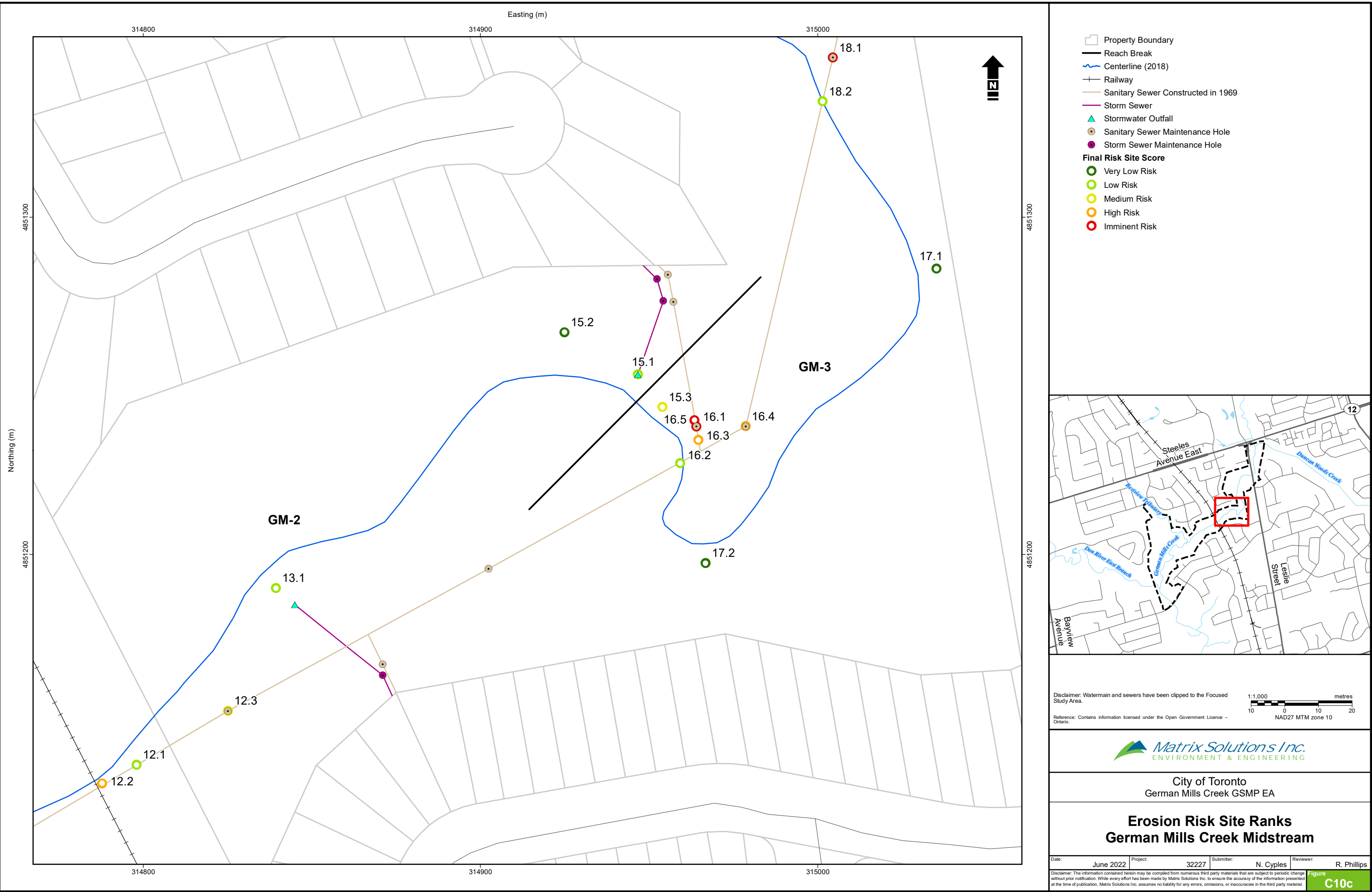
APPENDIX C10

Erosion Risk Site Ranks

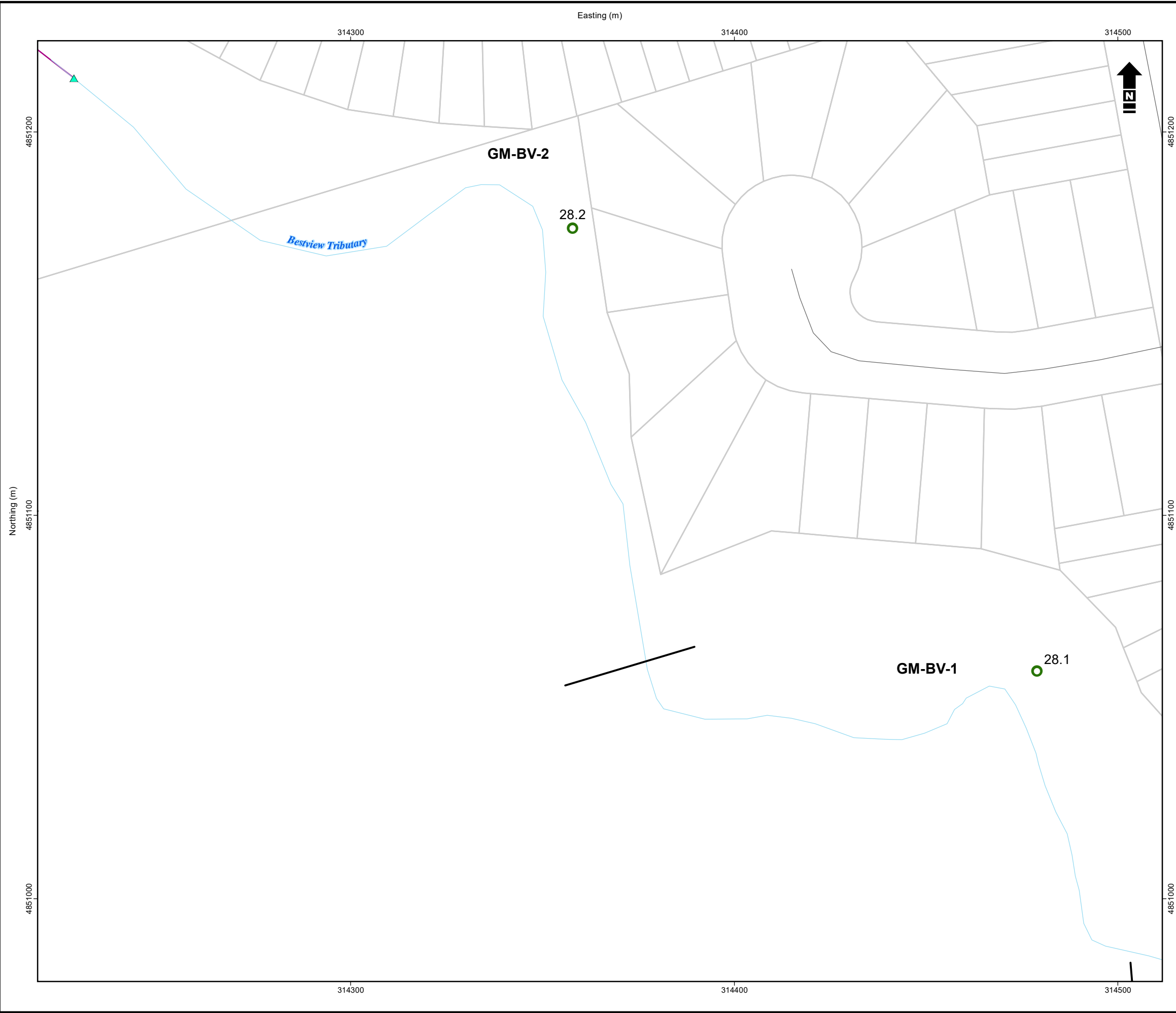
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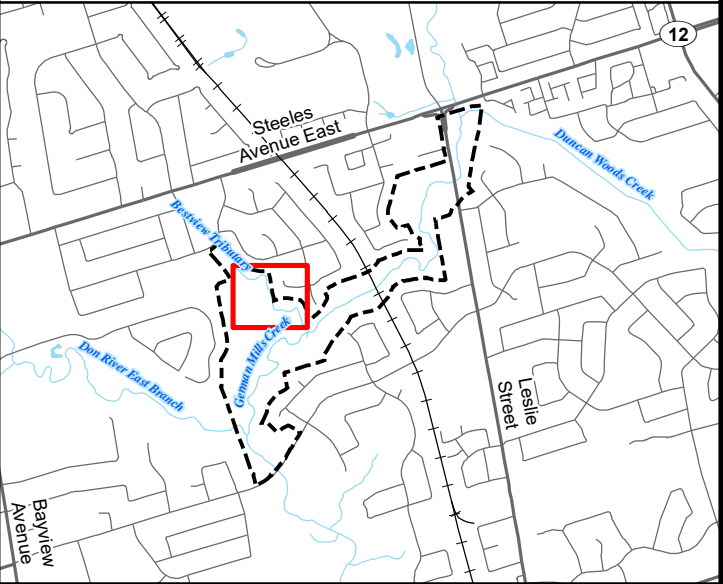
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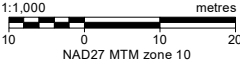
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- Property Boundary
- Reach Break
- Watercourse
- Centerline (2018)
- Storm Sewer
- Stormwater Outfall
- Final Risk Site Score**
- Very Low Risk



Disclaimer: Watermain and sewers have been clipped to the Focused Study Area.
Reference: Contains information licensed under the Open Government Licence - Ontario.



