APPENDIX 'A'

Additional Completed Site Investigations
and
Supporting Mike Flood Technical Information

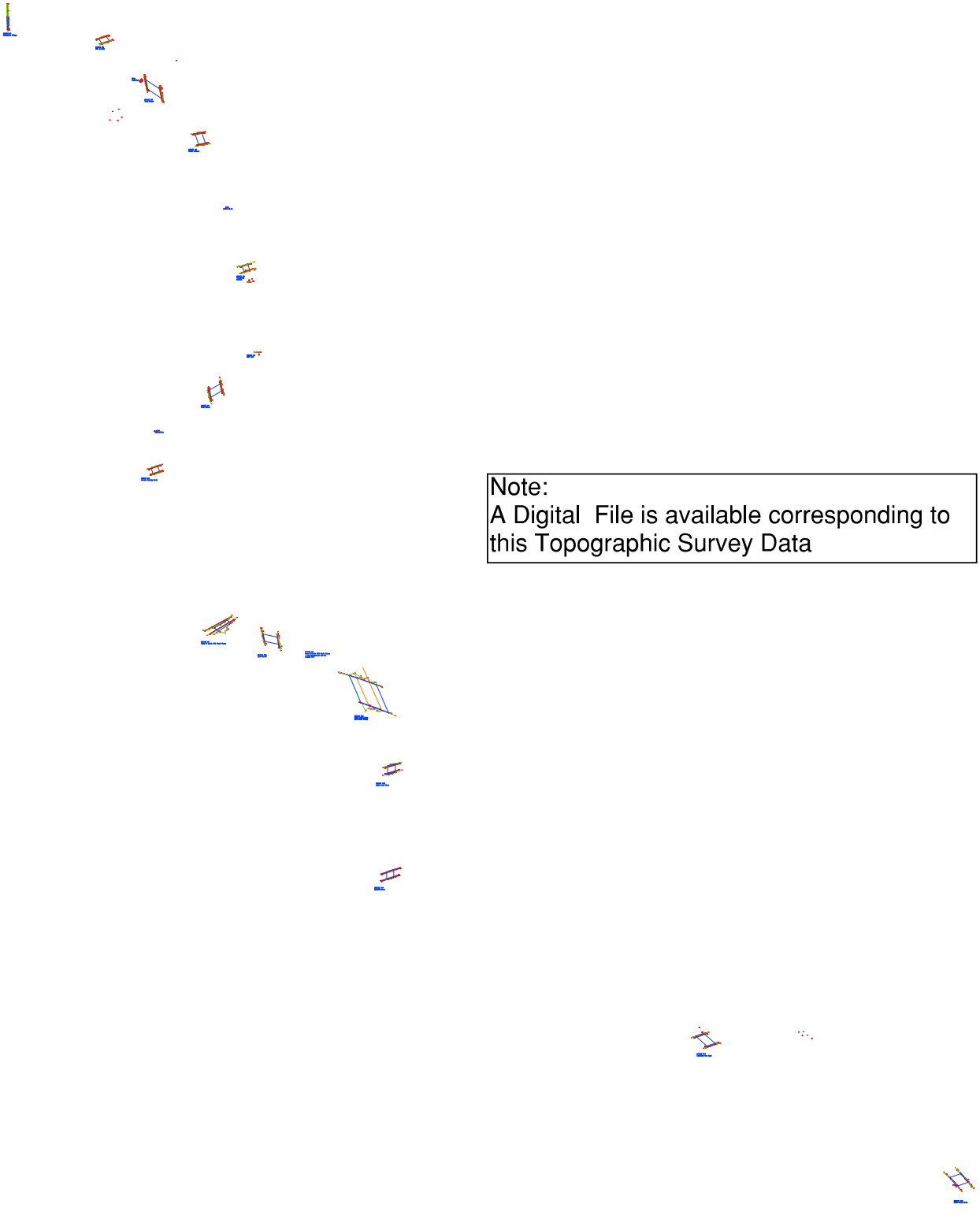
Floodplain Mapping in Jane and Wilson Special Policy Area, Black Creek
Toronto and Region Conservation Authority

Appendix 'A' Contents:

Additional Completed Site Investigations

Supporting Mike Flood Technical Information

Topographic Survey - Hydraulic Structures
Jane - Wilson 2D Flood Modelling Study



Note:
A Digital File is available corresponding to this Topographic Survey Data

HYDRAULIC STRUCTURE INVENTORY SHEET (C1)

Watershed and Location Information	Structure Configuration and Dimensions		Current Flow Information
Date : June 23, 2015	Structure Type : Concrete Bridge		Flow Present (Y/N): Y
Field Crew: Calder and Valdor Engineering Inc Staffs	No. of Openings/Culverts: 1	Footing: Open Bottom with Abutments	Approx. Depth (m):
Watershed Name: Humber	Materials: Concrete Walkway, Concrete Beams to support Walkway		Approximate Velocity(m/s):
Subcatchment Area No.:	Opening Height between 0.5m to 3.25 m; Width varies between 10.23 m to 24.71		Upstream Erosion (Y/N):
Tributary Name: Black Creek	Pier Dimension:		Downstream Erosion (Y/N):
Floodplain Map Sheet No.: 9	Length: 2.2m	Total bridge span: 24.7 m	Additional Flow Information:
Cross-section Range:	Road Deck: Concrete walkway surface elevation varies in both (x & y) directions between the highest 128.23 m to the lowest 128.187 m		
Municipality: City of Toronto			
Location: Black Creek West of Jane and North of Wilson. Access from North to Sheridan Mall Parking area	Low chord/obvert: Elevation varies between 126.88 m to 126.89 m		
	Invert: Elevations on the irregular natural channel vary across and along the bridge section from the lowest 123.63 m to the highest 125.84 m		

Additional Field Notes:

Site Sketch:

Upstream of Concrete Foot Bridge

Downstream of Concrete Foot Bridge

Description of Photograph:

HYDRAULIC STRUCTURE INVENTORY SHEET (C2)

Watershed and Location Information	Structure Configuration and Dimensions		Current Flow Information
Date : June 23, 2015	Structure Type : Concrete Bridge		Flow Present (Y/N): Y
Field Crew: Calder and Valdor Engineering Inc Staffs	No. of Openings/Culverts: 1	Footing: Open Bottom with Abutments	Approx. Depth (m):
Watershed Name: Humber	Materials: Concrete Abutment, Concrete Road Deck, Concrete Beams to support deck		Approximate Velocity(m/s):
Subcatchment Area No.:	Opening Height 3.78 m (maximum); Perp. Width varies from 4.58 m to 15.43 m		Upstream Erosion (Y/N):
Tributary Name: Black Creek	Pier Dimension:		Downstream Erosion (Y/N):
Floodplain Map Sheet No.: 9	Length: 13.5 m	Total bridge span: 15.4 m	Additional Flow Information:
Cross-section Range:	Road Deck: Concrete deck surface elevation varies in both (x & y) directions between the highest 127.99 m to the lowest 127.89 m		
Municipality: City of Toronto			
Location: Black Creek West of Jane and North of Wilson. Access from Jane to Sheridan Mall.	Low chord/obvert: Elevation varies between 126.74 m to 126.98 m		
	Invert: Elevations on the concrete lined channel vary across and along the bridge section having a u/s inv. of 122.97 m; d/s inv. of 123.19 m		

Additional Field Notes:

Site Sketch:

Upstream of Private Concrete Driveway Bridge

Downstream of Private Concrete Driveway Bridge

Description of Photograph:

HYDRAULIC STRUCTURE INVENTORY SHEET (C3)

Watershed and Location Information	Structure Configuration and Dimensions		Current Flow Information
Date : June 23, 2015	Structure Type : Concrete Bridge		Flow Present (Y/N): Y
Field Crew: Calder and Valdor Engineering Inc Staffs	No. of Openings/Culverts: 1	Footing: Open Bottom with Abutments	Approx. Depth (m):
Watershed Name: Humber	Materials: Concrete Abutment, Concrete Road Deck, Steel Beams to support deck		Approximate Velocity(m/s):
Subcatchment Area No.:	Opening Height 2.23 m (maximum); Perp. Width varies from 3.01 m to 13.39 m		Upstream Erosion (Y/N):
Tributary Name: Black Creek	Pier Dimension:		Downstream Erosion (Y/N):
Floodplain Map Sheet No.: 9	Length: 37.99 m	Total bridge span: 13.4 m	Additional Flow Information:
Cross-section Range:	Road Deck: Concrete deck surface elevation varies in both (x & y) directions between the highest 126.68 m to the lowest 125.70 m		
Municipality: City of Toronto			
Location: Black Creek at Jane, North of Wilson Avenue. East of Sheridan Mall	Low chord/obvert: Elevation varies between 124.02 m to 124.35 m		
	Invert: Elevations on the concrete lined channel vary across and along the bridge section having a u/s inv. of 121.88 m to 122.28 m; d/s inv. of 121.59 m		

Additional Field Notes:

Site Sketch:

Upstream of Jane St. Bridge

Downstream of Jane St. Bridge

Description of Photograph:

HYDRAULIC STRUCTURE INVENTORY SHEET (C4)

Watershed and Location Information	Structure Configuration and Dimensions		Current Flow Information
Date : June 23, 2015	Structure Type : Concrete Bridge		Flow Present (Y/N): Y
Field Crew: Calder and Valdor Engineering Inc Staffs	No. of Openings/Culverts: 1	Footing: Open Bottom with Abutments	Approx. Depth (m):
Watershed Name: Humber	Materials: Concrete Abutment, Concrete Road Deck, Steel Beams to support deck		Approximate Velocity(m/s):
Subcatchment Area No.:	Opening Height 3.48 m (maximum); Width varies between 3.43 m to 13.96 m		Upstream Erosion (Y/N):
Tributary Name: Black Creek	Pier Dimension:		Downstream Erosion (Y/N):
Floodplain Map Sheet No.: 9	Length: 24.71 m	Total bridge span: 14.0 m	Additional Flow Information:
Cross-section Range:	Road Deck: Concrete deck surface elevation varies in both (x & y) directions between the highest 127.08 m to the lowest 126.06 m		
Municipality: City of Toronto			
Location: Black Creek at Wilson Avenue, East of Jane.	Low chord/obvert: Elevation varies between 124.82 m to 124.96 m		
	Invert: Elevations on the concrete lined channel vary across and along the bridge section having a u/s inv. of 121.34 m; d/s inv. of 121.38 m		

Additional Field Notes:

Site Sketch:

Upstream of Wilson Ave. Bridge

Downstream of Wilson Ave. Bridge

Description of Photograph:

HYDRAULIC STRUCTURE INVENTORY SHEET (C5)

Watershed and Location Information	Structure Configuration and Dimensions		Current Flow Information
Date : June 23, 2015	Structure Type : Concrete Bridge		Flow Present (Y/N): Y
Field Crew: Calder and Valdor Engineering Inc Staffs	No. of Openings/Culverts: 1	Footing: Open Bottom with Abutments	Approx. Depth (m):
Watershed Name: Humber	Materials: Concrete Abutment, Concrete Road Deck		Approximate Velocity(m/s):
Subcatchment Area No.:	Opening Height 3.71 m (maximum); Width varies between 3.00 m to 12.06 m		Upstream Erosion (Y/N):
Tributary Name: Black Creek	Pier Dimension:		Downstream Erosion (Y/N):
Floodplain Map Sheet No.: 9	Length: 13.3 m	Total bridge span: 12.1 m	Additional Flow Information:
Cross-section Range:	Road Deck: Concrete deck surface elevation varies in both (x & y) directions between the highest 126.17 m to the lowest 125.49 m		
Municipality: City of Toronto			
Location: Black Creek at Downsview, East of Jane and North of Hwy 401.	Low chord/obvert: Elevation varies between 124.14 m to 124.91 m		
	Invert: Elevations on the concrete lined channel vary across and along the bridge section having a u/s inv. of 121.21 m; d/s inv. of 121.23 m		

Additional Field Notes:

Site Sketch:

Upstream of Downsview Ave. Concrete Bridge

Downstream of Downsview Ave. Concrete Bridge

Description of Photograph:

HYDRAULIC STRUCTURE INVENTORY SHEET (C6)

Watershed and Location Information	Structure Configuration and Dimensions		Current Flow Information
Date : June 23, 2015	Structure Type : Concrete Culvert		Flow Present (Y/N): Y
Field Crew: Calder and Valdor Engineering Inc Staffs	No. of Openings/Culverts: 1	Footing: Open Bottom with Footings	Approx. Depth (m):
Watershed Name: Humber	Materials: Concrete Arch		Approximate Velocity(m/s):
Subcatchment Area No.:	Opening Height 7.02 m (maximum); Width of Arch equals 12.18 m (maximum)		Upstream Erosion (Y/N):
Tributary Name: Black Creek	Pier Dimension:		Downstream Erosion (Y/N):
Floodplain Map Sheet No.: 9	Length: 130.16 m	Total bridge span:	Additional Flow Information:
Cross-section Range:	Road Deck: Concrete deck surface elevation varies in both (x & y) directions between the highest 132.15 m to the lowest 131.30 m		
Municipality: City of Toronto			
Location: Black Creek at Hwy 401 Crossing, East of Jane.	Low chord/obvert:		
	Invert: Elevations on the concrete lined channel vary across and along the bridge section having a u/s inv. of 120.69 m; d/s inv. of 120.96 m		

Additional Field Notes:

Site Sketch:

Upstream of Hwy 401 Culvert

Downstream of Hwy 401 Culvert

Description of Photograph:

HYDRAULIC STRUCTURE INVENTORY SHEET (C7)

Watershed and Location Information	Structure Configuration and Dimensions		Current Flow Information
Date : June 23, 2015	Structure Type : Concrete Bridge		Flow Present (Y/N): Y
Field Crew: Calder and Valdor Engineering Inc Staffs	No. of Openings/Culverts: 1	Footing: Open Bottom with Abutments	Approx. Depth (m):
Watershed Name: Humber	Materials: Concrete Abutment, Concrete Road Deck, Steel Beams to support deck		Approximate Velocity(m/s):
Subcatchment Area No.:	Opening Height equals 2.47 m; Perp. Width varies between 5.19 m to 13.89 m		Upstream Erosion (Y/N):
Tributary Name: Black Creek	Pier Dimension:		Downstream Erosion (Y/N):
Floodplain Map Sheet No.: 8	Length: 30.3 m	Total bridge span: 13.9 m	Additional Flow Information:
Cross-section Range:	Road Deck: Concrete deck surface elevation varies in both (x & y) directions between the highest 125.63 m to the lowest 124.70 m		
Municipality: City of Toronto			
Location: Black Creek at Jane, South of Hwy 401 Expressway.	Low chord/obvert: Elevation varies between 123.41 m to 123.45 m		
	Invert: Elevations on the concrete lined channel vary across and along the bridge section having a u/s inv. of 120.94 m; d/s inv. of 120.87 m		

Additional Field Notes:

Site Sketch:

Upstream of Jane St. Bridge

Downstream of Jane St. Bridge

Description of Photograph:

HYDRAULIC STRUCTURE INVENTORY SHEET (C8)

Watershed and Location Information	Structure Configuration and Dimensions		Current Flow Information
Date : June 23, 2015	Structure Type : Concrete Bridge		Flow Present (Y/N): Y
Field Crew: Calder and Valdor Engineering Inc Staffs	No. of Openings/Culverts: 1	Footing: Open Bottom with Abutments	Approx. Depth (m):
Watershed Name: Humber	Materials: Concrete Abutment, Concrete Road Deck		Approximate Velocity(m/s):
Subcatchment Area No.:	Opening Height 3.53 m (maximum); Width varies between 2.11 m to 13.98 m		Upstream Erosion (Y/N):
Tributary Name: Black Creek	Pier Dimension:		Downstream Erosion (Y/N):
Floodplain Map Sheet No.: 8	Length: 13.4 m	Total bridge span: 14.0 m	Additional Flow Information:
Cross-section Range:	Road Deck: Concrete deck surface elevation varies in both (x & y) directions between the highest 124.69 m to the lowest 124.44 m		
Municipality: City of Toronto			
Location: Black Creek at Gordon Mackay Road, West of Jane.	Low chord/obvert: Elevation varies between 123.39 m to 123.84 m		
	Invert: Elevations on the concrete lined channel vary across and along the bridge section having a u/s inv. of 120.31 m; d/s inv. of 120.29 m		

Additional Field Notes:

Site Sketch:

Upstream of McKay St. Bridge

Downstream of McKay St. Bridge

Description of Photograph:

HYDRAULIC STRUCTURE INVENTORY SHEET (C9)

Watershed and Location Information	Structure Configuration and Dimensions		Current Flow Information
Date : June 23, 2015	Structure Type : Concrete Bridge		Flow Present (Y/N): Y
Field Crew: Calder and Valdor Engineering Inc Staffs	No. of Openings/Culverts: 1	Footing: Open Bottom with Abutments	Approx. Depth (m):
Watershed Name: Humber	Materials: Concrete Abutment, Concrete Road Deck, Steel Beams to support deck		Approximate Velocity(m/s):
Subcatchment Area No.:	Opening Height 4.18 m (maximum); Perp. Width varies from 3.39 m to 27.56 m		Upstream Erosion (Y/N):
Tributary Name: Black Creek	Pier Dimension:		Downstream Erosion (Y/N):
Floodplain Map Sheet No.: 8	Length: 10.7 m	Total bridge span: 27.6 m	Additional Flow Information:
Cross-section Range:	Road Deck: Concrete deck surface elevation varies in both (x & y) directions between the highest 128.18 m to the lowest 125.61 m		
Municipality: City of Toronto			
Location: Black Creek at Jane Street South to Hwy 400 North Ramp.	Low chord/obvert: Elevation varies between 123.53 m to 124.91 m		
	Invert: Elevations on the concrete lined channel vary across and along the bridge section having a u/s inv. of 119.36 m; d/s inv. of 119.72 m		

Additional Field Notes:

Site Sketch:

Upstream of Hwy 400-WestDir Ramp Bridge

Downstream of Hwy 400-WestDir Ramp Bridge

Description of Photograph:

HYDRAULIC STRUCTURE INVENTORY SHEET (C10)

Watershed and Location Information	Structure Configuration and Dimensions		Current Flow Information
Date : June 23, 2015	Structure Type : Concrete Bridge		Flow Present (Y/N): Y
Field Crew: Calder and Valdor Engineering Inc Staffs	No. of Openings/Culverts: 1	Footing: Open Bottom with Abutments	Approx. Depth (m):
Watershed Name: Humber	Materials: Concrete Abutment, Concrete Road Deck, Steel Beams to support deck		Approximate Velocity(m/s):
Subcatchment Area No.:	Opening Height 3.11 m (maximum); Perp. Width varies from 5.23 m to 13.54 m		Upstream Erosion (Y/N):
Tributary Name: Black Creek	Pier Dimension:		Downstream Erosion (Y/N):
Floodplain Map Sheet No.: 8	Length: 32.3 m	Total bridge span: 13.5 m	Additional Flow Information:
Cross-section Range:	Road Deck: Concrete deck surface elevation varies in both (x & y) directions between the highest 124.20 m to the lowest 123.11 m		
Municipality: City of Toronto			
Location: Black Creek at Jane, North of Highway 400.	Low chord/obvert: Elevation varies between 121.80 m to 121.92 m		
	Invert: Elevations on the concrete lined channel vary across and along the bridge section having a u/s inv. of 118.70 m; d/s inv. of 119.14 m		

Additional Field Notes:

Site Sketch:

Upstream of Jane St. Bridge

Downstream of Jane St. Bridge

Description of Photograph:

HYDRAULIC STRUCTURE INVENTORY SHEET (C12)

Watershed and Location Information	Structure Configuration and Dimensions		Current Flow Information
Date : June 23, 2015	Structure Type : Concrete Bridge		Flow Present (Y/N): Y
Field Crew: Calder and Valdor Engineering Inc Staffs	No. of Openings/Culverts: 1	Footing: Open Bot. with Concrete Pier	Approx. Depth (m):
Watershed Name: Humber	Materials: Concrete Pier, Concrete Road Deck, Steel Beams to support deck		Approximate Velocity(m/s):
Subcatchment Area No.:	Opening Height 9.43 m (maximum); Perp. Width varies from 6.03 m to 41.33 m		Upstream Erosion (Y/N):
Tributary Name: Black Creek	Pier Dimension: Pier width 0.6 m		Downstream Erosion (Y/N):
Floodplain Map Sheet No.: 8	Length: 60.9 m	Total bridge span (including pier's width): 42.5 m	Additional Flow Information:
Cross-section Range:	Road Deck: Concrete deck surface elevation varies in both (x & y) directions between the highest 131.25 m to the lowest 129.47 m		
Municipality: City of Toronto			
Location: Black Creek at Jane Street North to Black Creek South Ramp.	Low chord/obvert: Elevation varies between 127.41 m to 128.79 m		
	Invert: Elevations on the concrete lined channel vary across and along the bridge section having a u/s inv. of 118.00 m to 118.59 m; d/s inv. of 117.95 m to 118.75 m		

Additional Field Notes:

Site Sketch:

Upstream of Hwy 400 Bridge

Downstream of Hwy 400 Bridge

Description of Photograph:

HYDRAULIC STRUCTURE INVENTORY SHEET (C13)