City of Toronto
German Mills Creek GSMP EA

Erosion Risk Site Ranks Bestview Tributary

Date:	June 2022	Project:	32227	Submitter:	N. Cyples	Reviewer:	R. Phillips
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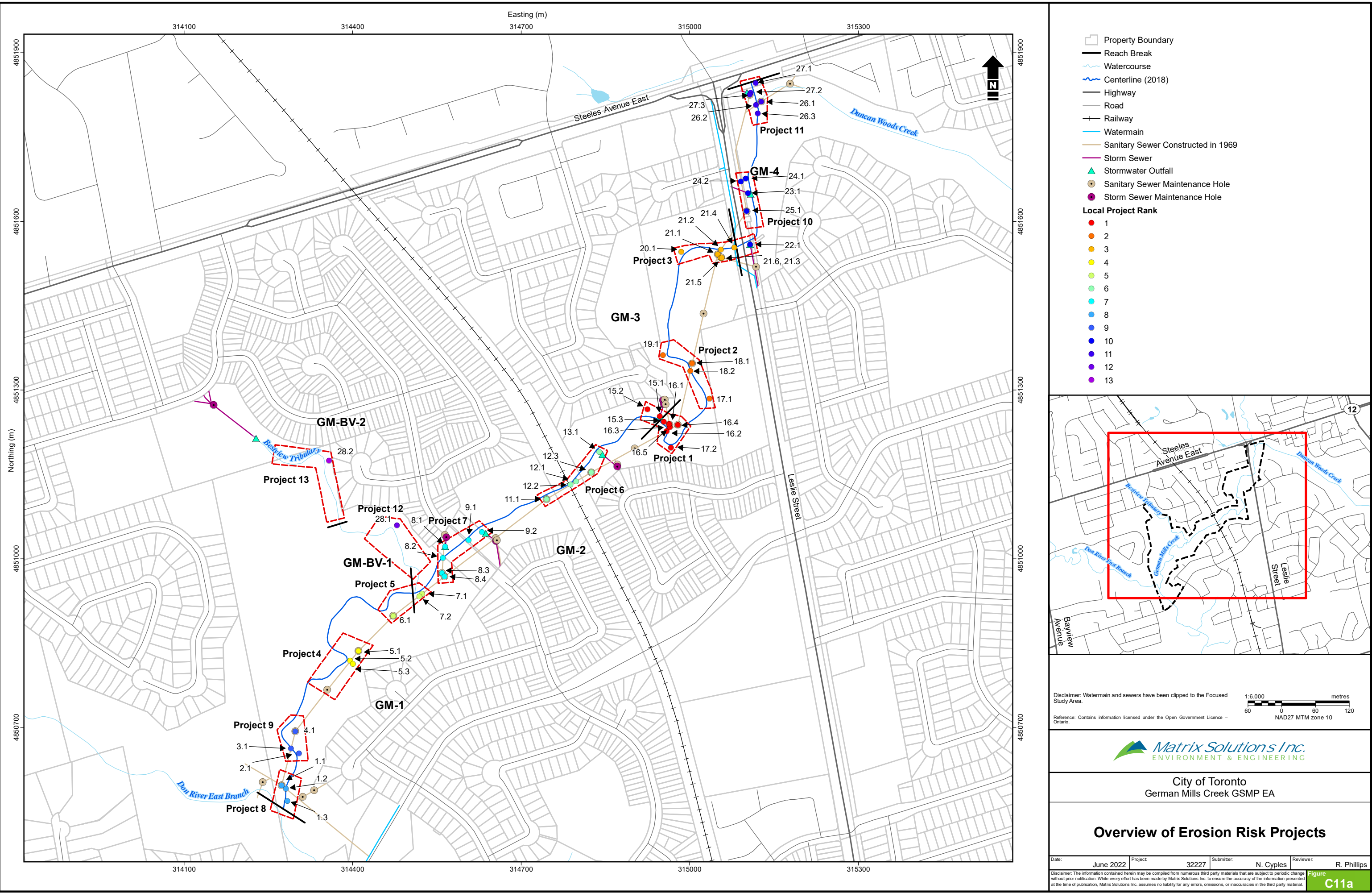
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Figure
C10e