Watershed and Location Information	Structure Configuration and Dimensions		Current Flow Information
Date : June 23, 2015	Structure Type : Concrete Bridge		Flow Present (Y/N): Y
Field Crew: Calder and Valdor Engineering Inc Staffs	No. of Openings/Culverts: 1	Footing: Open Bottom with Abutments	Approx. Depth (m):
Watershed Name: Humber	Materials: Concrete Abutment, Concrete Road Deck, Steel Beams to support deck		Approximate Velocity(m/s):
Subcatchment Area No.:	Opening Height 2.87 m (maximum); Perp. Width varies from 4.48 m to 15.19 m		Upstream Erosion (Y/N):
Tributary Name: Black Creek	Pier Dimension:		Downstream Erosion (Y/N):
Floodplain Map Sheet No.: 8	Length: 17 m	Total bridge span: 15.2 m	Additional Flow Information:
Cross-section Range:	Road Deck: Concrete deck surface elevation varies in both (x & y) directions between the highest 124.99 m to the lowest 122.73 m		
Municipality: City of Toronto			
Location: Black Creek at Maple Leaf Drive Crossing East of Jane Street.	Low chord/obvert: Elevation varies between 120.99 m to 122.41 m		
	Invert: Elevations on the concrete lined channel vary across and along the bridge section having a u/s inv. of 118.12 m; d/s inv. of 118.13 m		

Additional Field Notes:

Site Sketch:

Upstream of Maple Leaf Dr. Bridge

Downstream of Maple Leaf Dr. Bridge

Description of Photograph:

HYDRAULIC STRUCTURE INVENTORY SHEET (C14)

Watershed and Location Information	Structure Configuration and Dimensions		Current Flow Information
Date : June 23, 2015	Structure Type : Concrete Bridge		Flow Present (Y/N): Y
Field Crew: Calder and Valdor Engineering Inc Staffs	No. of Openings/Culverts: 1	Footing: Open Bottom with Abutments	Approx. Depth (m):
Watershed Name: Humber	Materials: Concrete Abutment, Concrete Road Deck, Steel Beams to support deck		Approximate Velocity(m/s):
Subcatchment Area No.:	Opening Height equals 2.85 m (maximum); Width varies from 4.91 m to 15.11 m		Upstream Erosion (Y/N):
Tributary Name: Black Creek	Pier Dimension:		Downstream Erosion (Y/N):
Floodplain Map Sheet No.: 8	Length: 15.5 m	Total bridge span: 15.1 m	Additional Flow Information:
Cross-section Range:	Road Deck: Concrete deck surface elevation varies in both (x & y) directions between the highest 123.14 m to the lowest 122.12 m		
Municipality: City of Toronto			
Location: Black Creek at Queen's Drive Crossing East of Jane Street.	Low chord/obvert: Elevation varies between 120.50 m to 120.59 m		
	Invert: Elevations on the concrete lined channel vary across and along the bridge section having a u/s inv. of 117.65 m; d/s inv. of 117.36 m		

Additional Field Notes:

Site Sketch:

Upstream of Queen's Dr. Bridge

Downstream of Queen's Dr. Bridge

Description of Photograph:

HYDRAULIC STRUCTURE INVENTORY SHEET (C15)

Watershed and Location Information	Structure Configuration and Dimensions		Current Flow Information
Date : June 23, 2015	Structure Type : Concrete Bridge		Flow Present (Y/N): Y
Field Crew: Calder and Valdor Engineering Inc Staffs	No. of Openings/Culverts: 1	Footing: Open Bottom with Abutments	Approx. Depth (m):
Watershed Name: Humber	Materials: Concrete Abutment, Concrete Road Deck, Concrete Beams to support deck		Approximate Velocity(m/s):
Subcatchment Area No.:	Opening Height 4.69 m (maximum); Perp. Width varies from 4.68 m to 16.54 m		Upstream Erosion (Y/N):
Tributary Name: Black Creek	Pier Dimension:		Downstream Erosion (Y/N):
Floodplain Map Sheet No.: 8	Length: 31.5 m	Total bridge span: 14.5 m	Additional Flow Information:
Cross-section Range:	Road Deck: Concrete deck surface elevation varies in both (x & y) directions between the highest 121.71 m to the lowest 119.87 m		
Municipality: City of Toronto			
Location: Black Creek at Lawrence Avenue Crossing West of Black Creek Drive.	Low chord/obvert: Elevation varies between 118.92 m to 119.56 m		
	Invert: Elevations on the concrete lined channel vary across and along the bridge section having a u/s inv. of 114.24 m; d/s inv. of 114.09 m		

Additional Field Notes:

Site Sketch:

Upstream of Lawrence Ave West Bridge

Downstream of Lawrence Ave West Bridge

Description of Photograph:

HYDRAULIC STRUCTURE INVENTORY SHEET (C16)

Watershed and Location Information	Structure Configuration and Dimensions		Current Flow Information
Date : June 23, 2015	Structure Type : Concrete Bridge		Flow Present (Y/N): Y
Field Crew: Calder and Valdor Engineering Inc Staffs	No. of Openings/Culverts: 1	Footing: Open Bottom with Abutments	Approx. Depth (m):
Watershed Name: Humber	Materials: Concrete Abutment, Concrete Road Deck, Concrete Beams to support deck		Approximate Velocity(m/s):
Subcatchment Area No.:	Opening Height 3.99 m (maximum); Width varies from 8.90 m to 22.87 m		Upstream Erosion (Y/N):
Tributary Name: Black Creek	Pier Dimension:		Downstream Erosion (Y/N):
Floodplain Map Sheet No.: 7	Length: 23.5 m	Total bridge span: 22.9 m	Additional Flow Information:
Cross-section Range:	Road Deck: Concrete deck surface elevation varies in both (x & y) directions between the highest 117.92 m to the lowest 116.90 m		
Municipality: City of Toronto			
Location: Black Creek at Black Creek Drive Crossing South of Lawrence.	Low chord/obvert: Elevation varies between 115.28 m to 115.36 m		
	Invert: Elevations on the concrete lined channel vary across and along the bridge section having a u/s inv. of 111.29 m; d/s inv. of 111.26 m		

Additional Field Notes:

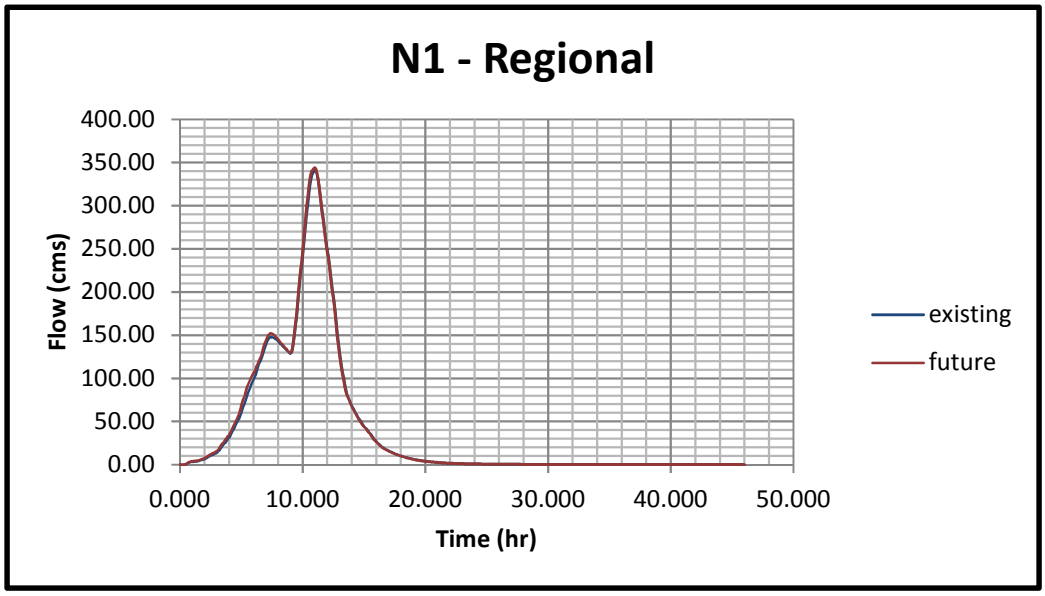
Site Sketch:

Upstream of Black Creek Drive Bridge

Downstream of Black Creek Drive Bridge

Description of Photograph:

Figure A.1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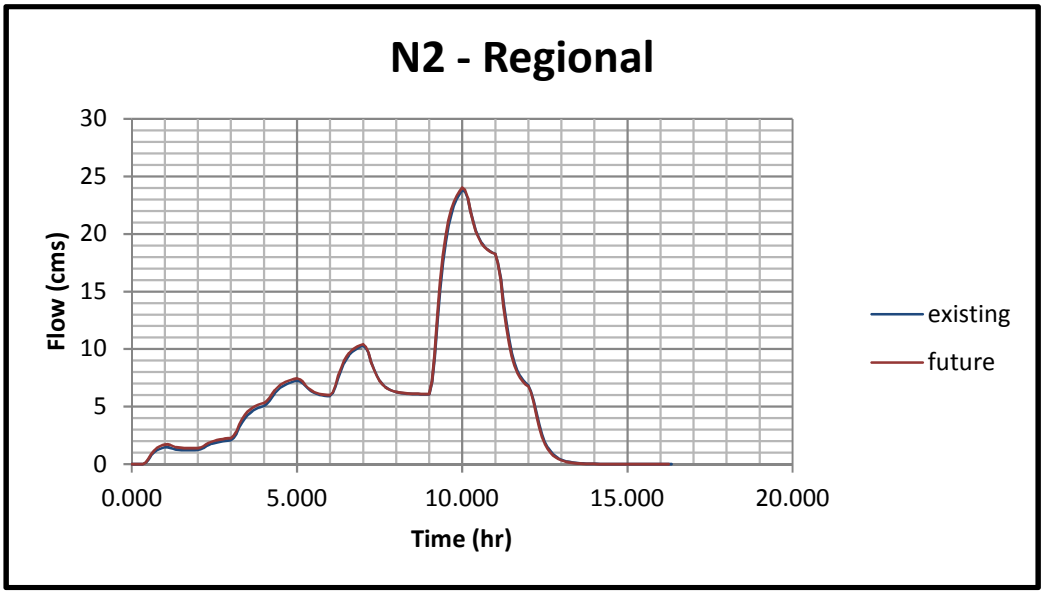
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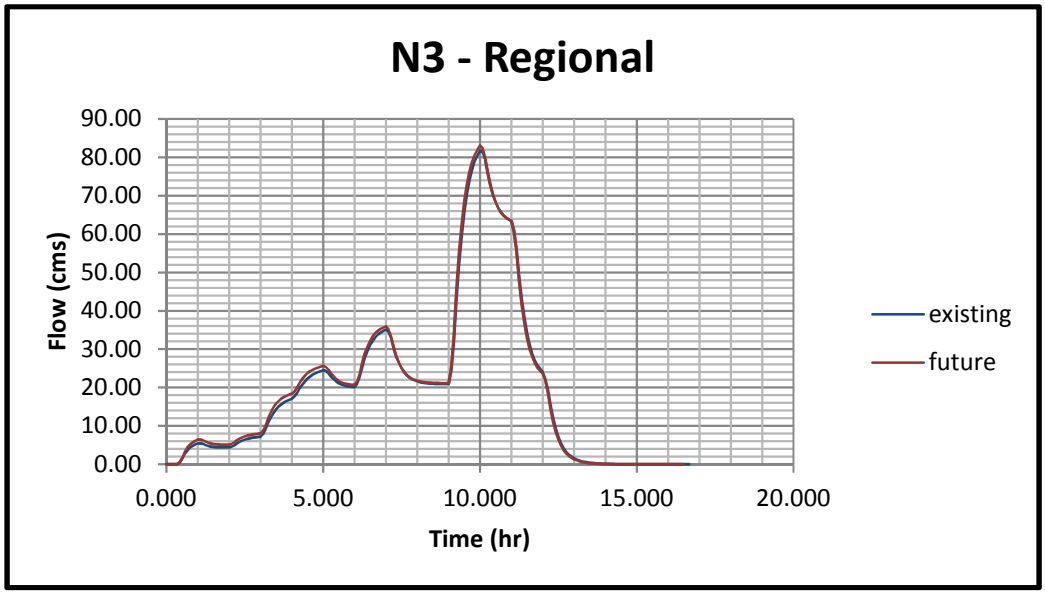
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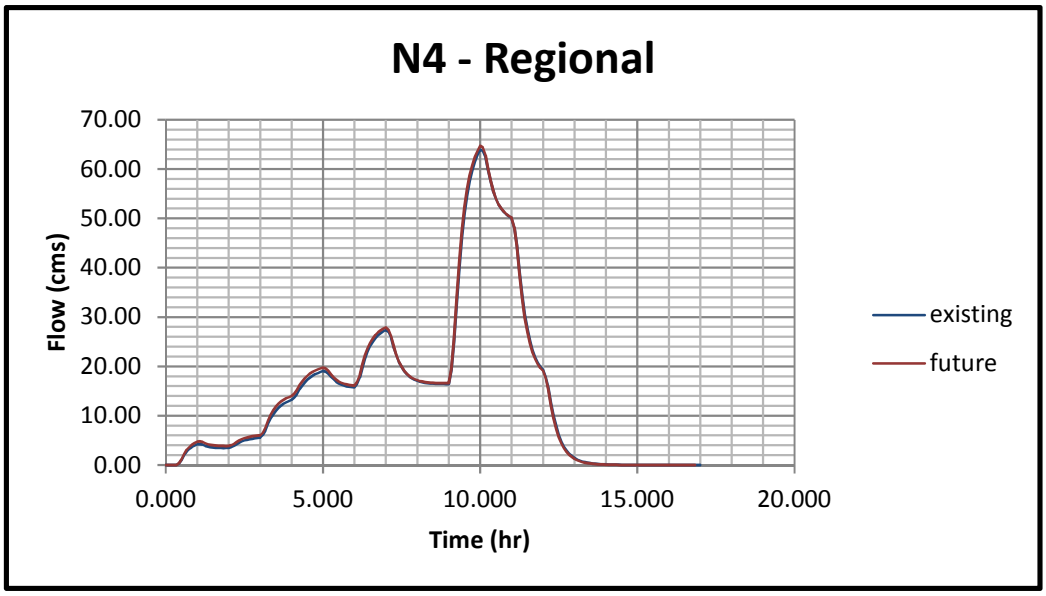

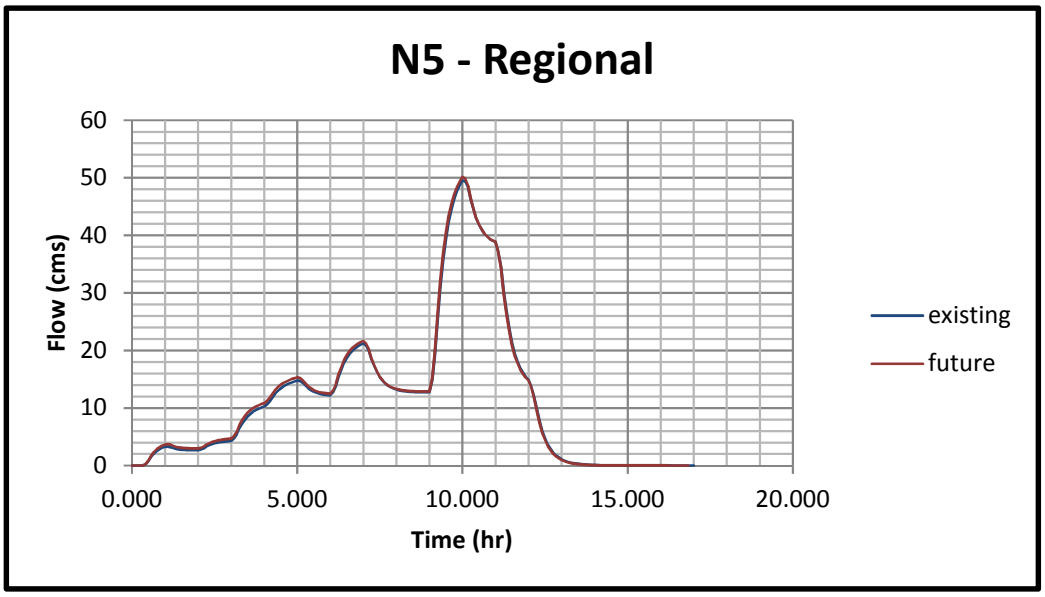

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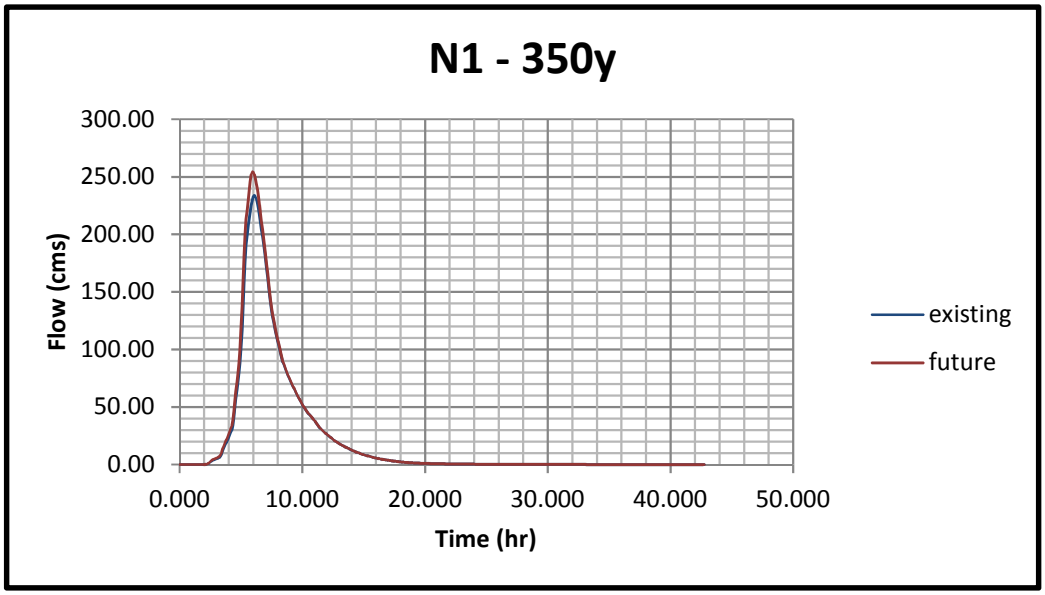
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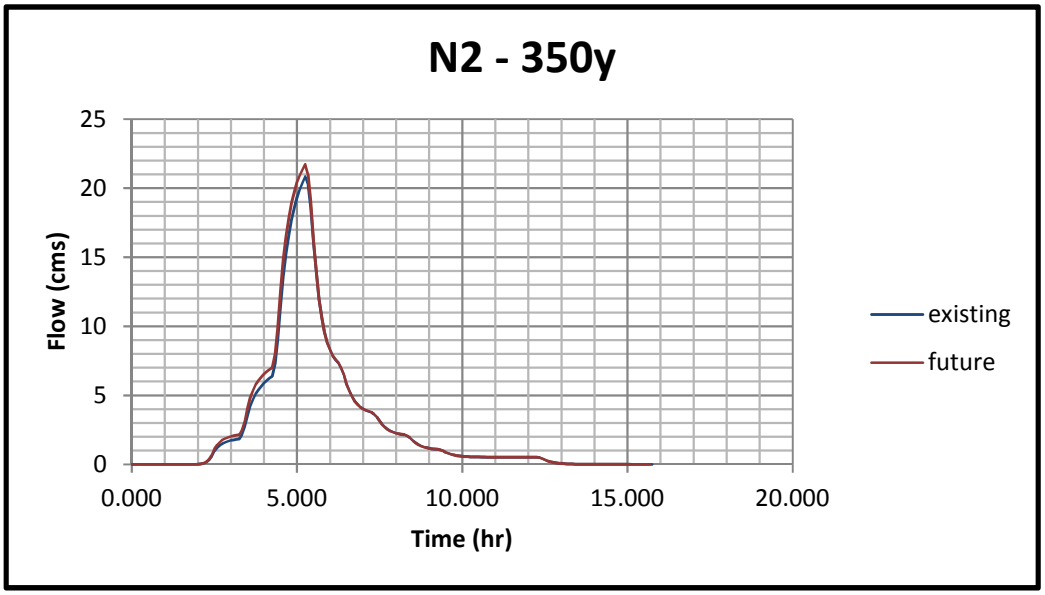
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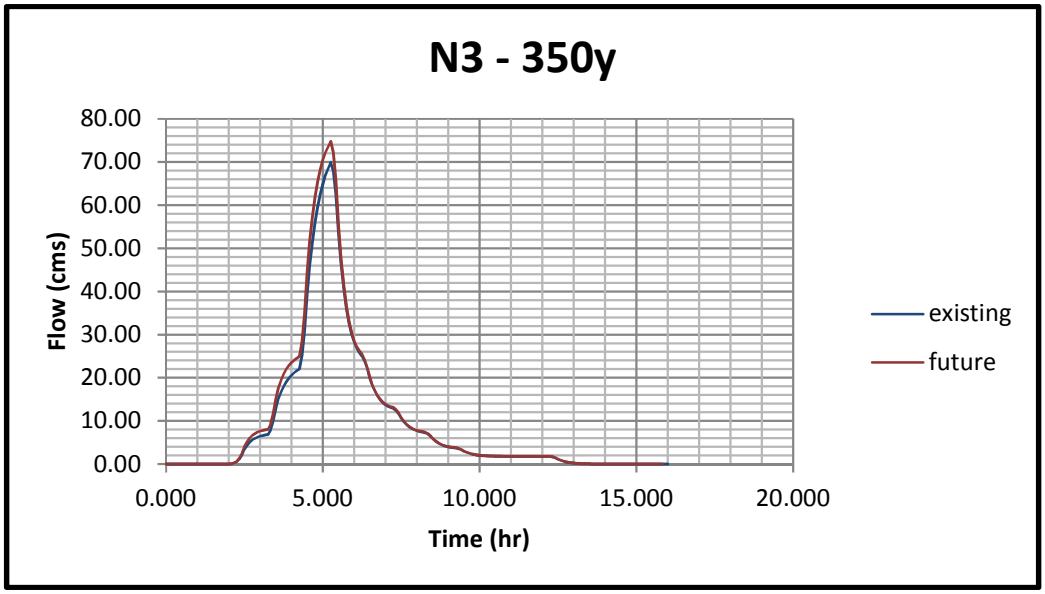
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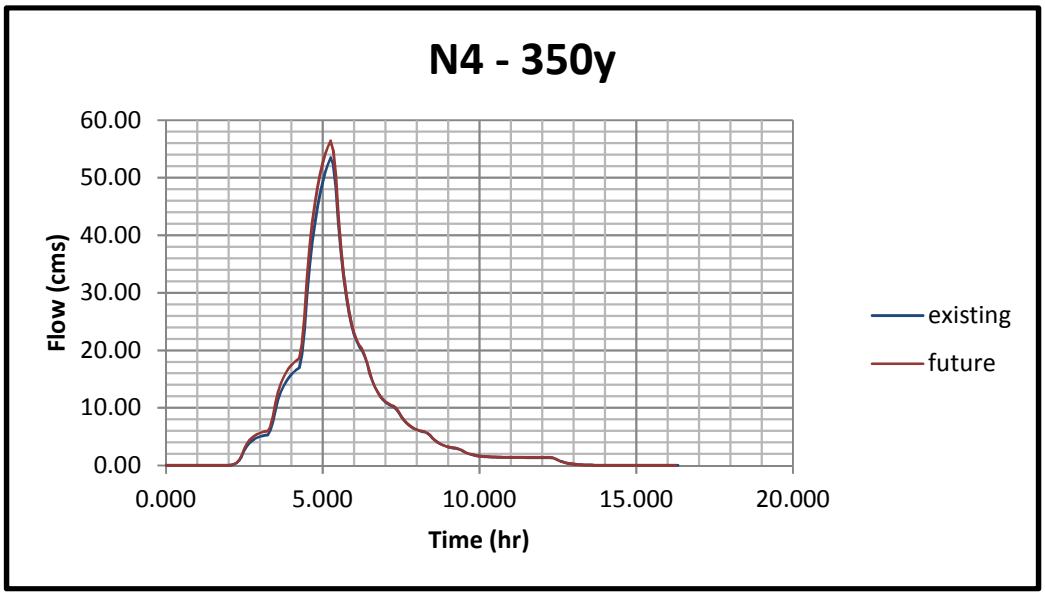
Time (hr)
existing
future

Figure A.2 (Cont'd.)