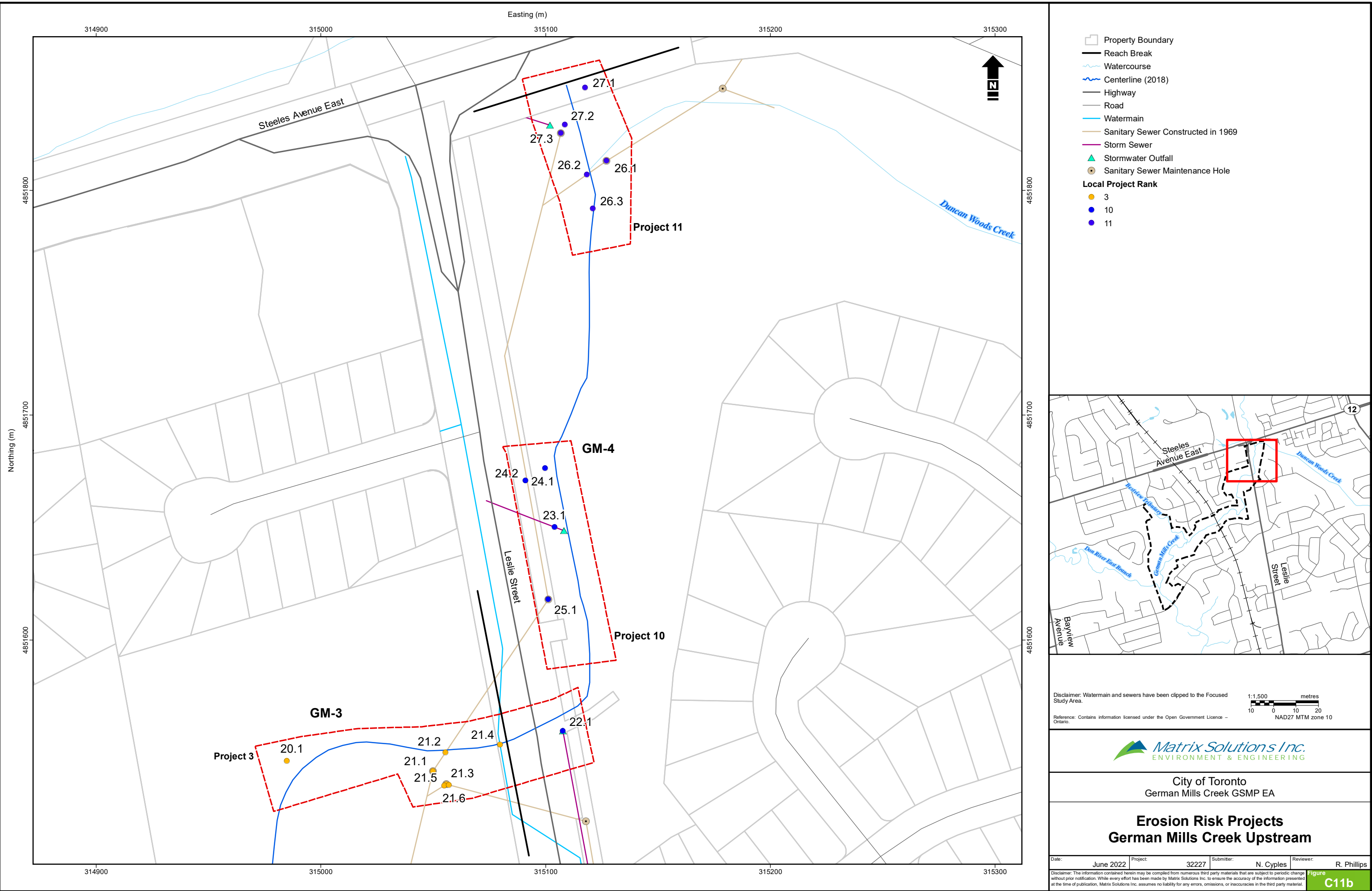
APPENDIX C11

Erosion Risk Projects

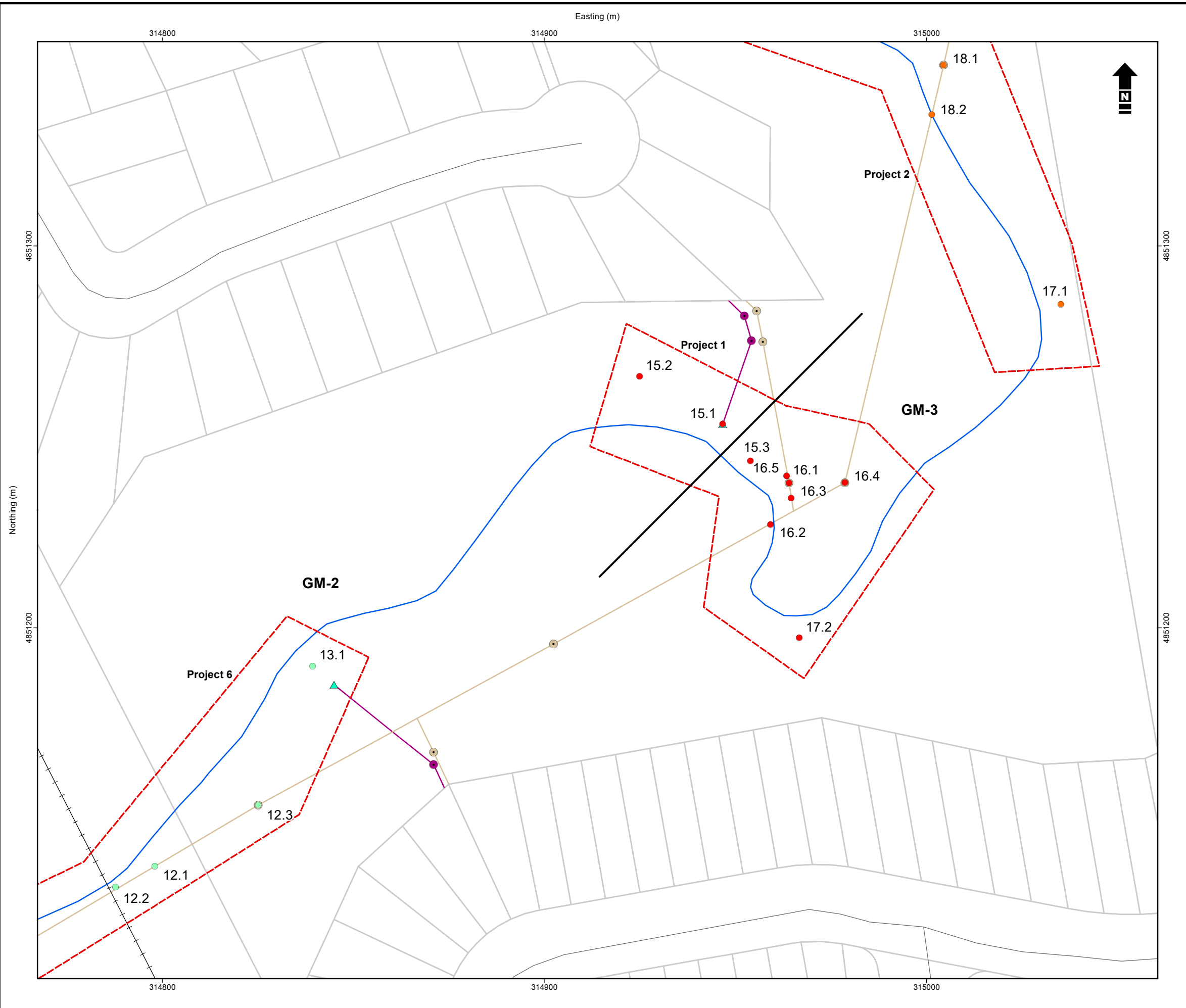
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Property Boundary

Reach Break

Centerline (2018)

Railway

Sanitary Sewer Constructed in 1969

Storm Sewer

Stormwater Outfall

Sanitary Sewer Maintenance Hole

Storm Sewer Maintenance Hole

Local Project Rank

- 1
- 2
- 6

Disclaimer: Watermain and sewers have been clipped to the Focused Study Area.

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1:1,000

metres

10 0 10 20

NAD27 MTM zone 10

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German Mills Creek GSMP EA

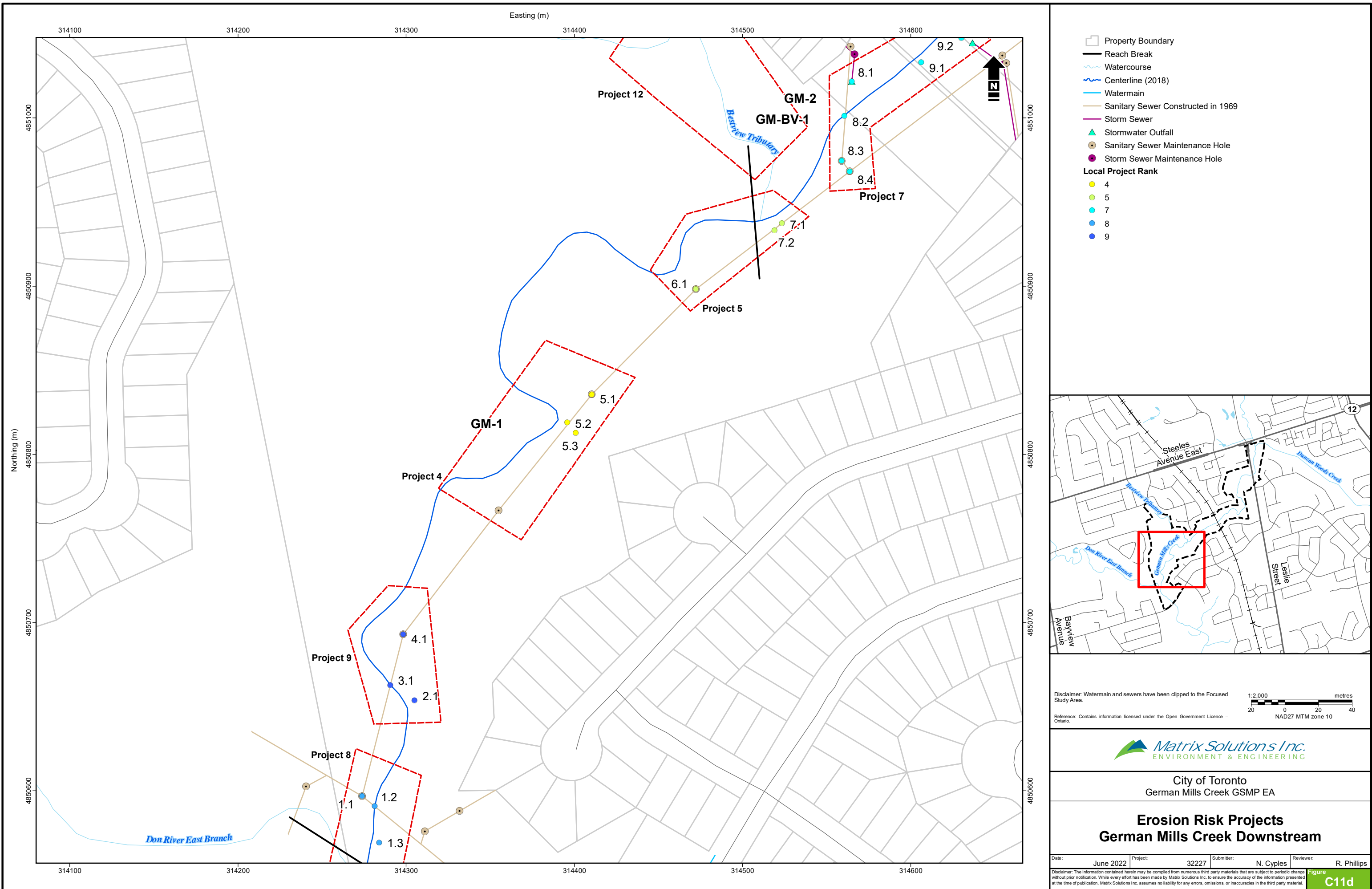
**Erosion Risk Projects
German Mills Creek Midstream**