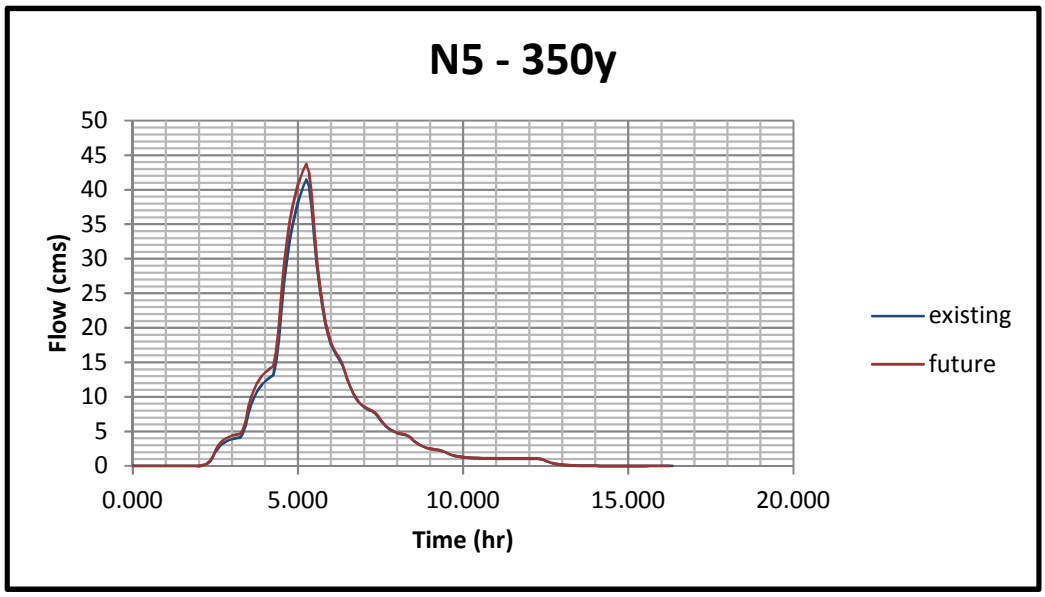
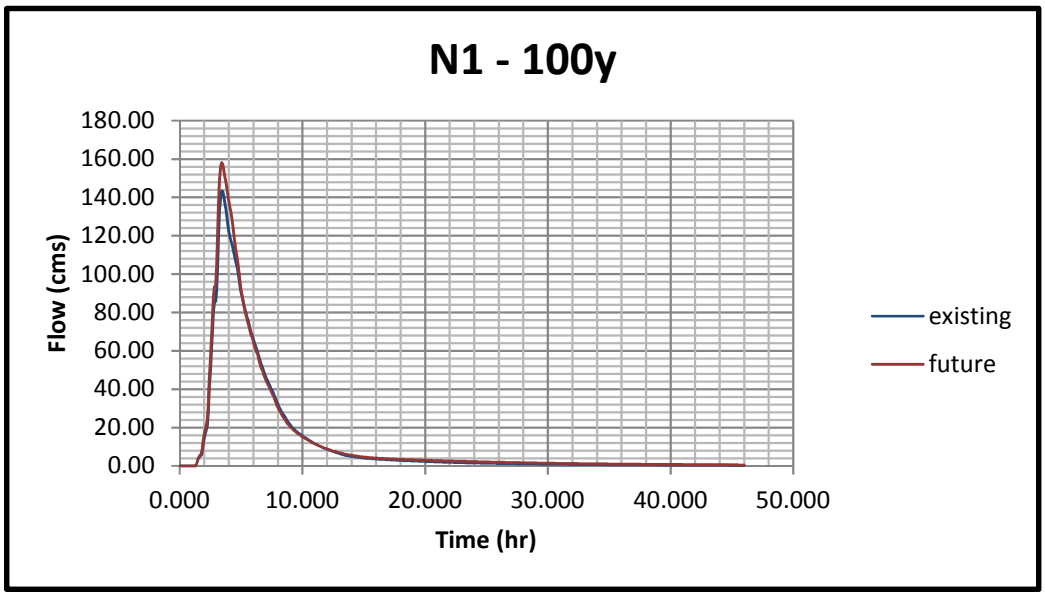
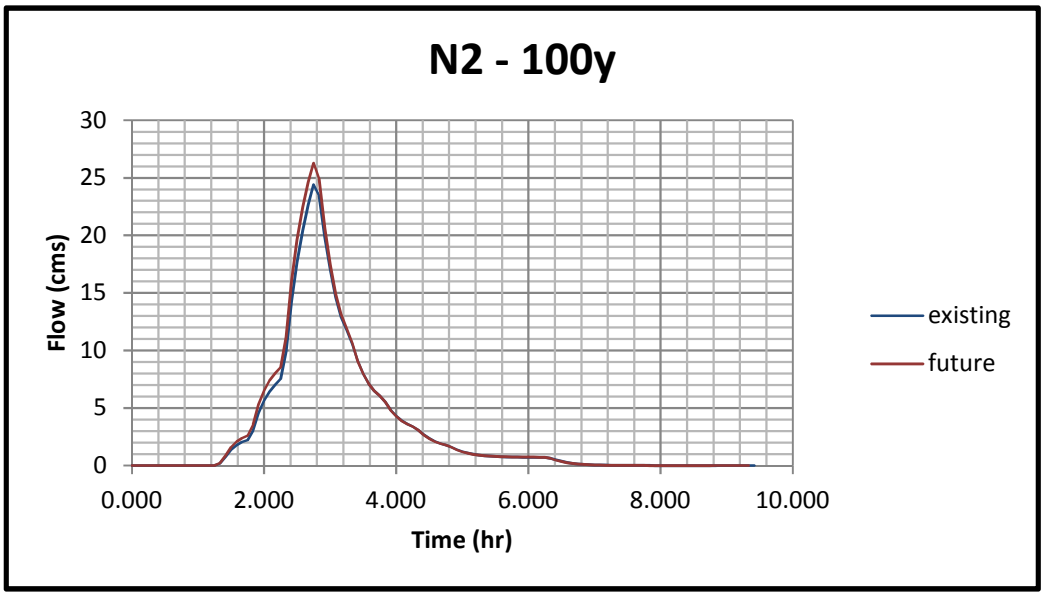


Figure A.3


N1 - 100y
180.00
160.00
140.00
120.00
100.00
80.00
60.00
40.00
20.00
0.00
Flow (cms)
0.000
10.000
20.000
30.000
40.000
50.000
Time (hr)
existing
future


N2 - 100y
30
25
20
15
10
5
0
Flow (cms)
0.000
2.000
4.000
6.000
8.000
10.000
Time (hr)
existing
future

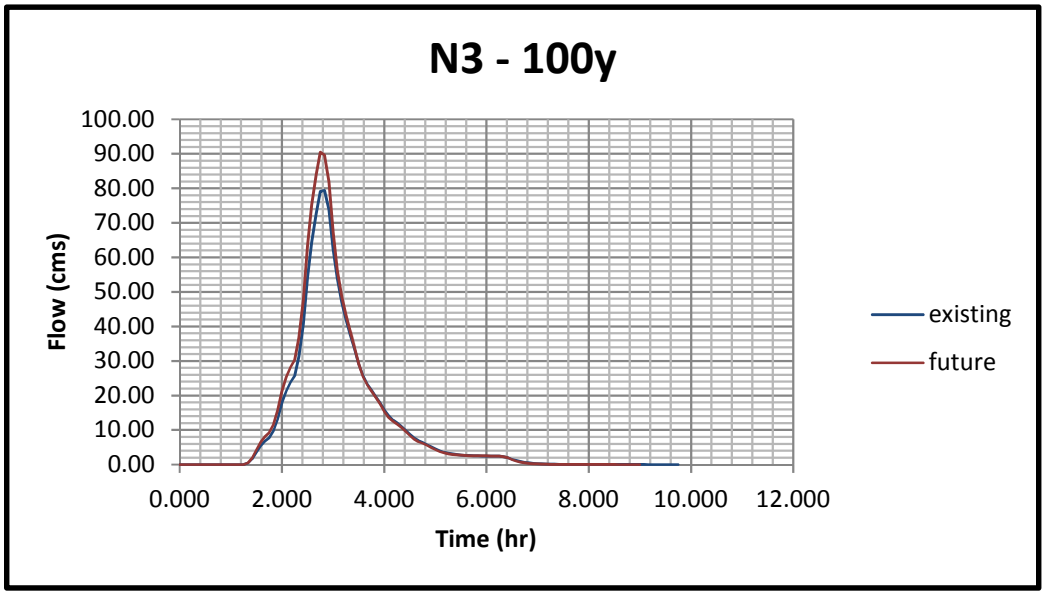
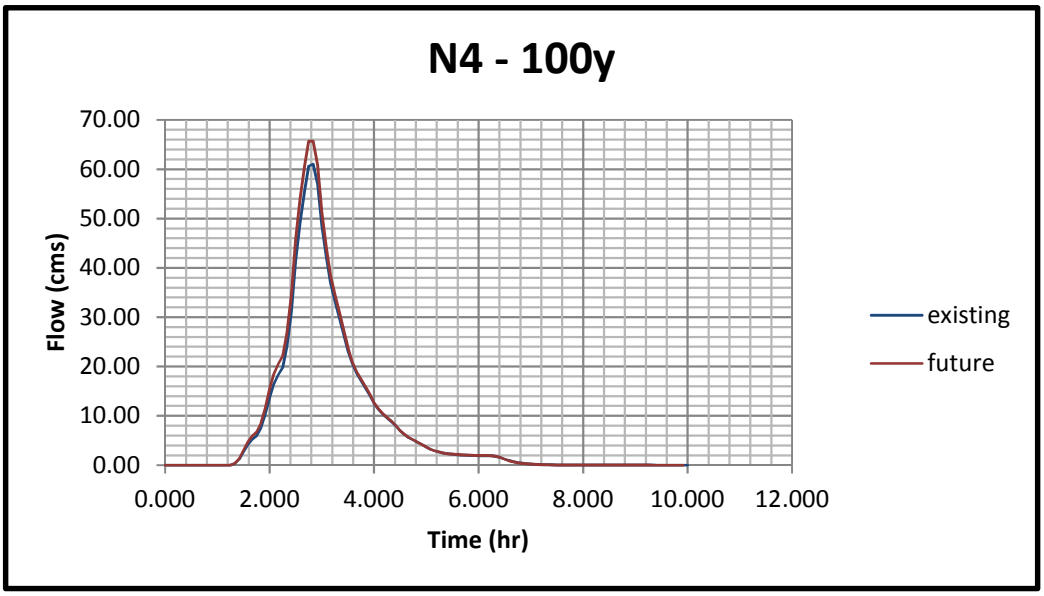

N3 - 100y
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
Flow (cms)
0.000
2.000
4.000
6.000
8.000
10.000
12.000
Time (hr)
existing
future

Figure A.3 (Cont'd.)



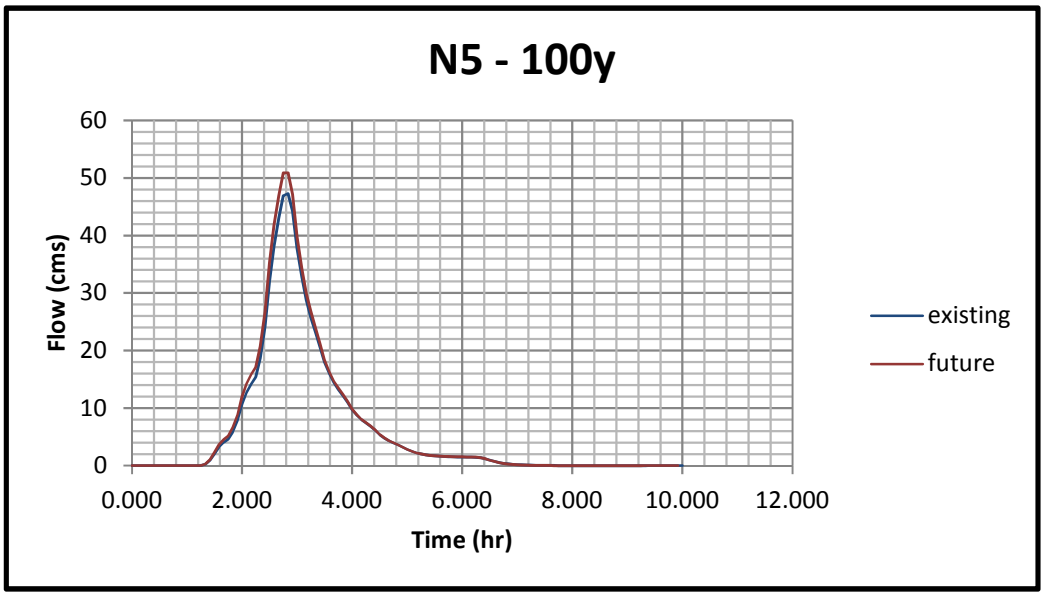
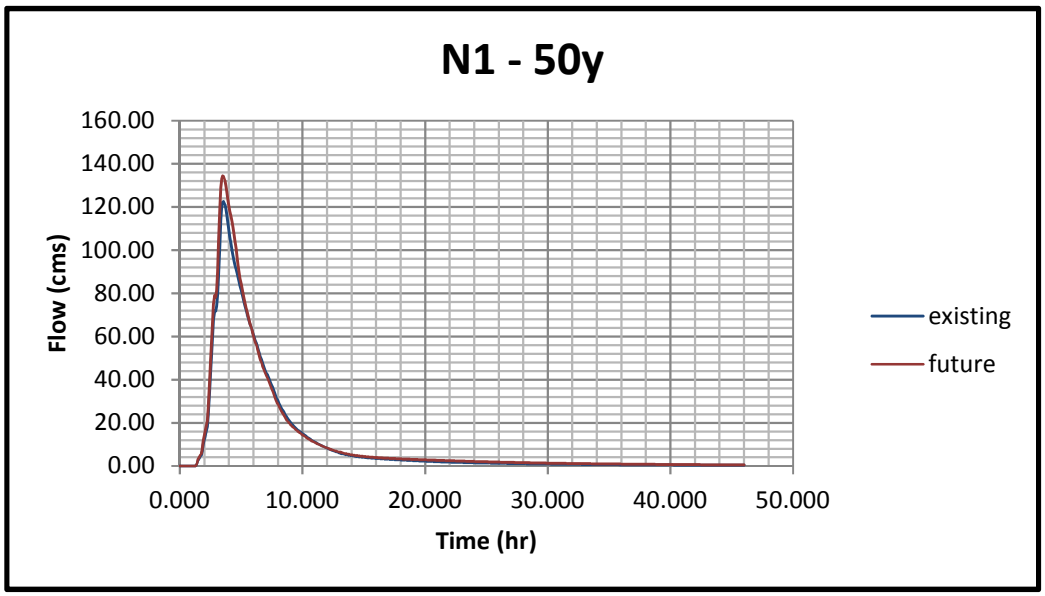
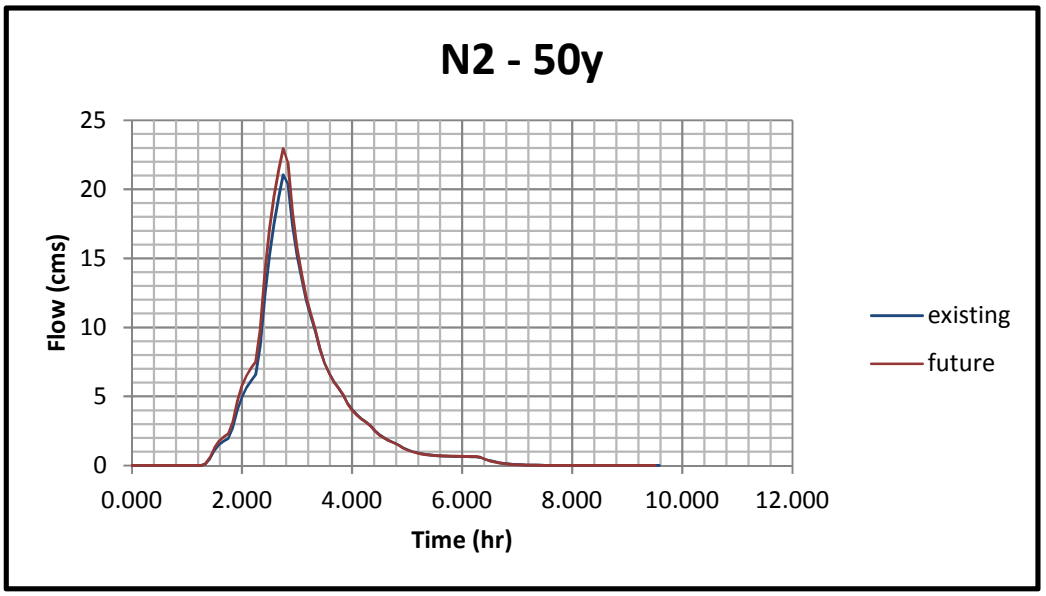


Figure A.4


N1 - 50y
160.00
140.00
120.00
100.00
80.00
60.00
40.00
20.00
0.00
Flow (cms)
0.000
10.000
20.000
30.000
40.000
50.000
Time (hr)
existing
future


N2 - 50y
25
20
15
10
5
0
Flow (cms)
0.000
2.000
4.000
6.000
8.000
10.000
12.000
Time (hr)
existing
future

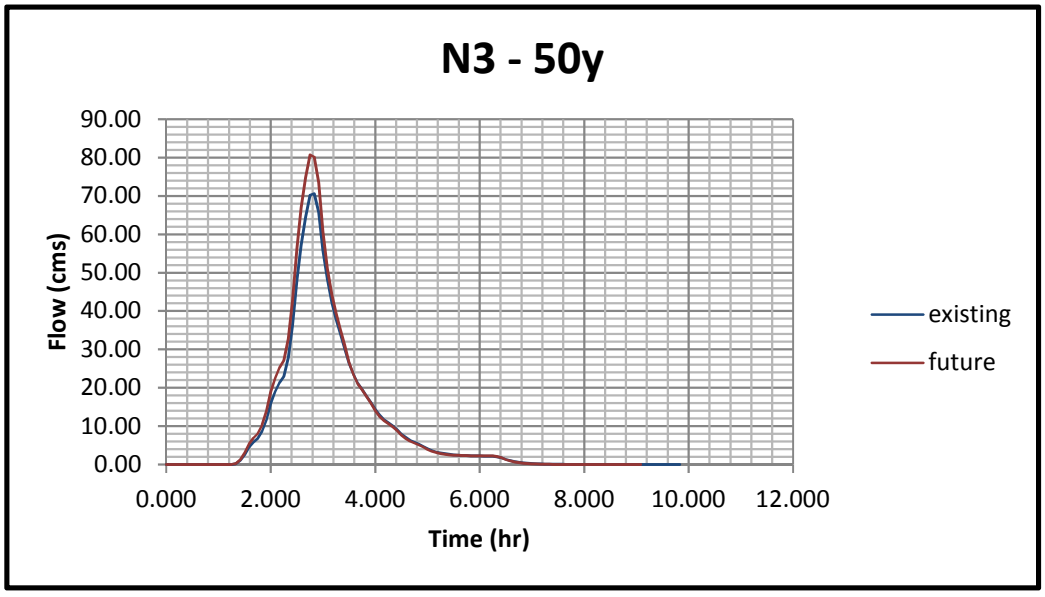
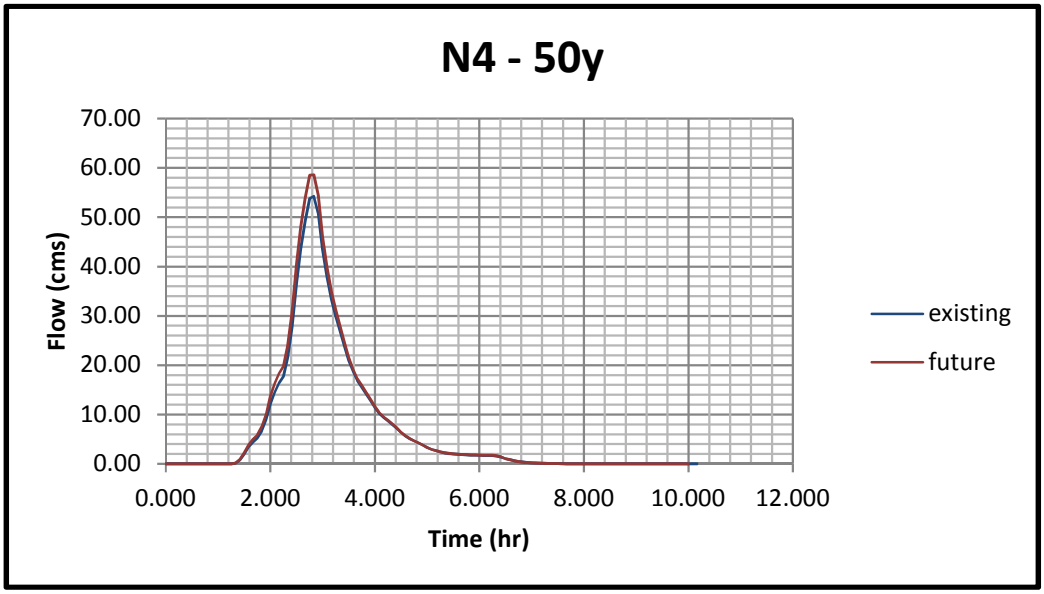

N3 - 50y
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
Flow (cms)
0.000
2.000
4.000
6.000
8.000
10.000
12.000
Time (hr)
existing
future

Figure A.4 (Cont'd.)



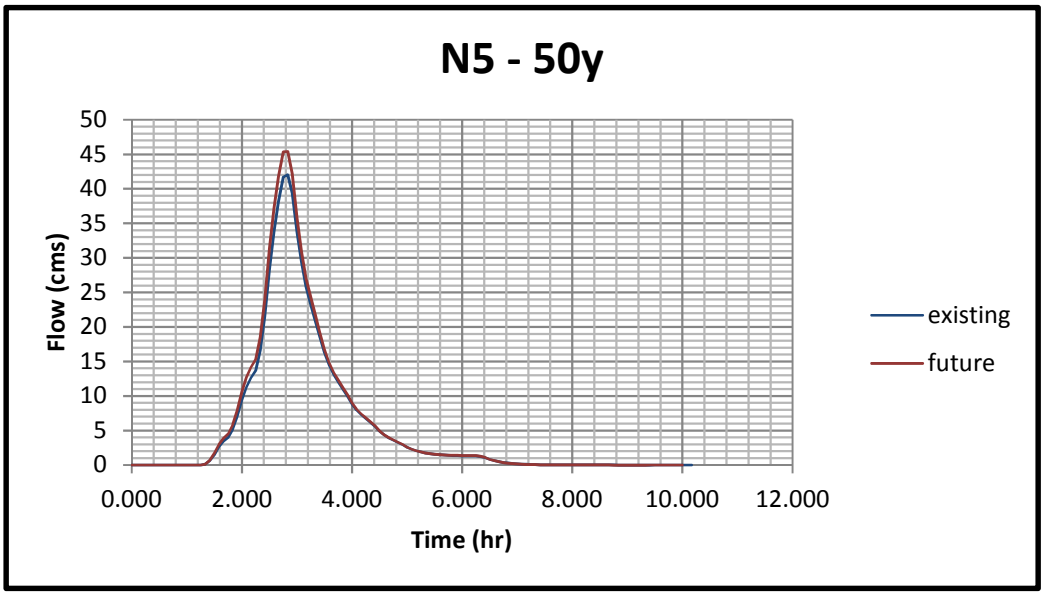
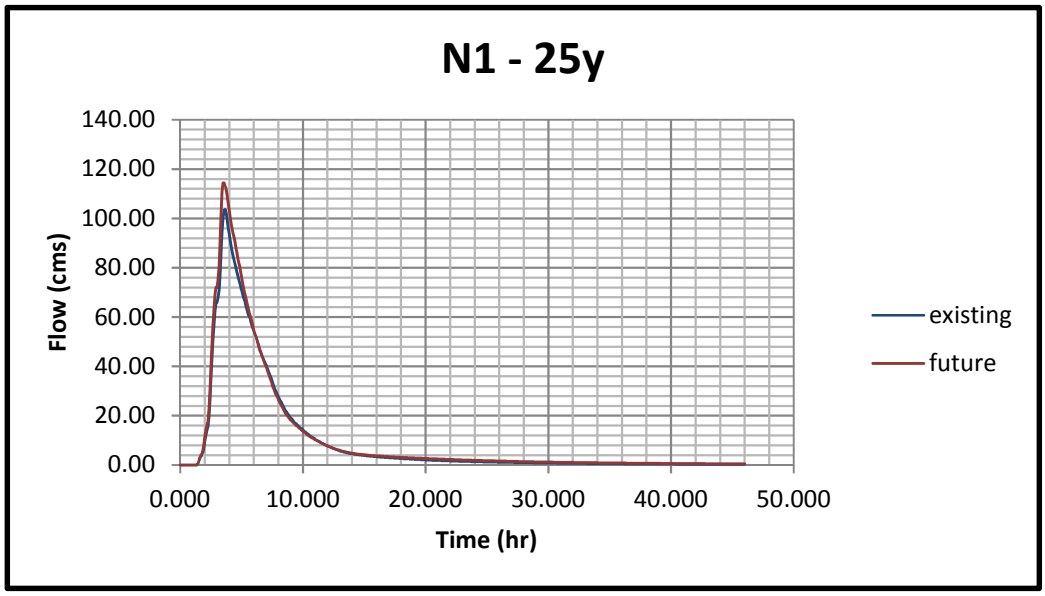
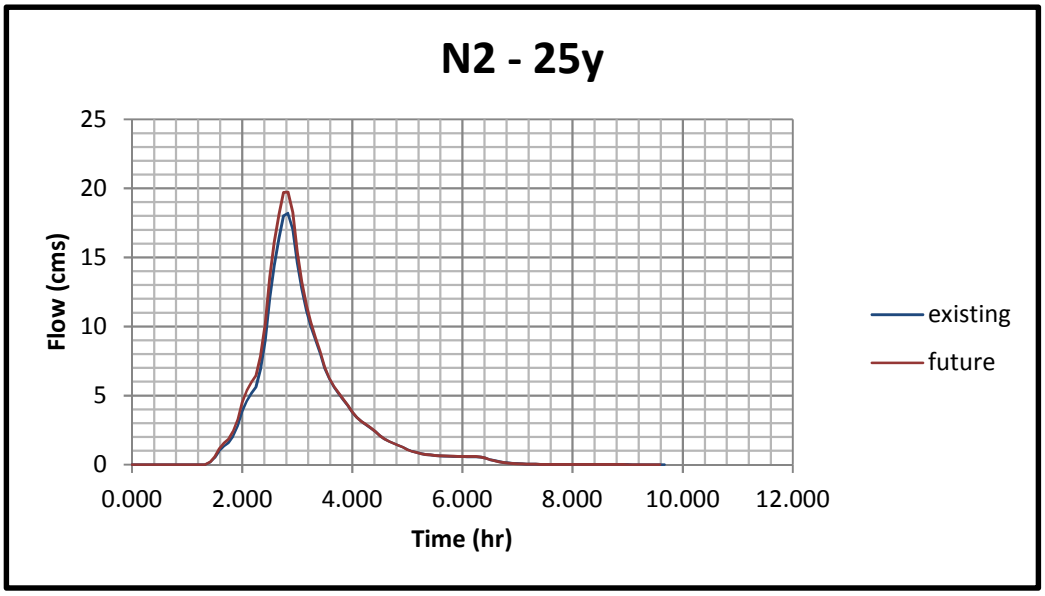


Figure A.5


N1 - 25y
140.00
120.00
100.00
80.00
60.00
40.00
20.00
0.00
Flow (cms)
0.000
10.000
20.000
30.000
40.000
50.000
Time (hr)
existing
future


N2 - 25y
25
20
15
10
5
0
Flow (cms)
0.000
2.000
4.000
6.000
8.000
10.000
12.000
Time (hr)
existing
future

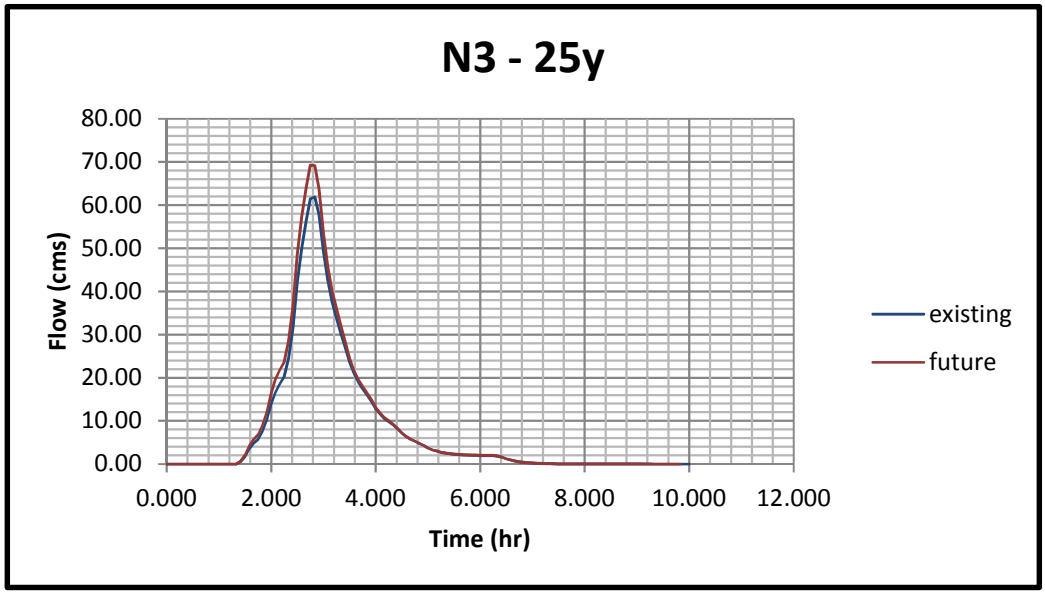
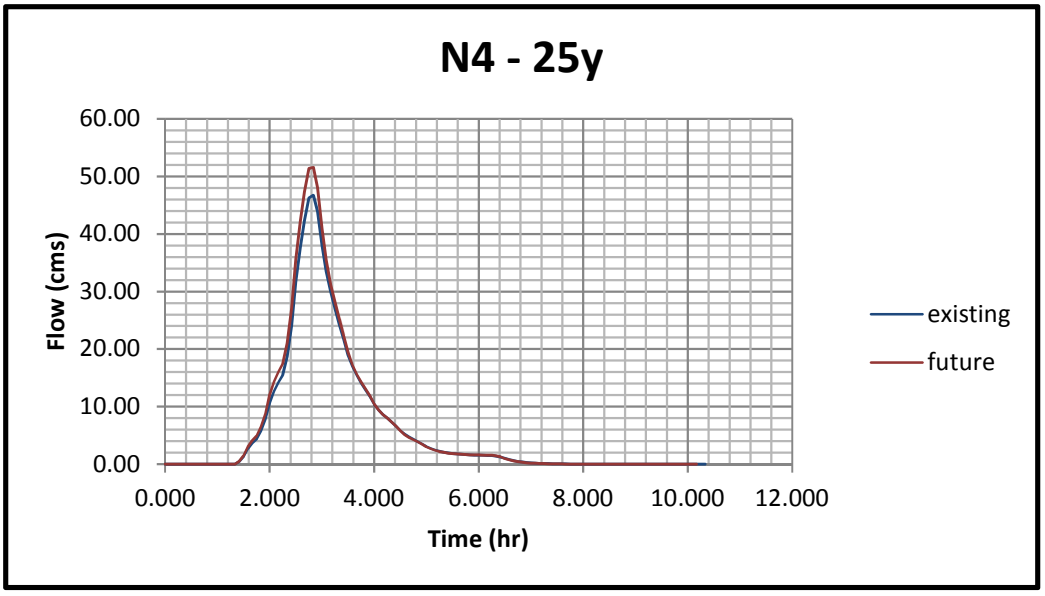

N3 - 25y
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
Flow (cms)
0.000
2.000
4.000
6.000
8.000
10.000
12.000
Time (hr)
existing
future

Figure A.5 (Cont'd.)



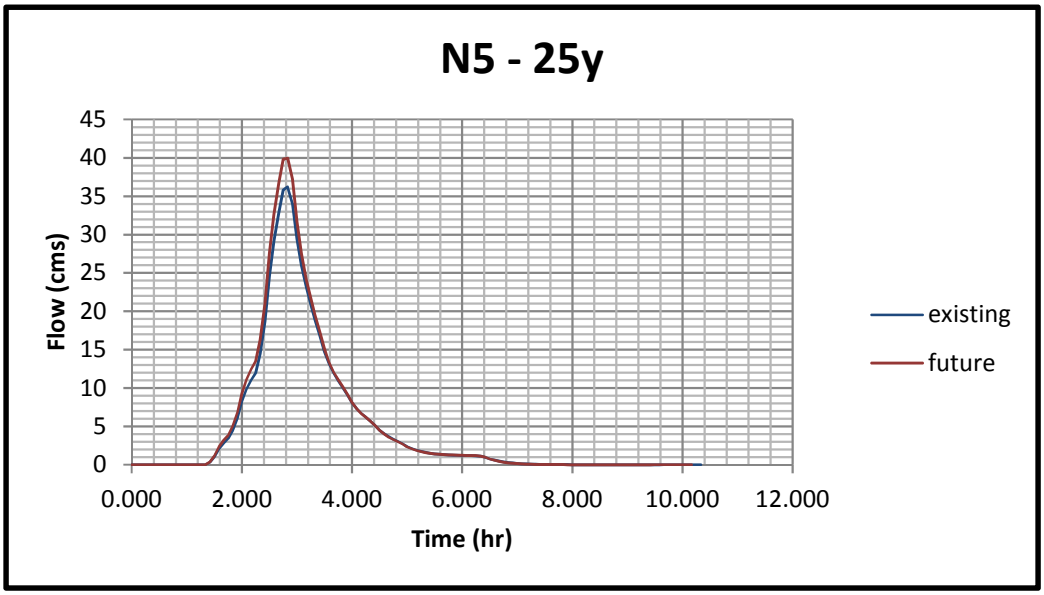
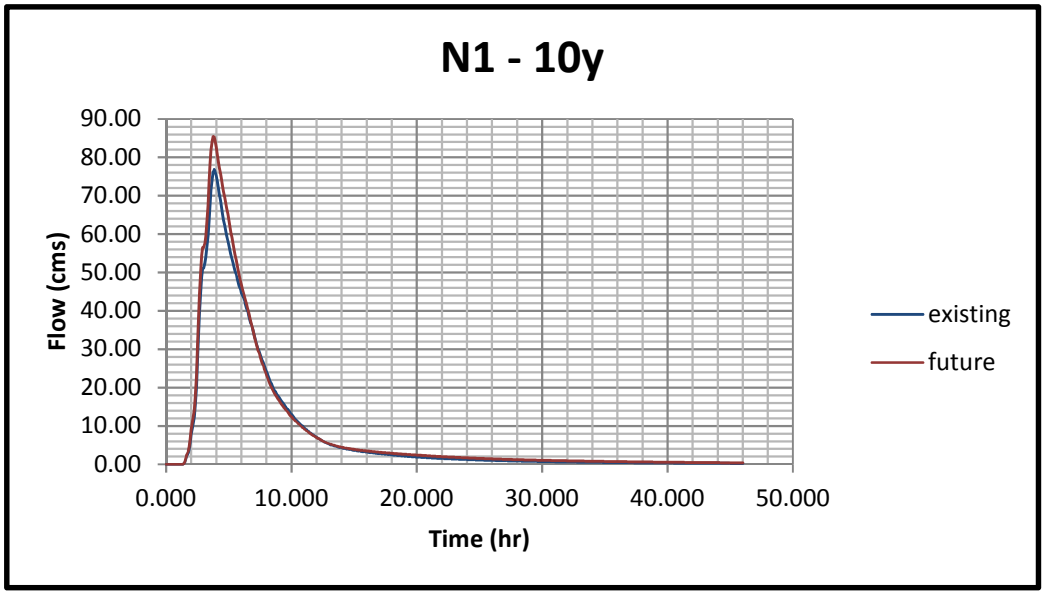
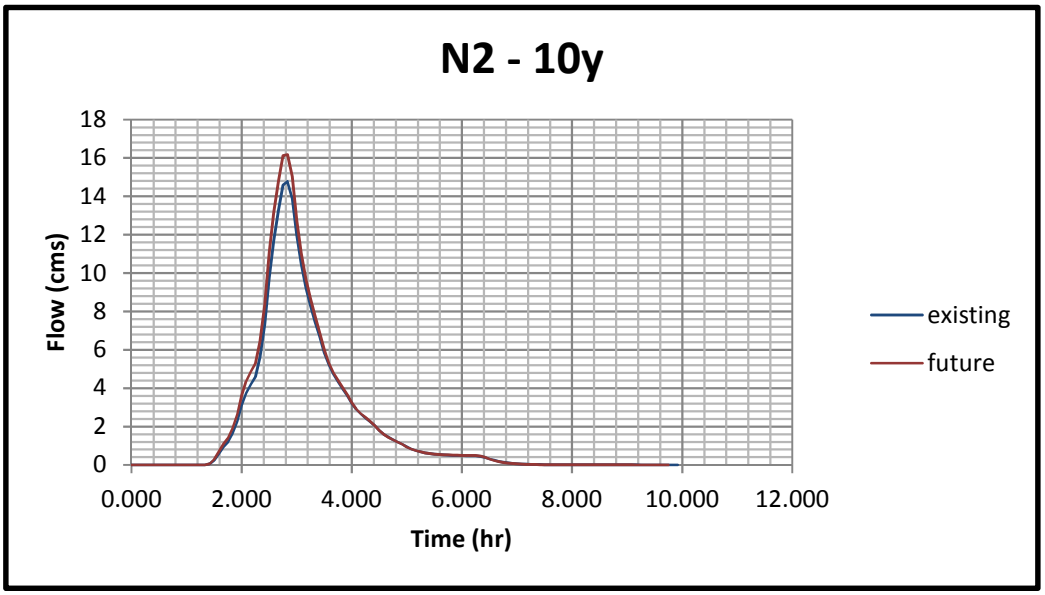


Figure A.6


N1 - 10y
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
Flow (cms)
0.000
10.000
20.000
30.000
40.000
50.000
Time (hr)
existing
future


N2 - 10y
18
16
14
12
10
8
6
4
2
0
Flow (cms)
0.000
2.000
4.000
6.000
8.000
10.000
12.000
Time (hr)
existing
future