Date: June 2022	Project: 32227	Submitter: N. Cyples	Reviewer: R. Phillips
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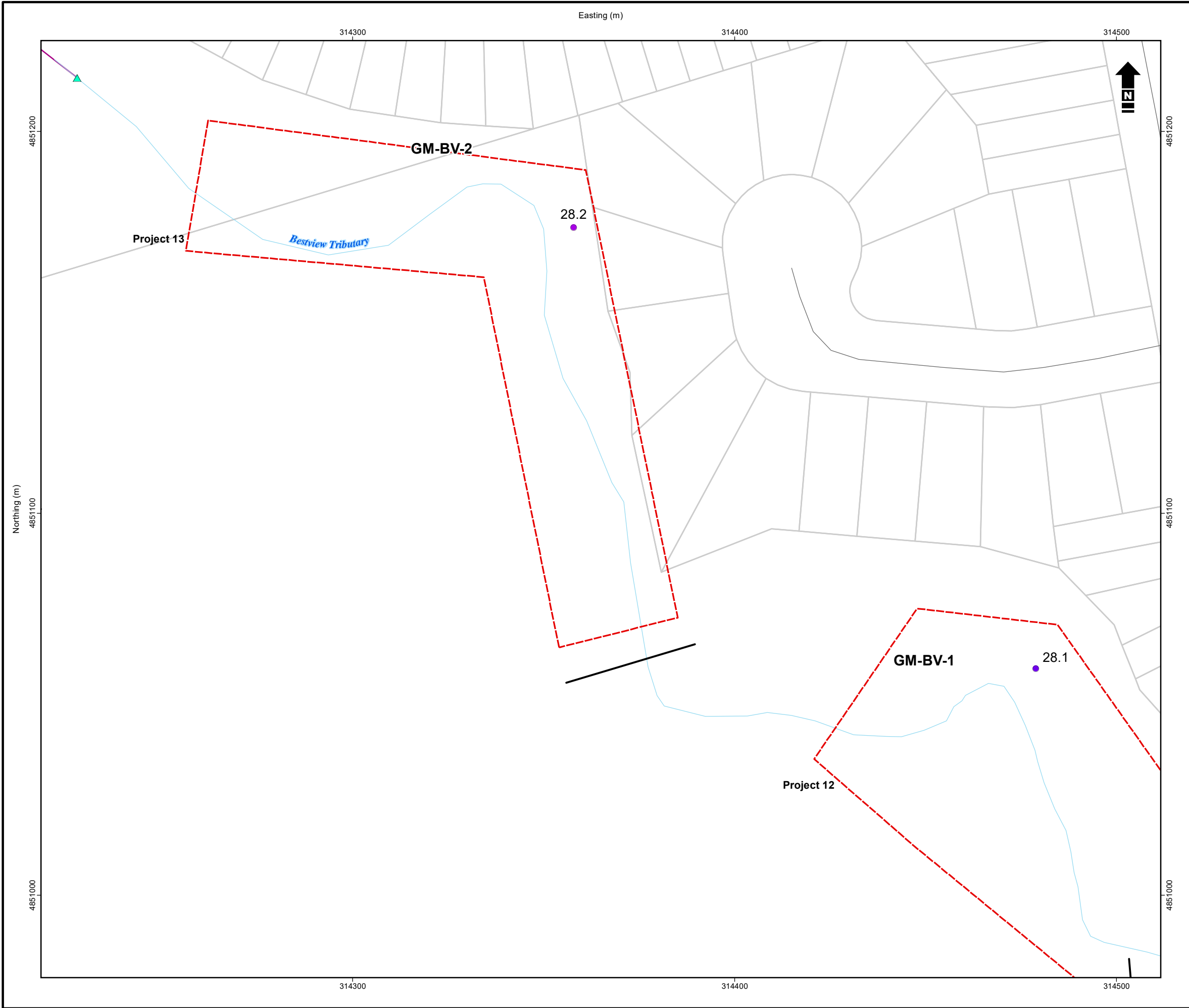
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Figure C11c