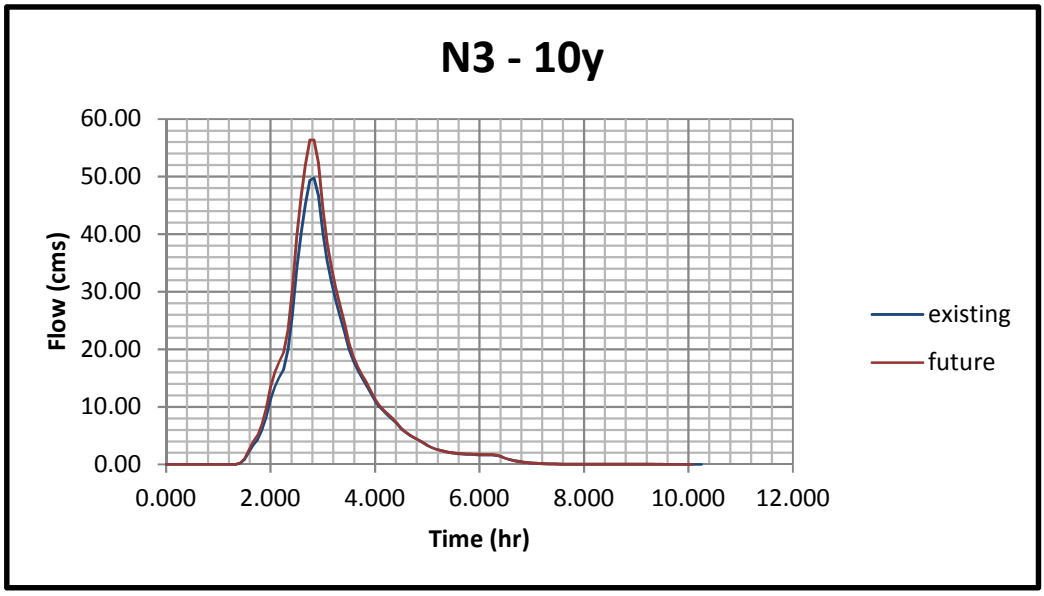
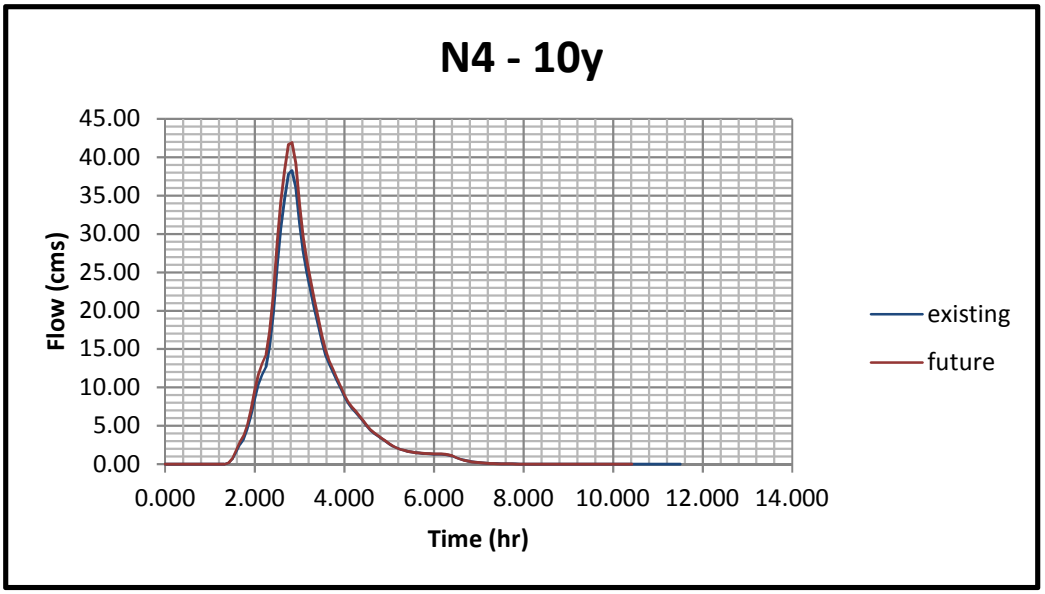

N3 - 10y
60.00
50.00
40.00
30.00
20.00
10.00
0.00
Flow (cms)
0.000
2.000
4.000
6.000
8.000
10.000
12.000
Time (hr)
existing
future

Figure A.6 (Cont'd.)



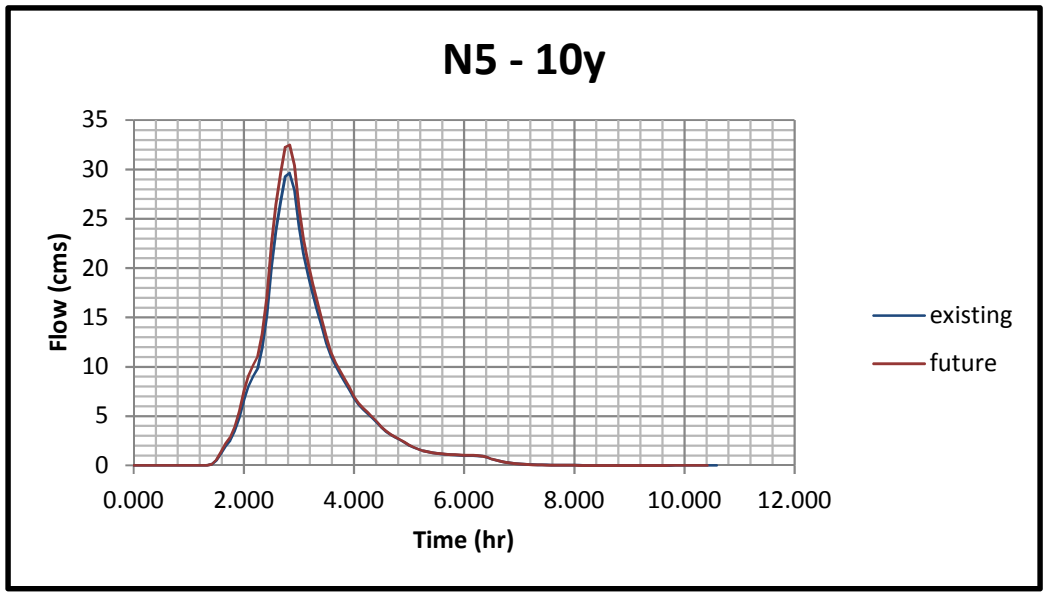
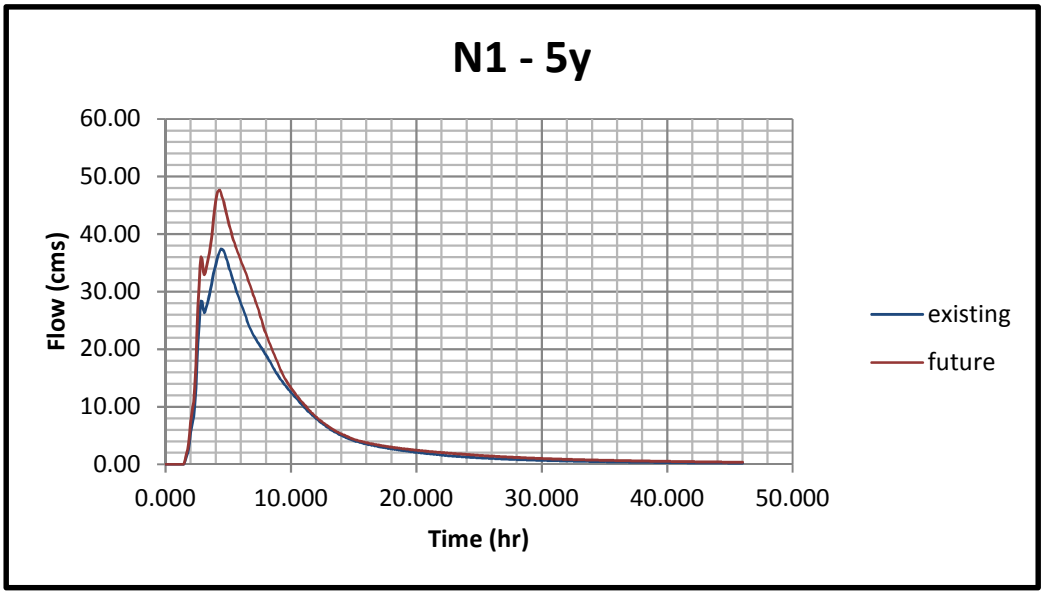
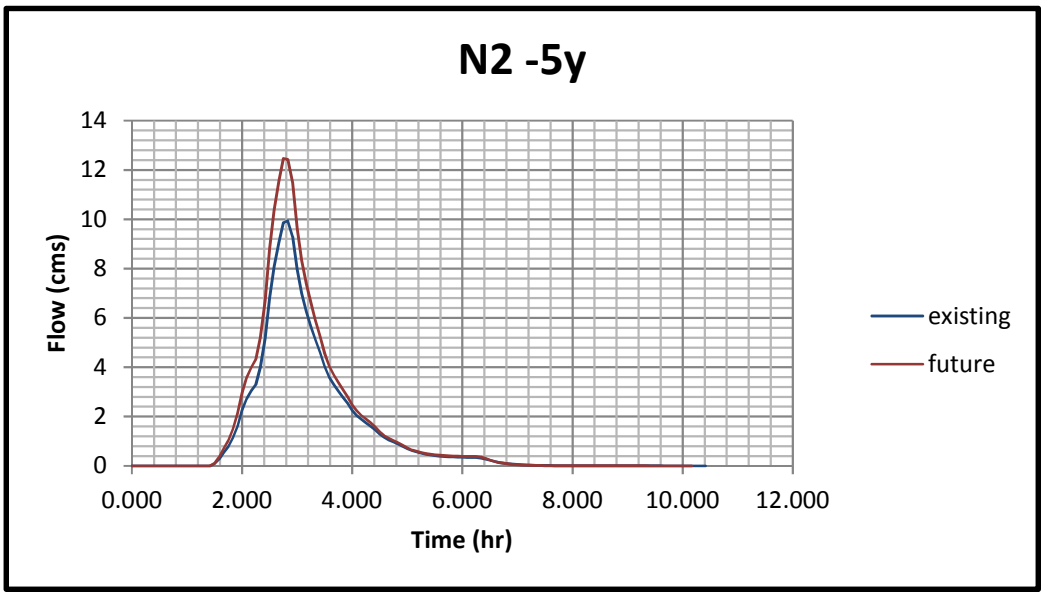


Figure A.7


N1 - 5y
60.00
50.00
40.00
30.00
20.00
10.00
0.00
Flow (cms)
0.000
10.000
20.000
30.000
40.000
50.000
Time (hr)
existing
future


N2 -5y
14
12
10
8
6
4
2
0
Flow (cms)
0.000
2.000
4.000
6.000
8.000
10.000
12.000
Time (hr)
existing
future

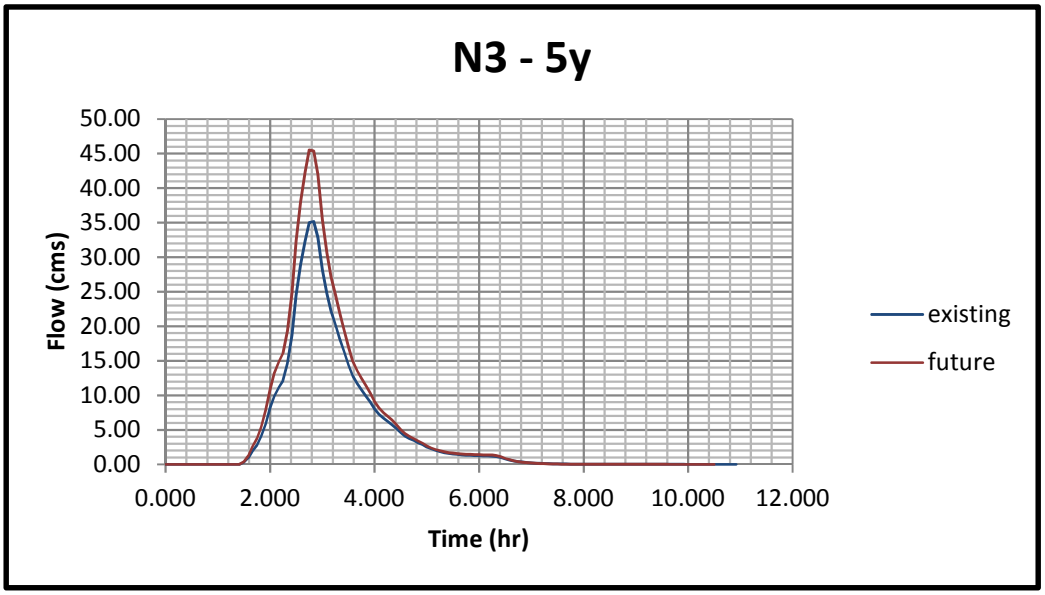
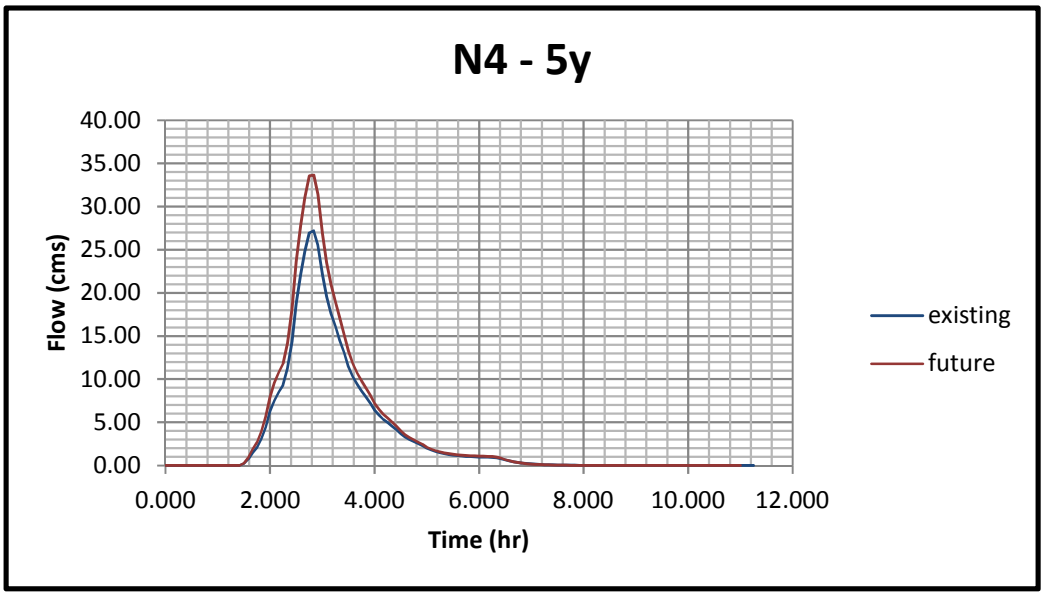

N3 - 5y
50.00
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
Flow (cms)
0.000
2.000
4.000
6.000
8.000
10.000
12.000
Time (hr)
existing
future

Figure A.7 (Cont'd.)



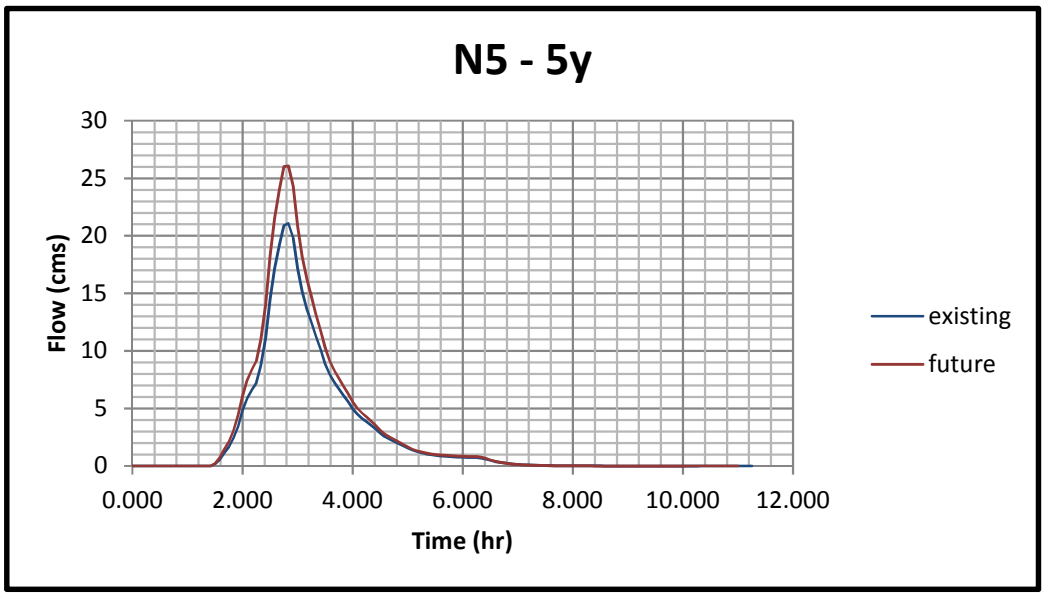
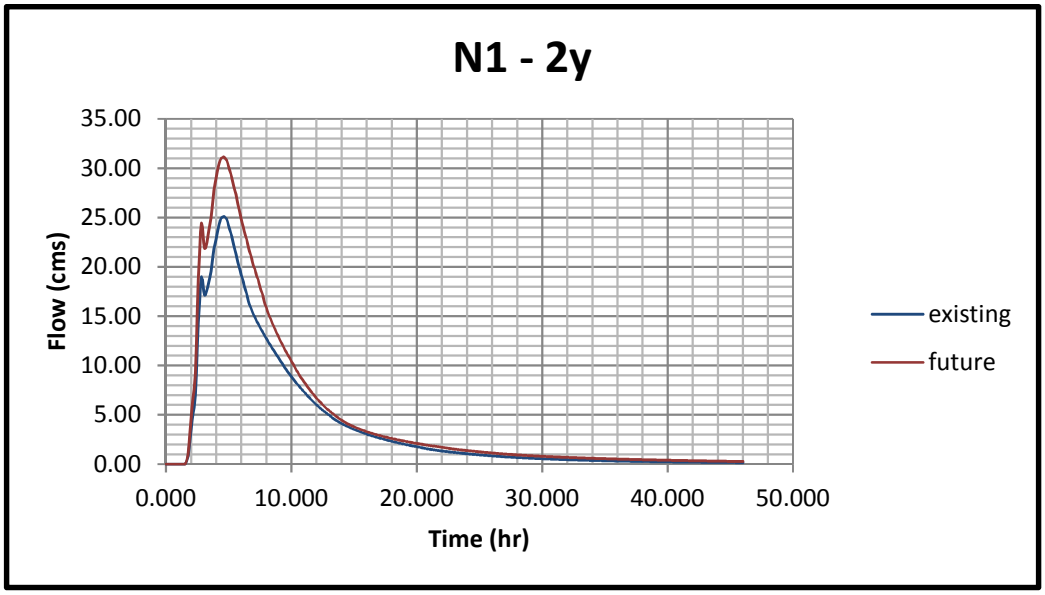
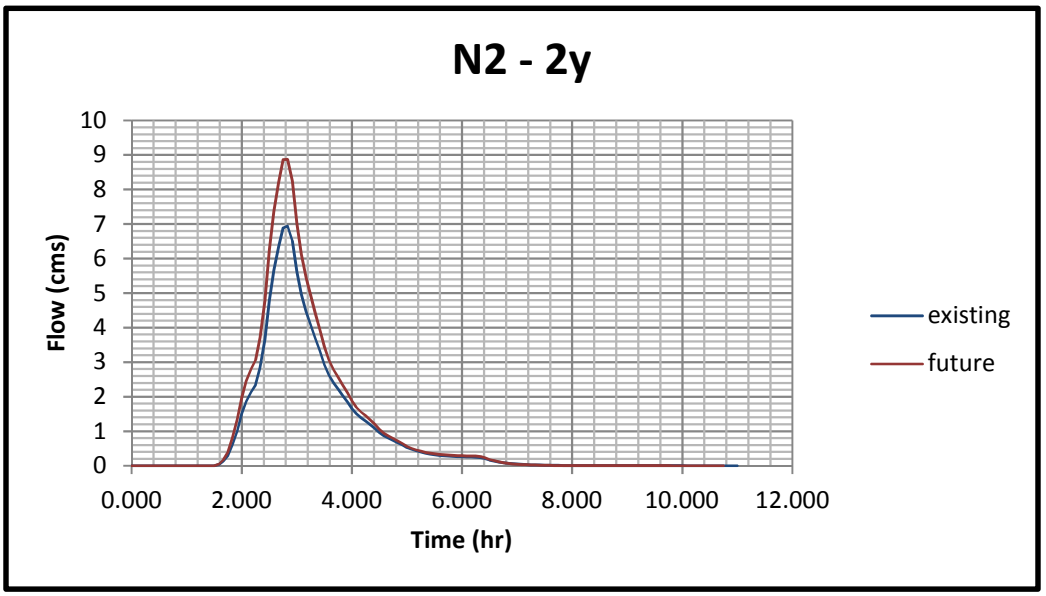


Figure A.8


N1 - 2y
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
Flow (cms)
0.000
10.000
20.000
30.000
40.000
50.000
Time (hr)
existing
future


N2 - 2y
10
9
8
7
6
5
4
3
2
1
0
Flow (cms)
0.000
2.000
4.000
6.000
8.000
10.000
12.000
Time (hr)
existing
future