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Property Boundary

Reach Break

Watercourse

Centerline (2018)

Storm Sewer

Stormwater Outfall

Local Project Rank

- 28.1
- 28.2

Steeles Avenue East

Bayview Avenue

Leaside Street

Duncan Woods Creek

Don River East Branch

German Mills Creek

Disclaimer: Watermain and sewers have been clipped to the Focused Study Area.

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1:1,000

metres

10 0 10 20

NAD27 MTM zone 10

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City of Toronto

German Mills Creek GSMP EA

Erosion Risk Projects

Bestview Tributary

Date:	June 2022	Project:	32227	Submitter:	N. Cyples	Reviewer:	R. Phillips
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Figure C11e

APPENDIX C12

Erosion Risk Site Listing

TABLE C12 Erosion Risk Site Listing

Site ID	Reach	Risk	Risk Type	Reference Elevation	Distance to Structure (m)	Erosion/Scour Rate (m/yr)	Time to Exposure, TTE (Years)	Erosion Credit (Years)	TTE with Credit (Years)	Risk Probability Score	Risk Severity Score	Final Risk Score	Site Rank	Local Project Rank
16.1	GM-3	Maintenance Hole	Lateral		0	0.5	0	0	0	5	5	25	1	1
16.5	GM-3	Pipe Coming from Maintenance Hole - exposed on north	Lateral		0	0.5	0	0	0	5	5	25	2	1
18.1	GM-3	Maintenance Hole	Lateral		0	0.5	0	0	0	5	5	25	3	2
21.1	GM-3	Maintenance Hole	Lateral		0	0.5	0	0	0	5	5	25	4	3
5.2	GM-1	Pipe Adjacent	Lateral and Vertical		1	0.6	2	0	2	4	5	20	5	4
7.1	GM-2	Pipe Adjacent	Lateral and Vertical		1	0.6	2	0	2	4	5	20	6	5
11.1	GM-2	Maintenance Hole	Lateral		1	0.3	3	0	3	4	5	20	7	6
7.2	GM-2	Pathway	Lateral		3	0.6	5	0	5	4	5	20	8	5
16.3	GM-3	Pipe on south side of exposed maintenance hole	Vertical	Max. Pool Depth	0.16	0.016	10	0	10	4	5	20	9	1
5.3	GM-1	Pathway	Lateral		7	0.6	12	0	12	4	5	20	10	4
16.4	GM-3	Maintenance Hole	Lateral		9	0.5	18	0	18	4	5	20	11	1
21.3	GM-3	Maintenance Hole	Lateral		9	0.5	18	0	18	4	5	20	12	3
21.6	GM-3	Lateral Pipe	Lateral		9	0.5	18	0	18	4	5	20	13	3
12.2	GM-2	Pipe Adjacent	Lateral		1	0.3	3	20	23	4	5	20	14	6
8.2	GM-2	Pipe Crossing	Vertical	Ex. Gr	0.37	0.016	23	0	23	3	5	15	15	7
1.1	GM-1	Maintenance Hole	Lateral		5	0.3	17	10	27	3	5	15	16	8
1.2	GM-1	Pipe Crossing	Vertical	Ex. Gr	0.48	0.016	30	0	30	3	5	15	17	8
6.1	GM-1	Maintenance Hole	Lateral		9	0.3	30	0	30	3	5	15	18	5
21.4	GM-3	Pipe Crossing (Watermain)	Vertical			0.016		30	30	3	5	15	19	3
5.1	GM-1	Maintenance Hole	Lateral		10	0.3	33	0	33	3	5	15	20	4
8.3	GM-2	Maintenance Hole	Lateral		8	0.2	40	0	40	3	5	15	21	7
12.3	GM-2	Maintenance Hole	Lateral		12	0.3	40	0	40	3	5	15	22	6
1.3	GM-1	Bridge	Lateral and Vertical		0	0.3	0	10	10	4	3	12	23	8
15.3	GM-2	Pedestrian Bridge	Lateral		0	0.5	0	10	10	4	3	12	24	1
9.1	GM-2	Pedestrian Bridge	Lateral		0.5	0.3	2	10	12	4	3	12	25	7
21.2	GM-3	Pipe Crossing	Vertical	Ex. Gr	0.92	0.016	58	0	58	2	5	10	26	3
8.4	GM-2	Maintenance Hole	Lateral		15	0.2	75	0	75	2	5	10	27	7
16.2	GM-3	Pipe Crossing	Vertical	Ex. Gr	1.2	0.016	75	0	75	2	5	10	28	1
3.1	GM-1	Pipe Crossing	Vertical	Ex. Gr	1.22	0.016	76	0	76	2	5	10	29	9
24.2	GM-4	Pipe Adjacent	Lateral		10	0.2	50	30	80	2	5	10	30	10
26.1	GM-4	Maintenance Hole	Lateral		4	0.2	20	60	80	2	5	10	31	11
27.3	GM-4	Maintenance Hole	Lateral		4	0.2	20	60	80	2	5	10	32	11
18.2	GM-3	Pipe Crossing	Vertical	Ex. Gr	1.3	0.016	81	0	81	2	5	10	33	2
25.1	GM-4	Maintenance Hole	Lateral		12	0.2	60	30	90	2	5	10	34	10
4.1	GM-1	Maintenance Hole	Lateral		19	0.2	95	0	95	2	5	10	35	9
21.5	GM-3	Lateral Pipe	Vertical	Ex. Gr	1.54	0.016	96	0	96	2	5	10	36	3
23.1	GM-4	Outfall	Lateral		0	0.2	0	30	30	3	3	9	37	10
27.2	GM-4	Outfall (CSP)	Lateral		1	0.2	5	20	25	3	3	9	38	11
13.1	GM-2	Outfall	Lateral		5	0.3	17	20	37	3	3	9	39	6

Site ID	Reach	Risk	Risk Type	Reference Elevation	Distance to Structure (m)	Erosion/Scour Rate (m/yr)	Time to Exposure, TTE (Years)	Erosion Credit (Years)	TTE with Credit (Years)	Risk Probability Score	Risk Severity Score	Final Risk Score	Site Rank	Local Project Rank
9.2	GM-2	Outfall	Lateral		10	0.3	33	0	33	3	3	9	40	7
8.1	GM-2	Outfall	Lateral		8	0.2	40	0	40	3	3	9	41	7
15.1	GM-2	Outfall	Lateral		0	0.5	0	40	40	3	3	9	42	1
27.1	GM-4	Outfall/Wingwall	Lateral		5	0.2	25	20	45	3	3	9	43	11
22.1	GM-4	Outfall	Lateral		0	0.2	0	50	50	3	3	9	44	10
20.1	GM-3	Pathway	Lateral		1.5	0.5	3	0	3	4	2	8	45	3
19.1	GM-3	Pathway	Lateral		1	0.5	2	20	22	4	2	8	46	2
2.1	GM-1	Pathway	Lateral		2	0.6	3	20	23	4	2	8	47	9
12.1	GM-2	Pathway	Lateral		1	0.3	3	20	23	4	2	8	48	6
26.2	GM-4	Pipe Crossing	Vertical	R. Gr.	3.28	0.016	205	30	235	1	5	5	49	11
24.1	GM-4	Pathway	Lateral		5	0.2	25	30	55	2	2	4	50	10
17.2	GM-3	Property	Lateral		22	0.5	44	0	44	2	1	2	51	1
17.1	GM-3	Property	Lateral		10	0.3	33	20	53	2	1	2	52	2
15.2	GM-2	Slope/Property	Lateral		10	0.5	20	40	60	2	1	2	53	1
26.3	GM-4	Rocky Ribs	Vertical/Lateral		N/A	N/A	N/A	N/A	N/A	1	2	2	54	11
28.1	GM-BV-1	Property	Lateral		20	0.2	100	0	100	1	1	1	55	12
28.2	GM-BV-2	Property	Lateral		10	0.2	50	50	100	1	1	1	56	13