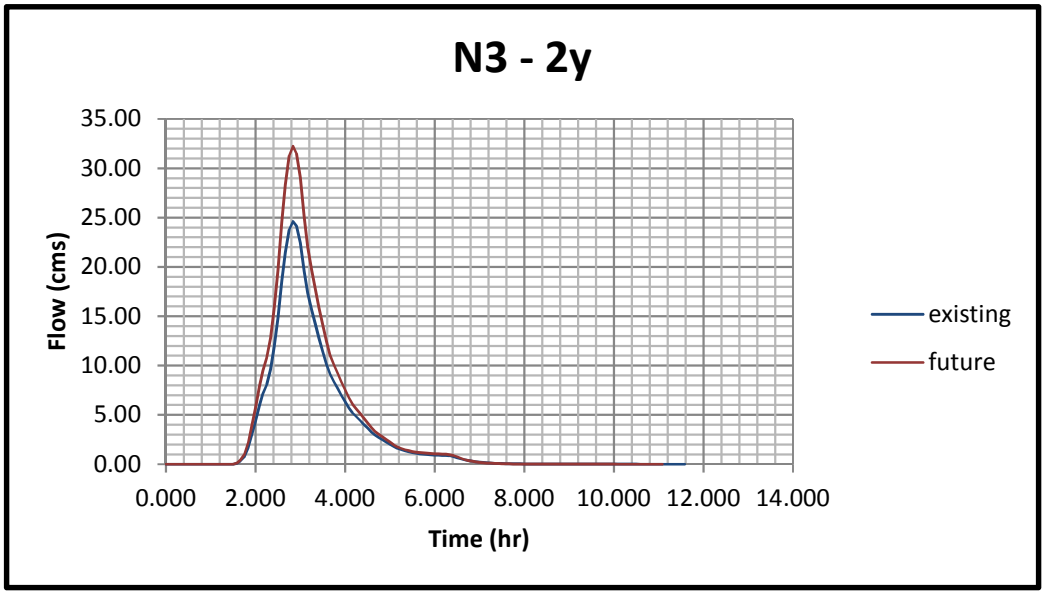
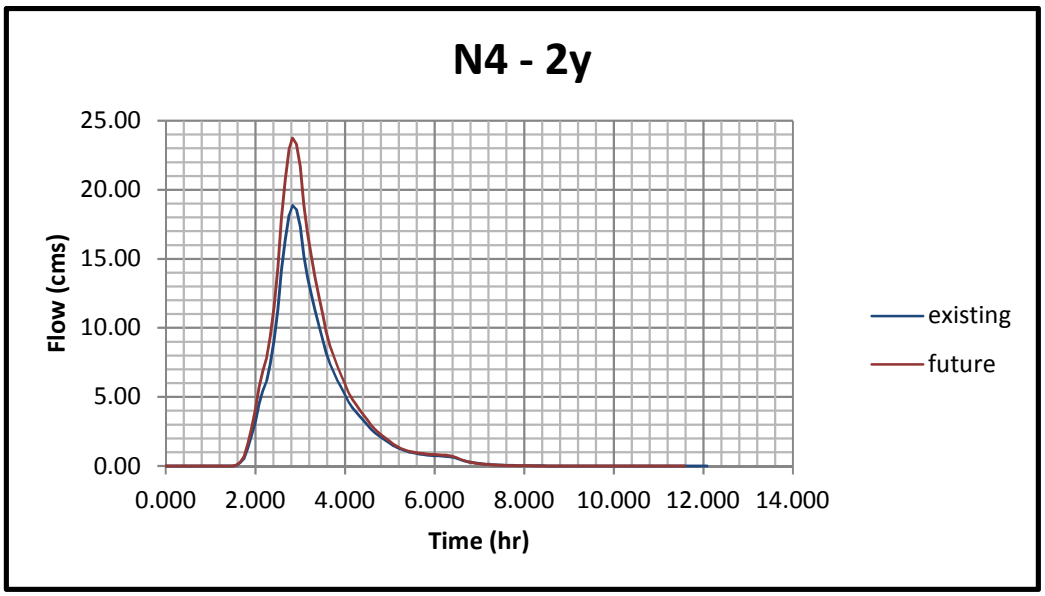
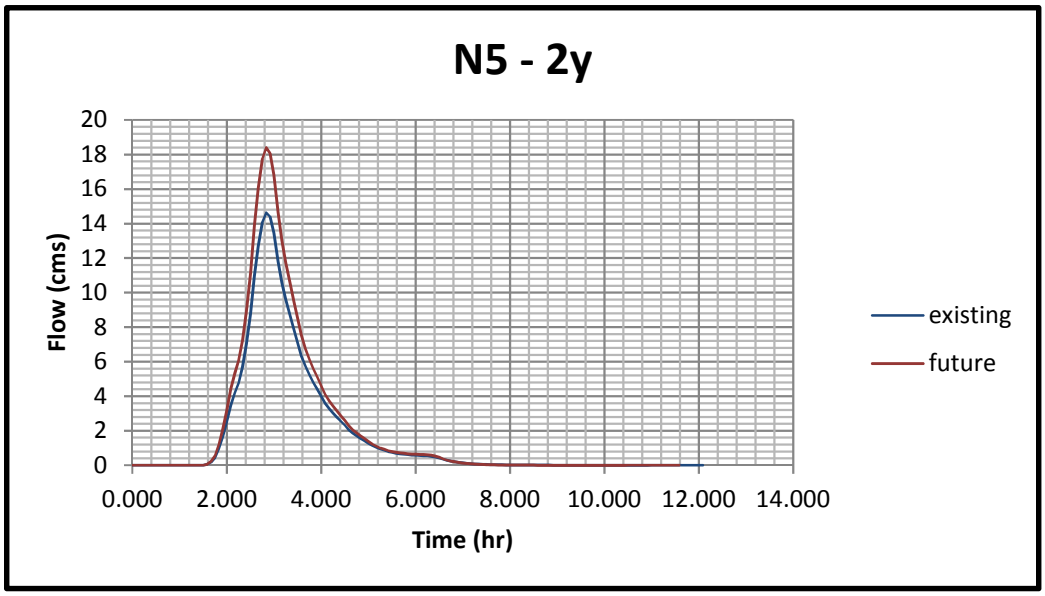

N3 - 2y
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
Flow (cms)
0.000
2.000
4.000
6.000
8.000
10.000
12.000
14.000
Time (hr)
existing
future

Figure A.8 (Cont'd.)





Valdor Engineering Inc.
File: 15110
Date: October 2016

Table A.1 LiDAR Verification - Comparison of LiDAR DEM and Survey Points

Elevation (m)			Notes
Survey	LiDAR	Difference	
127.681	127.687	**-0.006**	Sheridan Mall Parking - NW of Jane St. and Wilson Ave.
127.881	127.921	**-0.04**	Sheridan Mall Parking - NW of Jane St. and Wilson Ave.
127.55	127.54	**0.01**	Sheridan Mall Parking - NW of Jane St. and Wilson Ave.
127.688	127.722	**-0.034**	Sheridan Mall Parking - NW of Jane St. and Wilson Ave.
127.382	127.421	**-0.039**	Sheridan Mall Parking - NW of Jane St. and Wilson Ave.
123.118	123.137	**-0.019**	Plaza Parking - SE corner of Black Creek Dr. and Lawrence Ave. intersection
123.254	123.264	**-0.01**	Plaza Parking - SE corner of Black Creek Dr. and Lawrence Ave. intersection
123.496	123.487	**0.009**	Plaza Parking - SE corner of Black Creek Dr. and Lawrence Ave. intersection
122.926	122.967	**-0.041**	Plaza Parking - SE corner of Black Creek Dr. and Lawrence Ave. intersection

Average Absolute Difference (LiDAR vs. Survey):	**0.02**

Table A.2a

Urban Residential Misc. Composite Roughness

Date: 01 April 2016

Manning n for Sample Site 1 (see following figure)		
Land Use/Cover	Area, sqm	n
Buidings	1472.31	
Impervious Surface (Paved/Concrete)	1304.60	0.025
Grass cover lawn/back yard	1560.97	0.050
Total Area (except buildings)	2865.57	0.039
Total Sample Area	4337.88	

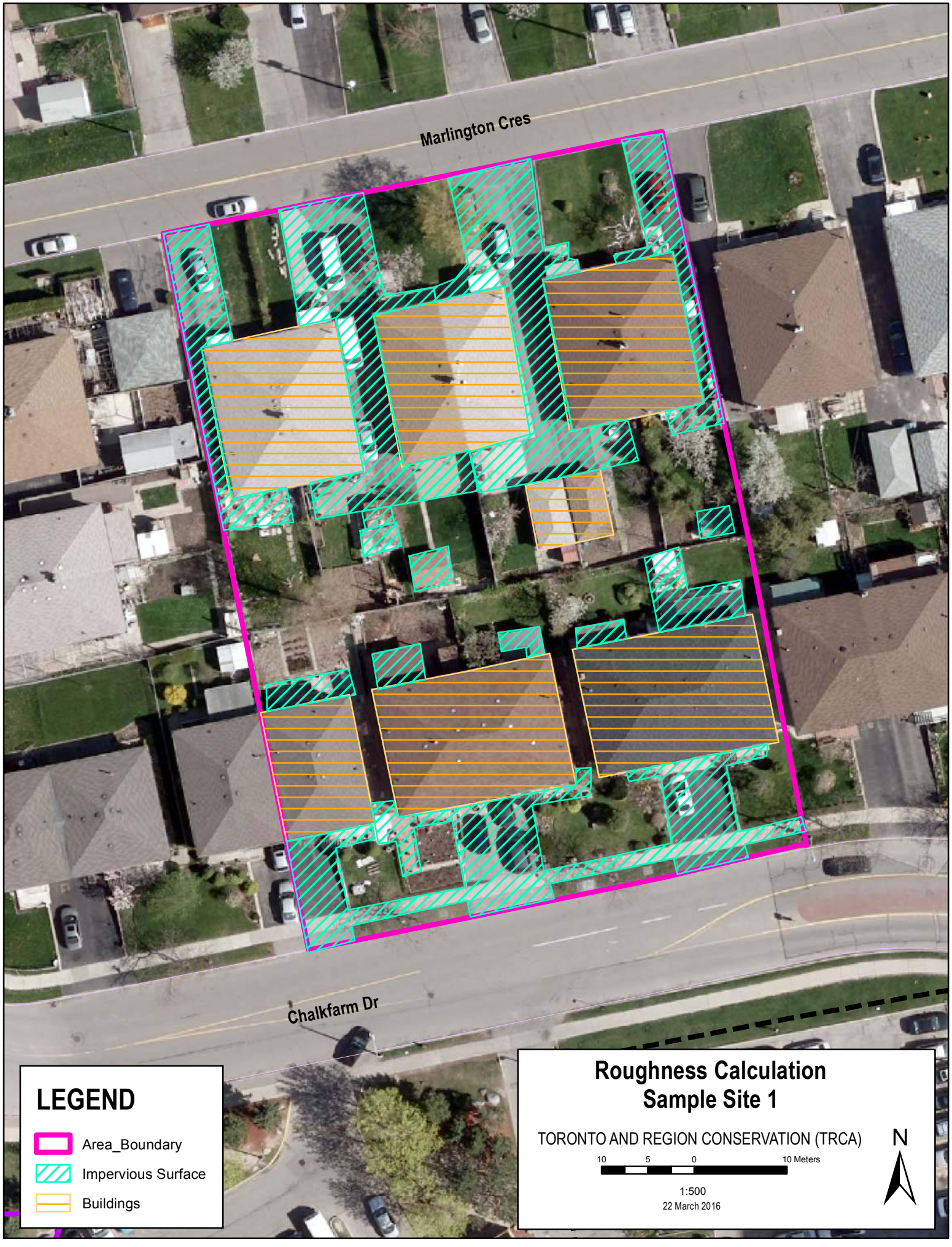
Manning n for Sample Site 2 (see following figure)		
Land Use/Cover	Area, sqm	n
Buidings	1263.33	
Impervious Surface (Paved/Concrete)	1160.66	0.025
Grass cover lawn/back yard	1610.13	0.050
Total Area (except buildings)	2770.79	0.040
Total Sample Area	4034.12	

Average, n = **0.039073**

Table A.2b

Urban Industrial Misc. Composite Roughness

Manning n Calculations Completed for a Representative Location within the study		
Land Use/Cover	Area, sqm	n
Measured area for impervious driveways and walkways	21151.00	0.025
Measured area for urban pervious (lawn)	54556.00	0.05
Total Composite Area (excluding buildings)	75707.00	**0.043**


Marlington Cres
Chalkfarm Dr
LEGEND
Area_Boundary
Impervious Surface
Buildings
Roughness Calculation
Sample Site 1
TORONTO AND REGION CONSERVATION (TRCA)
10 5 0 10 Meters
1:500
22 March 2016
N

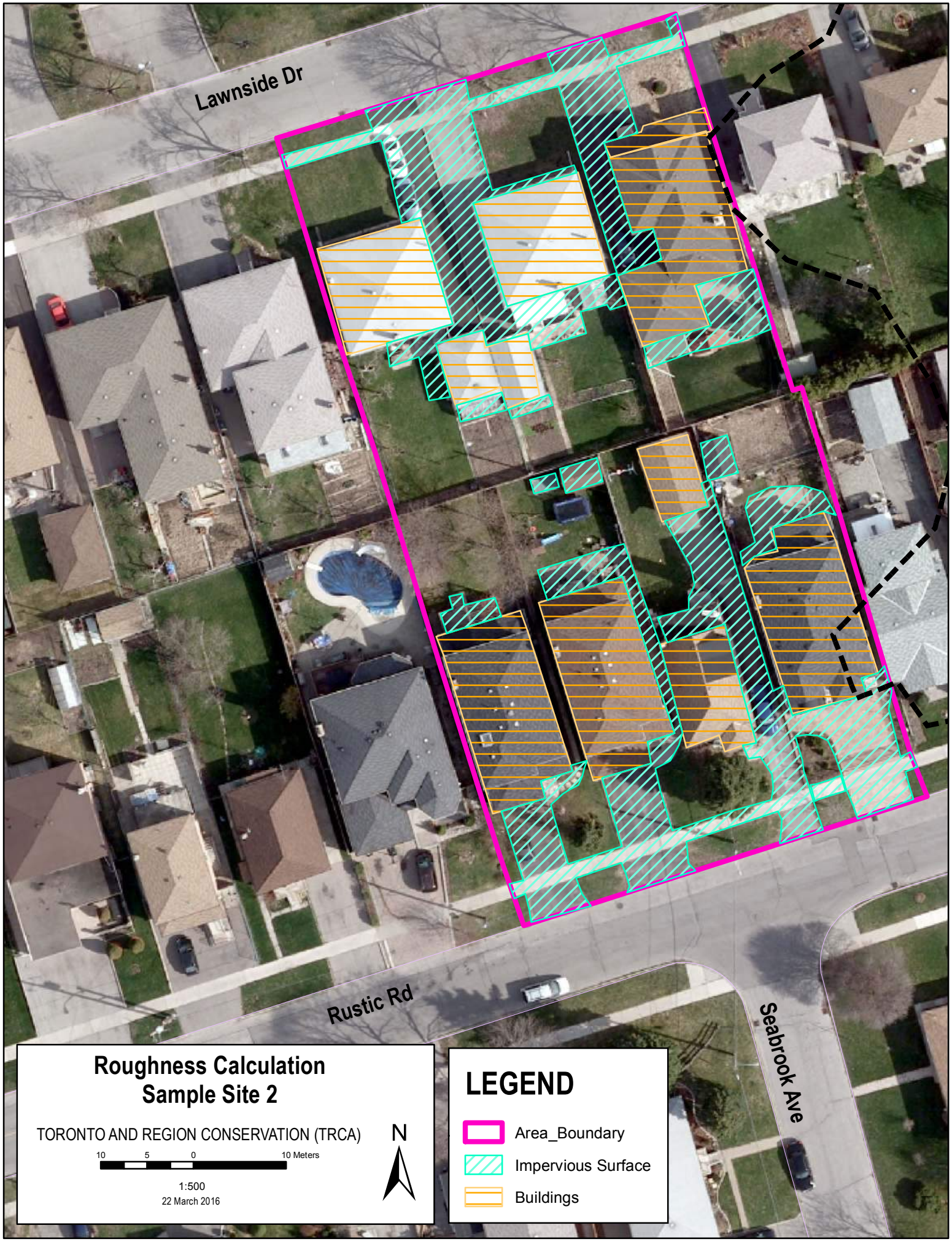

Lawnside Dr
Rustic Rd
Seabrook Ave
Roughness Calculation
Sample Site 2
TORONTO AND REGION CONSERVATION (TRCA)
10 5 0 10 Meters
1:500
22 March 2016
N
LEGEND
Area_Boundary
Impervious Surface
Buildings

Table A.3: Comparison of Mike 11 and HEC-RAS Water Surface Elevations
(Current approved HEC-RAS model with updated peak flows)

M11 Chainage	M11 Chainage	M11 WS Elevations	HEC-RAS WS Elevations	Difference
	m	m	m	m
BLACKCREEK_DIGI 276.096	276	130.915	130.67	0.245
BLACKCREEK_DIGI 322.282	322	130.889	130.67	0.219
BLACKCREEK_DIGI 421.481	421	130.763	130.5	0.263
BLACKCREEK_DIGI 503.374	503	130.73	130.53	0.2
BLACKCREEK_DIGI 600.209	600	130.423	130.53	-0.107
BLACKCREEK_DIGI 707.571	707	130.377	130.45	-0.073
BLACKCREEK_DIGI 802.94	802	130.334	130.45	-0.116
BLACKCREEK_DIGI 911.866	911	130.259	129.98	0.279
BLACKCREEK_DIGI 1032.35	1032	129.941	129.98	-0.039
BLACKCREEK_DIGI 1119.76	1119	129.299	129.39	-0.091
BLACKCREEK_DIGI 1200.3	1200	129.035	129.07	-0.035
BLACKCREEK_DIGI 1276.6	1276	129.201	129.07	0.131
BLACKCREEK_DIGI 1319.1	1319	128.558	128.64	-0.082
BLACKCREEK_DIGI 1380.14	1380	128.657	128.67	-0.013
BLACKCREEK_DIGI 1390.09	1390	128.657	128.67	-0.013
BLACKCREEK_DIGI 1470.02	1470	128.068	128.57	-0.502
BLACKCREEK_DIGI 1549.99	1549	128.057	128.6	-0.543
BLACKCREEK_DIGI 1630.06	1630	127.935	128.57	-0.635
BLACKCREEK_DIGI 1703.96	1703	127.917	128.59	-0.673
BLACKCREEK_DIGI 1799.72	1799	127.889	128.6	-0.711
BLACKCREEK_DIGI 1867.18	1867	127.561	128.48	-0.919
BLACKCREEK_DIGI 2059.59	2059	127.549	128.51	-0.961
BLACKCREEK_DIGI 2119.86	2119	127.266	128.51	-1.244
BLACKCREEK_DIGI 2249.93	2249	127.297	128.51	-1.213
BLACKCREEK_DIGI 2270.01	2270	127.297	128.5	-1.203
BLACKCREEK_DIGI 2373.87	2373	127.028	128.39	-1.362
BLACKCREEK_DIGI 2430.0	2430	127.001	128.4	-1.399
BLACKCREEK_DIGI 2590.6	2590	126.811	128.41	-1.599
BLACKCREEK_DIGI 2749.7	2749	126.777	127.88	-1.103
BLACKCREEK_DIGI 2790.24	2790	126.78	128.06	-1.28
BLACKCREEK_DIGI 2900.22	2900	126.122	127.84	-1.718
BLACKCREEK_DIGI 2988.79	2988	125.479	127.51	-2.031
BLACKCREEK_DIGI 3150.37	3150	124.947	127.17	-2.223
BLACKCREEK_DIGI 3188.74	3188	124.848	127.45	-2.602
BLACKCREEK_DIGI 3238.35	3238	124.543	124.07	0.473
BLACKCREEK_DIGI 3419.92	3419	124.427	124.62	-0.193
BLACKCREEK_DIGI 3479.91	3479	123.746	124.07	-0.324
BLACKCREEK_DIGI 3612.75	3612	123.63	124.07	-0.44
BLACKCREEK_DIGI 3793.09	3793	123.157	123	0.157
BLACKCREEK_DIGI 3887.06	3887	123.03	122.56	0.47
BLACKCREEK_DIGI 3960.11	3960	122.895	122.54	0.355
BLACKCREEK_DIGI 4091.46	4091	122.577	122.45	0.127
BLACKCREEK_DIGI 4211.89	4211	122.274	121.82	0.454
BLACKCREEK_DIGI 4319.65	4319	122.267	121.74	0.527
BLACKCREEK_DIGI 4403.36	4403	121.94	121.59	0.35
BLACKCREEK_DIGI 4464.54	4464	121.762	120.77	0.992
BLACKCREEK_DIGI 4597.99	4597	119.886	120.39	-0.504
BLACKCREEK_DIGI 4643.8	4643	119.513	119.91	-0.397
BLACKCREEK_DIGI 4691.81	4691	119.396	119.22	0.176
BLACKCREEK_DIGI 4884.18	4884	118.349	117.86	0.489
BLACKCREEK_DIGI 4955.8	4955	118.199	117.86	0.339
BLACKCREEK_DIGI 5015.82	5015	118.128	117.48	0.648
BLACKCREEK_DIGI 5120.05	5120	118.034	117.26	0.774

Table A.4: Comparison of Mike 11 & HEC-RAS Water Surface Elevations
(Roughness 'n', ineffective flow areas, flow input locations and obstructions are modified in HEC-RAS to best reflect existing conditions and the approach used in Mike Flood)

M11 Chainage	M11 Chainage	M11 WS Elevations	HEC-RAS WS Elevations	Difference
	m	m	m	m
BLACKCREEK_DIGI 276.096	276	130.915	130.67	0.245
BLACKCREEK_DIGI 322.282	322	130.889	130.67	0.219
BLACKCREEK_DIGI 421.481	421	130.763	130.67	0.093
BLACKCREEK_DIGI 503.374	503	130.73	130.53	0.2
BLACKCREEK_DIGI 600.209	600	130.423	130.53	-0.107
BLACKCREEK_DIGI 707.571	707	130.377	130.53	-0.153
BLACKCREEK_DIGI 802.94	802	130.334	130.45	-0.116
BLACKCREEK_DIGI 911.866	911	130.259	129.98	0.279
BLACKCREEK_DIGI 1032.35	1032	129.941	129.48	0.461
BLACKCREEK_DIGI 1119.76	1119	129.299	129.48	-0.181
BLACKCREEK_DIGI 1200.3	1200	129.035	129.07	-0.035
BLACKCREEK_DIGI 1276.6	1276	129.201	128.94	0.261
BLACKCREEK_DIGI 1319.1	1319	128.558	128.93	-0.372
BLACKCREEK_DIGI 1380.14	1380	128.657	128.25	0.407
BLACKCREEK_DIGI 1390.09	1390	128.657	128.02	0.637
BLACKCREEK_DIGI 1470.02	1470	128.068	127.85	0.218
BLACKCREEK_DIGI 1549.99	1549	128.057	127.87	0.187
BLACKCREEK_DIGI 1630.06	1630	127.935	127.74	0.195
BLACKCREEK_DIGI 1703.96	1703	127.917	127.8	0.117
BLACKCREEK_DIGI 1799.72	1799	127.889	127.82	0.069
BLACKCREEK_DIGI 1867.18	1867	127.561	127.43	0.131
BLACKCREEK_DIGI 2059.59	2059	127.549	126.74	0.809
BLACKCREEK_DIGI 2119.86	2119	127.266	126.94	0.326
BLACKCREEK_DIGI 2249.93	2249	127.297	126.94	0.357
BLACKCREEK_DIGI 2270.01	2270	127.297	126.91	0.387
BLACKCREEK_DIGI 2373.87	2373	127.028	126.86	0.168
BLACKCREEK_DIGI 2430.0	2430	127.001	126.78	0.221
BLACKCREEK_DIGI 2590.6	2590	126.811	126.61	0.201
BLACKCREEK_DIGI 2749.7	2749	126.777	126.17	0.607
BLACKCREEK_DIGI 2790.24	2790	126.78	126.28	0.5
BLACKCREEK_DIGI 2900.22	2900	126.122	126.21	-0.088
BLACKCREEK_DIGI 2988.79	2988	125.479	125.35	0.129
BLACKCREEK_DIGI 3150.37	3150	124.947	124.78	0.167
BLACKCREEK_DIGI 3188.74	3188	124.848	125.1	-0.252
BLACKCREEK_DIGI 3238.35	3238	124.543	124.83	-0.287
BLACKCREEK_DIGI 3419.92	3419	124.427	124.7	-0.273
BLACKCREEK_DIGI 3479.91	3479	123.746	123.8	-0.054
BLACKCREEK_DIGI 3612.75	3612	123.63	123.8	-0.17
BLACKCREEK_DIGI 3793.09	3793	123.157	123.22	-0.063
BLACKCREEK_DIGI 3887.06	3887	123.03	123.22	-0.19
BLACKCREEK_DIGI 3960.11	3960	122.895	122.84	0.055
BLACKCREEK_DIGI 4091.46	4091	122.577	122.6	-0.023
BLACKCREEK_DIGI 4211.89	4211	122.274	122.06	0.214
BLACKCREEK_DIGI 4319.65	4319	122.267	122.06	0.207
BLACKCREEK_DIGI 4403.36	4403	121.94	121.99	-0.05
BLACKCREEK_DIGI 4464.54	4464	121.762	121.56	0.202
BLACKCREEK_DIGI 4597.99	4597	119.886	119.87	0.016
BLACKCREEK_DIGI 4643.8	4643	119.513	119.65	-0.137
BLACKCREEK_DIGI 4691.81	4691	119.396	119.65	-0.254
BLACKCREEK_DIGI 4884.18	4884	118.349	118	0.349
BLACKCREEK_DIGI 4955.8	4955	118.199	118	0.199
BLACKCREEK_DIGI 5015.82	5015	118.128	118	0.128
BLACKCREEK_DIGI 5120.05	5120	118.034	118.08	-0.046

APPENDIX 'B'

Updated Existing Conditions Hydraulic Model (Mike Flood) Results

Floodplain Mapping in Jane and Wilson Special Policy Area, Black Creek
Toronto and Region Conservation Authority

Appendix 'B' Contents:

LEGEND

- 2D Model Extent
- LiDAR Extent
- River Network
- Culvert / Bridge C1, C2, ... C16
- Buildings

Flood Depth, m

- 0.00 - 0.05
- 0.05 - 0.10
- 0.10 - 0.20
- 0.20 - 0.30
- 0.30 - 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- 2.00 - 3.00
- 3.00 - 4.00
- 4.00 - 5.00
- 5.00 - Above

MAP 2.1

REGIONAL FLOOD DEPTH MAP

STEADY PEAK INFLOW HYDROGRAPH (HURRICANE HAZEL)

200 100 0 200 Meters

1:4,000

12 December 2016

N

TORONTO AND REGION CONSERVATION

JANE-WILSON 2D FLOOD MODELLING STUDY

Toronto and Region Conservation for The Living City

Est. 1992 VALDOR

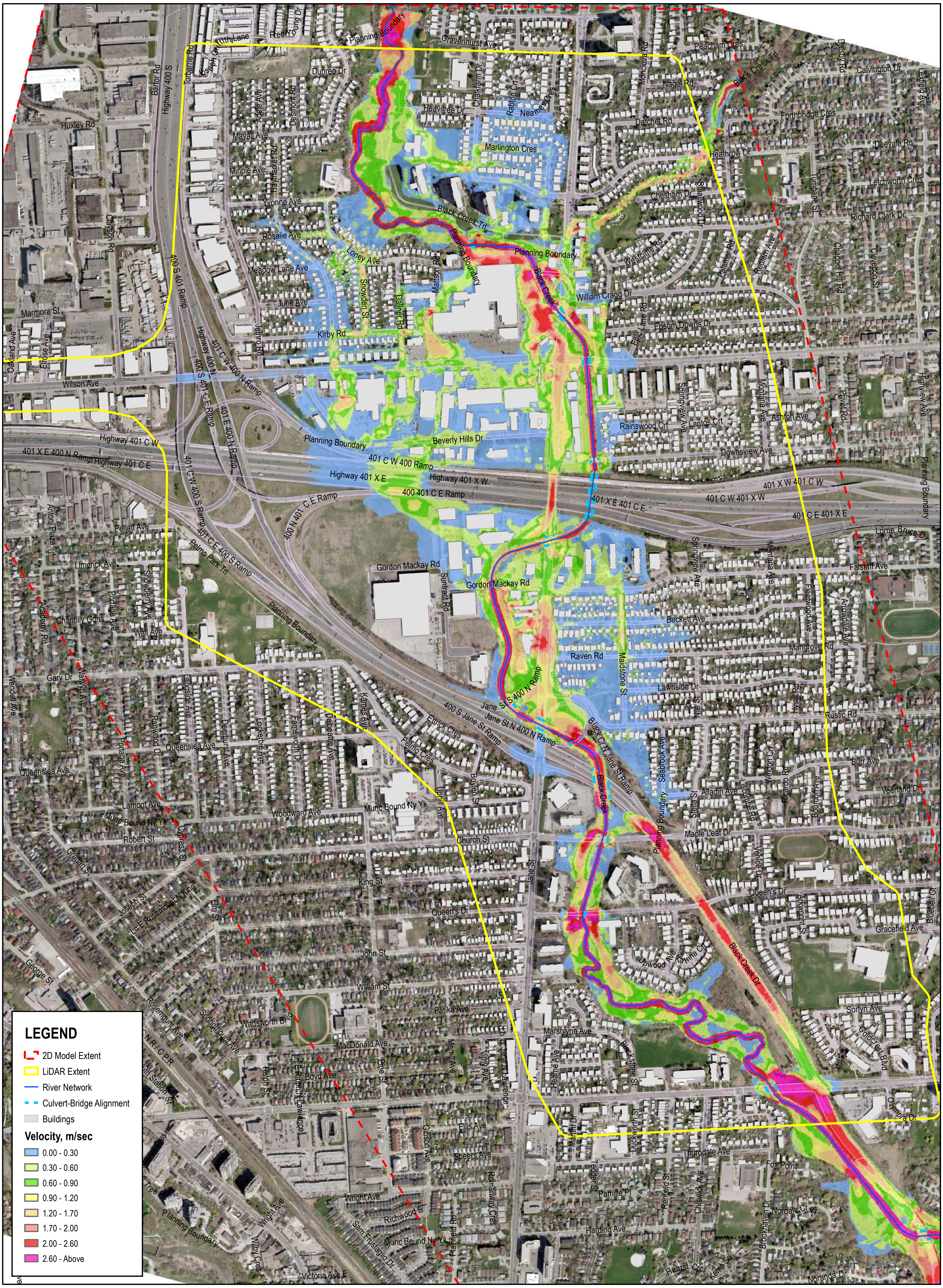


FIGURE B.1

REGIONAL FLOOD VELOCITY MAP

STEADY PEAK INFLOW HYDROGRAPH
(HURRICANE HAZEL)

250 125 0 250 Meters

1:10,000

12 December 2016

N

TORONTO AND REGION CONSERVATION

JANE-WILSON 2D FLOOD MODELLING STUDY

Toronto and Region Conservation for The Living City

Est. 1992 VALDOR

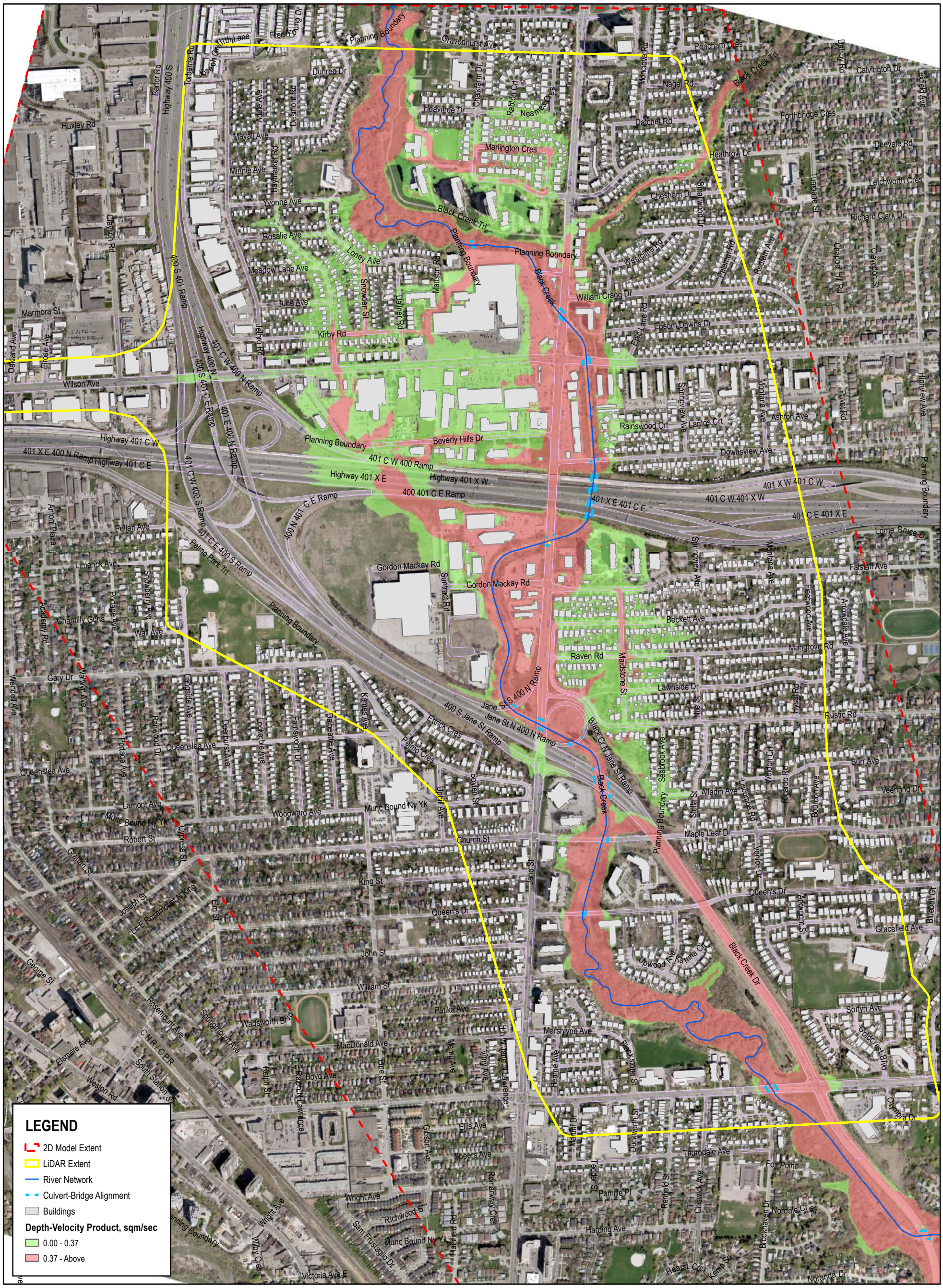


FIGURE B.2

REGIONAL DEPTH-VELOCITY PRODUCT MAP

STEADY PEAK INFLOW HYDROGRAPH
(HURRICANE HAZEL)

250 125 0 250 Meters

1:10,000

12 December 2016

N

TORONTO AND REGION CONSERVATION

JANE-WILSON 2D FLOOD MODELLING STUDY

Toronto and Region Conservation *for The Living City*

Est. 1992 VALDOR

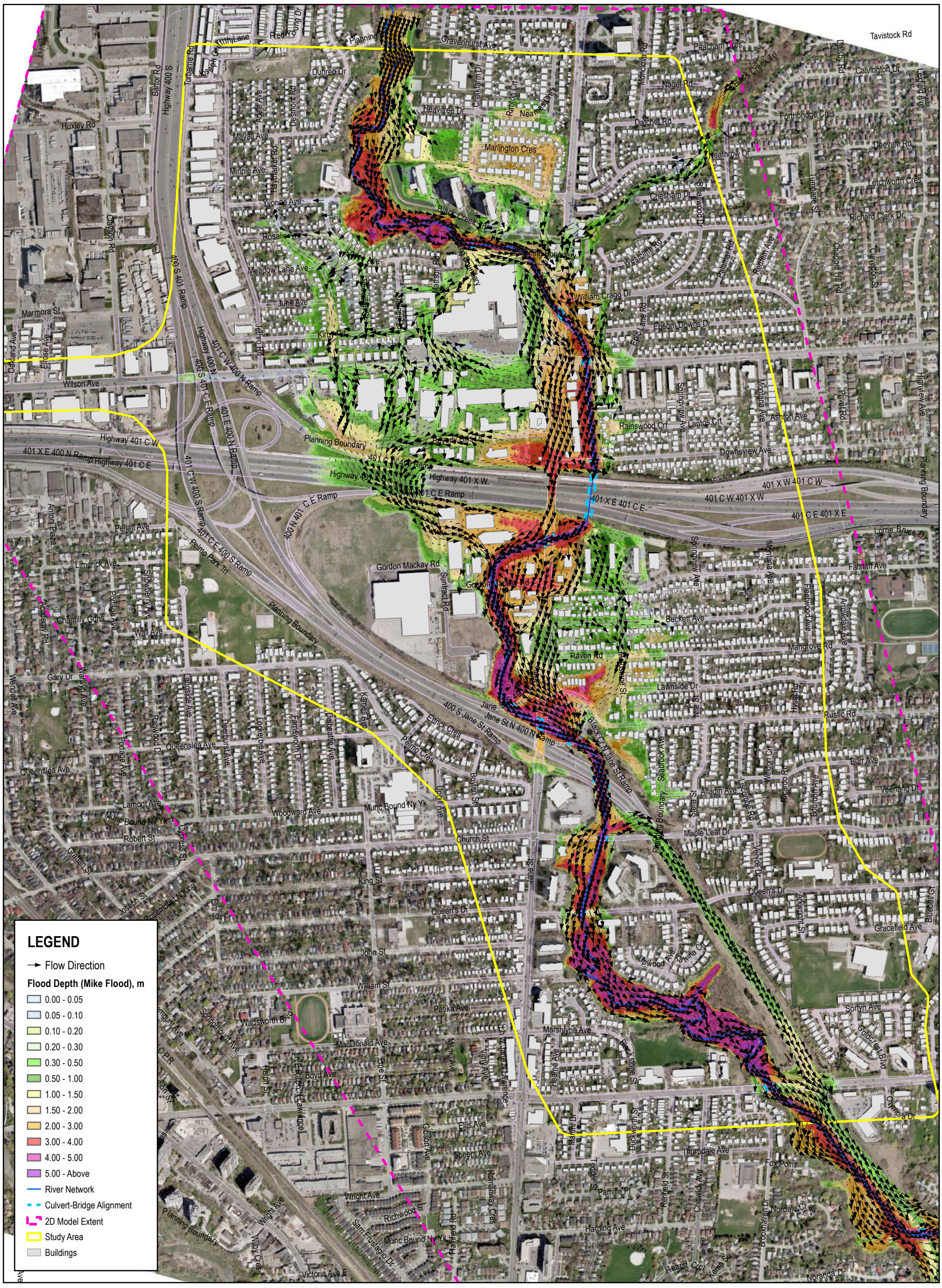


FIGURE B.3

REGIONAL FLOW DIRECTION MAP

(HURRICANE HAZEL)

250 125 0 250 Meters

1:10,000

15 October 2016

N

TORONTO AND REGION CONSERVATION

JANE-WILSON 2D FLOOD MODELLING STUDY

Toronto and Region Conservation for The Living City

Est. 1992 VALDOR

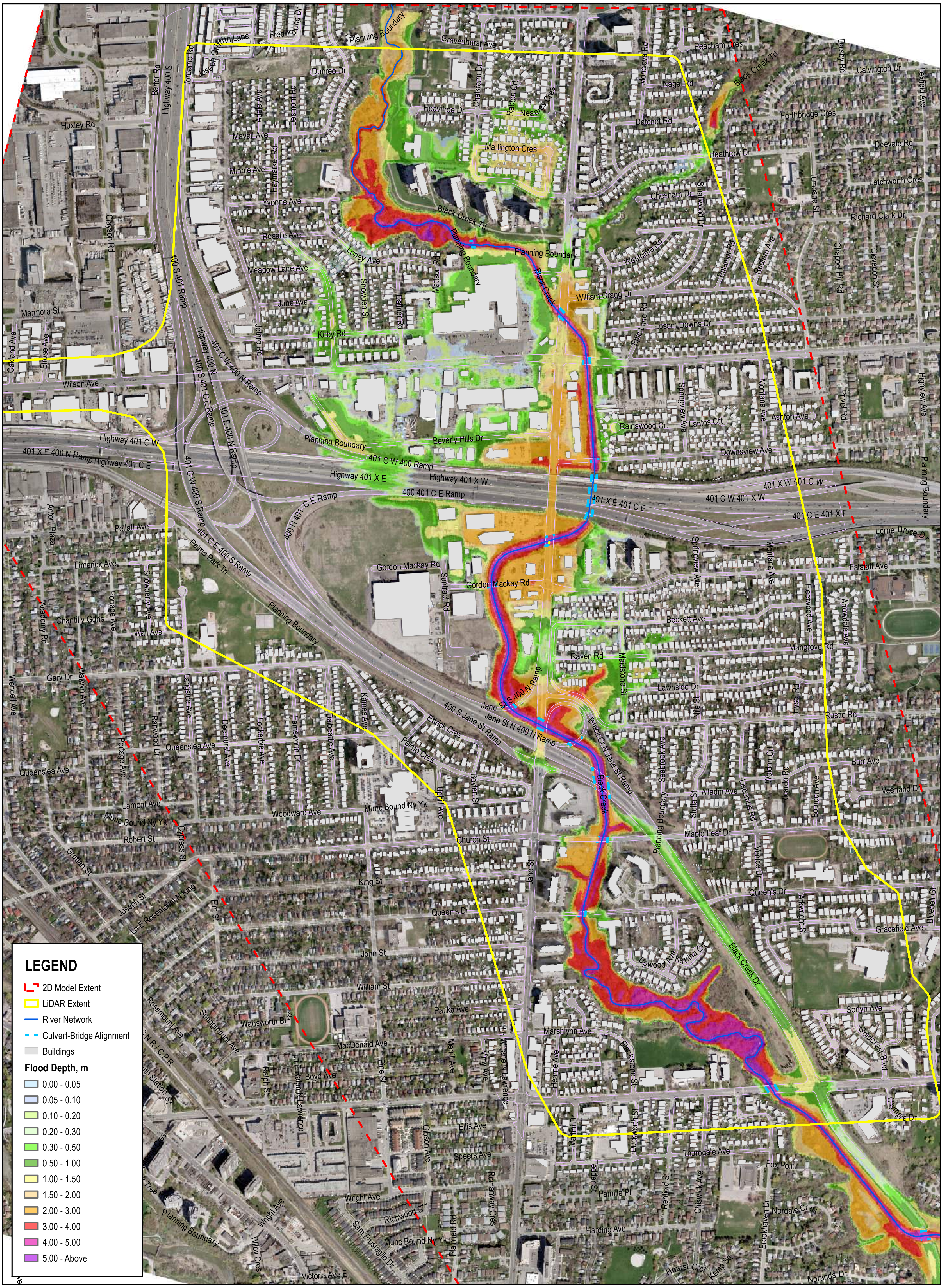


FIGURE B.4

350 - YR FLOOD DEPTH MAP

STEADY PEAK INFLOW HYDROGRAPH
(350 - YEAR STORM)

250 125 0 250 Meters

1:10,000
12 December 2016

N

TORONTO AND REGION CONSERVATION

JANE-WILSON 2D FLOOD MODELLING STUDY

Toronto and Region Conservation for The Living City

Est. 1992 VALDOR

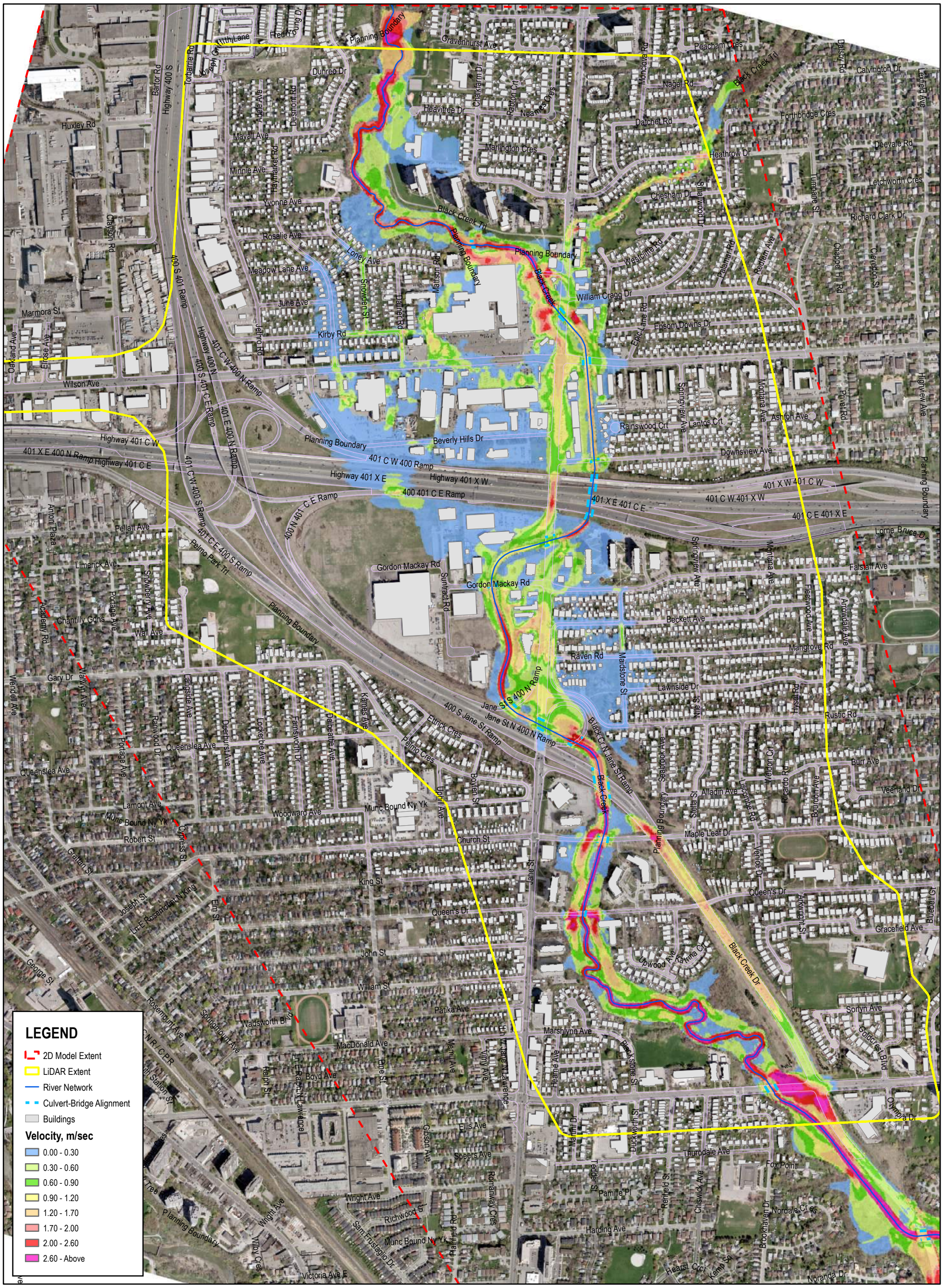


FIGURE B.5

350 - YR FLOOD VELOCITY MAP

STEADY PEAK INFLOW HYDROGRAPH
(350 - YEAR STORM)

250 125 0 250 Meters

1:10,000

12 December 2016

N

TORONTO AND REGION CONSERVATION

JANE-WILSON 2D FLOOD MODELLING STUDY

Toronto and Region Conservation *for The Living City*

Est. 1992 VALDOR

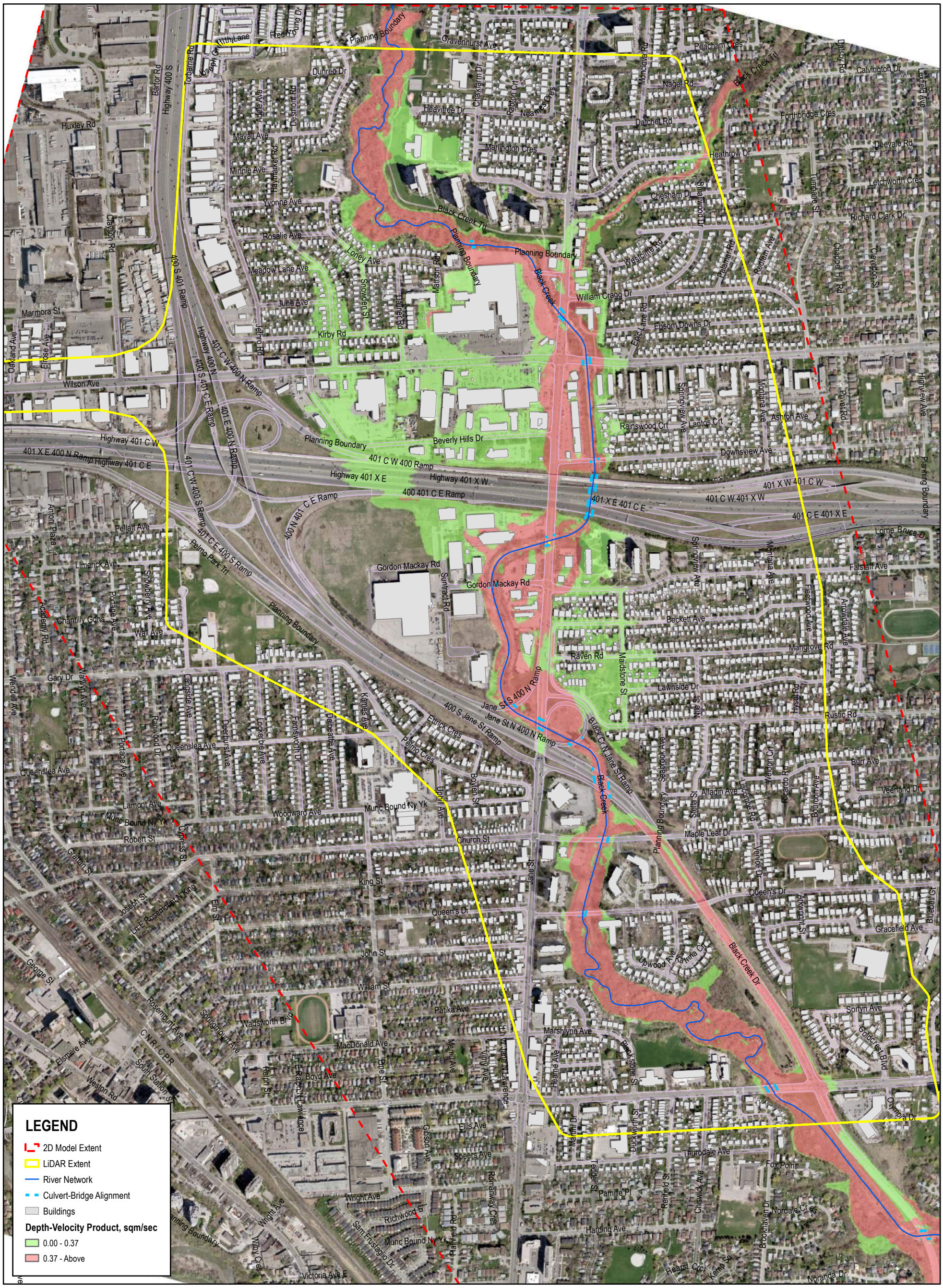


FIGURE B.6

350 - YR DEPTH-VELOCITY PRODUCT MAP

STEADY PEAK INFLOW HYDROGRAPH
(350 - YEAR STORM)

250 125 0 250 Meters

1:10,000

12 December 2016

N

TORONTO AND REGION CONSERVATION

JANE-WILSON 2D FLOOD MODELLING STUDY

Toronto and Region Conservation *for The Living City*

Est. 1992 VALDOR

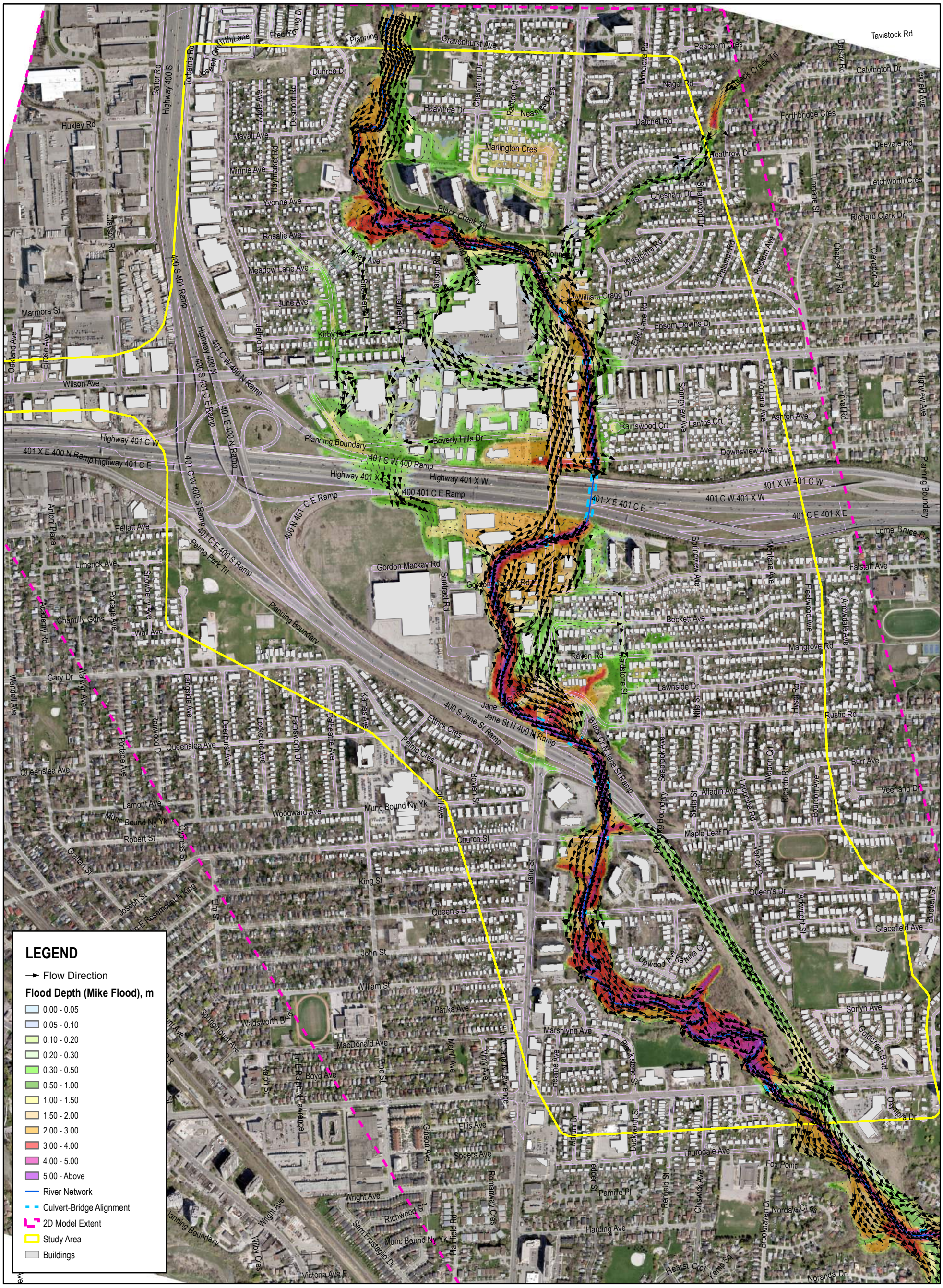


FIGURE B.7

350 - YR FLOW DIRECTION MAP

(350 - YEAR STORM)

250 125 0 250 Meters

1:10,000

15 October 2016

N

TORONTO AND REGION CONSERVATION

JANE-WILSON 2D FLOOD MODELLING STUDY

Toronto and Region Conservation for The Living City

Est. 1992 VALDOR

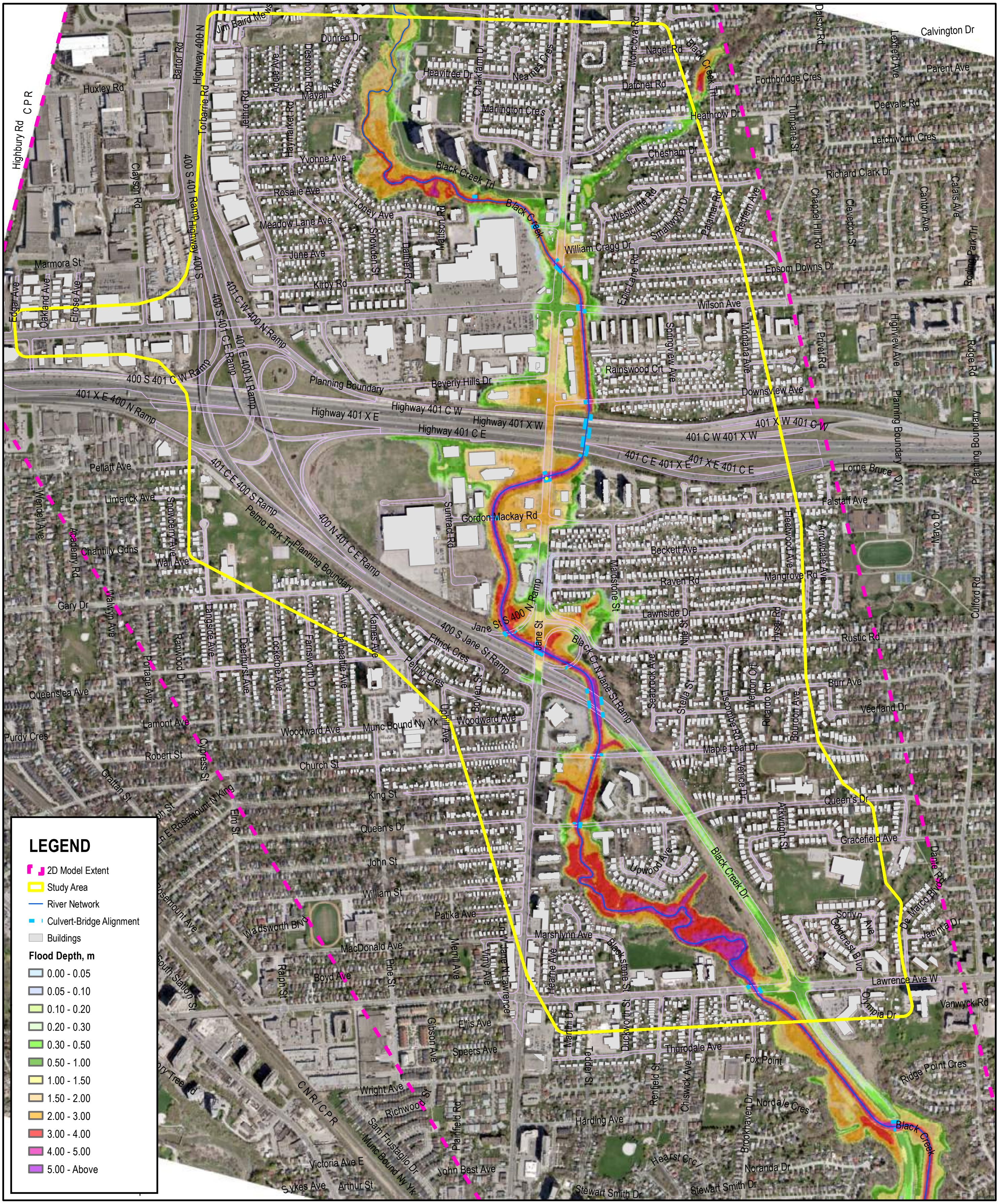


FIGURE B.8

100 - YR FLOOD DEPTH MAP

(100 - YEAR STORM)

250 125 0 250 Meters

1:15,000

28 November 2016

N

TORONTO AND REGION CONSERVATION

JANE-WILSON 2D FLOOD MODELLING STUDY

Toronto and Region Conservation for The Living City

Est. 1992 VALDOR

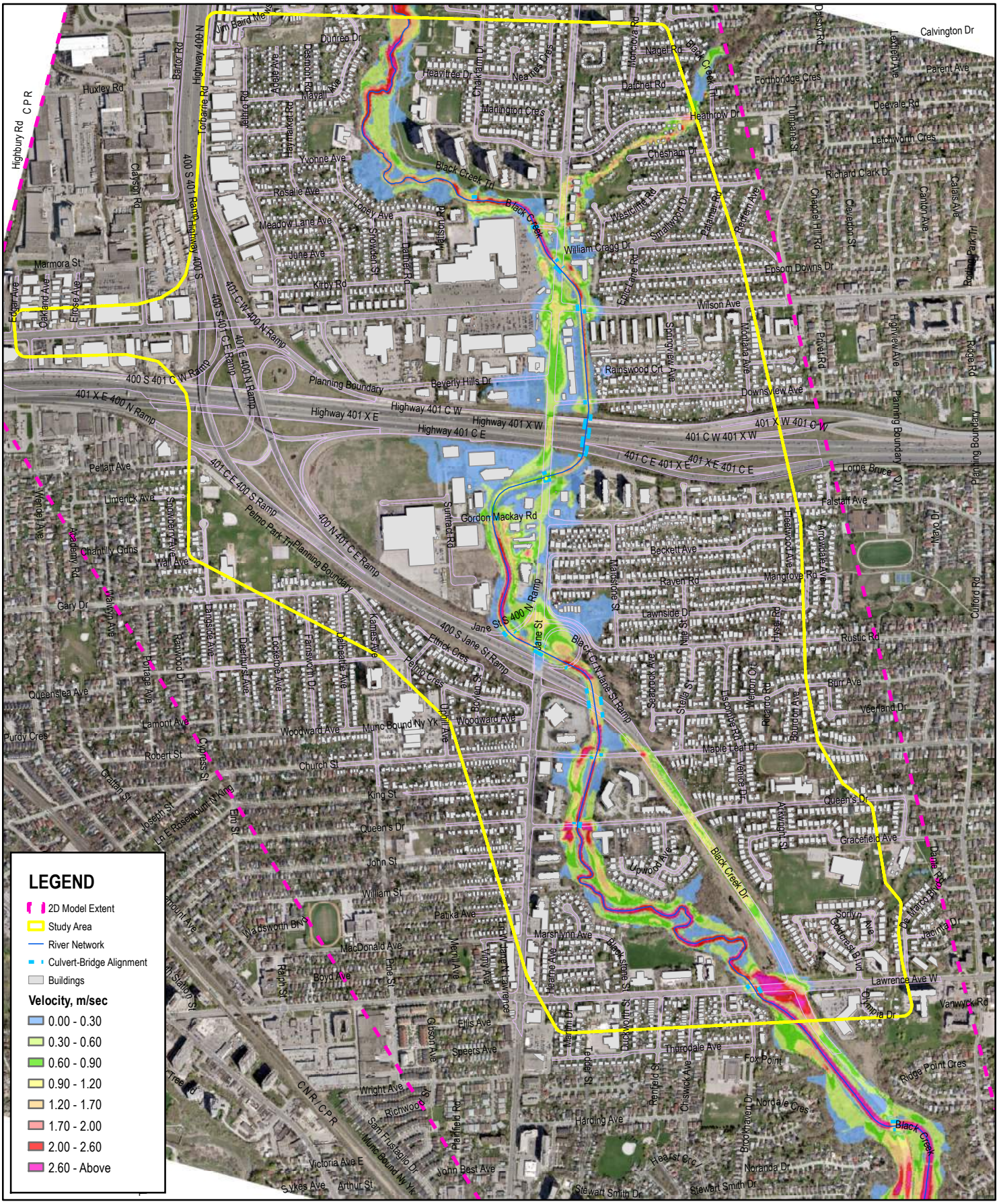


FIGURE B.9

100 - YR FLOOD VELOCITY MAP

(100 - YEAR STORM)

250 125 0 250 Meters

1:15,000

28 November 2016

N

TORONTO AND REGION CONSERVATION

JANE-WILSON 2D FLOOD MODELLING STUDY

Toronto and Region Conservation for The Living City

Est. 1992 VALDOR

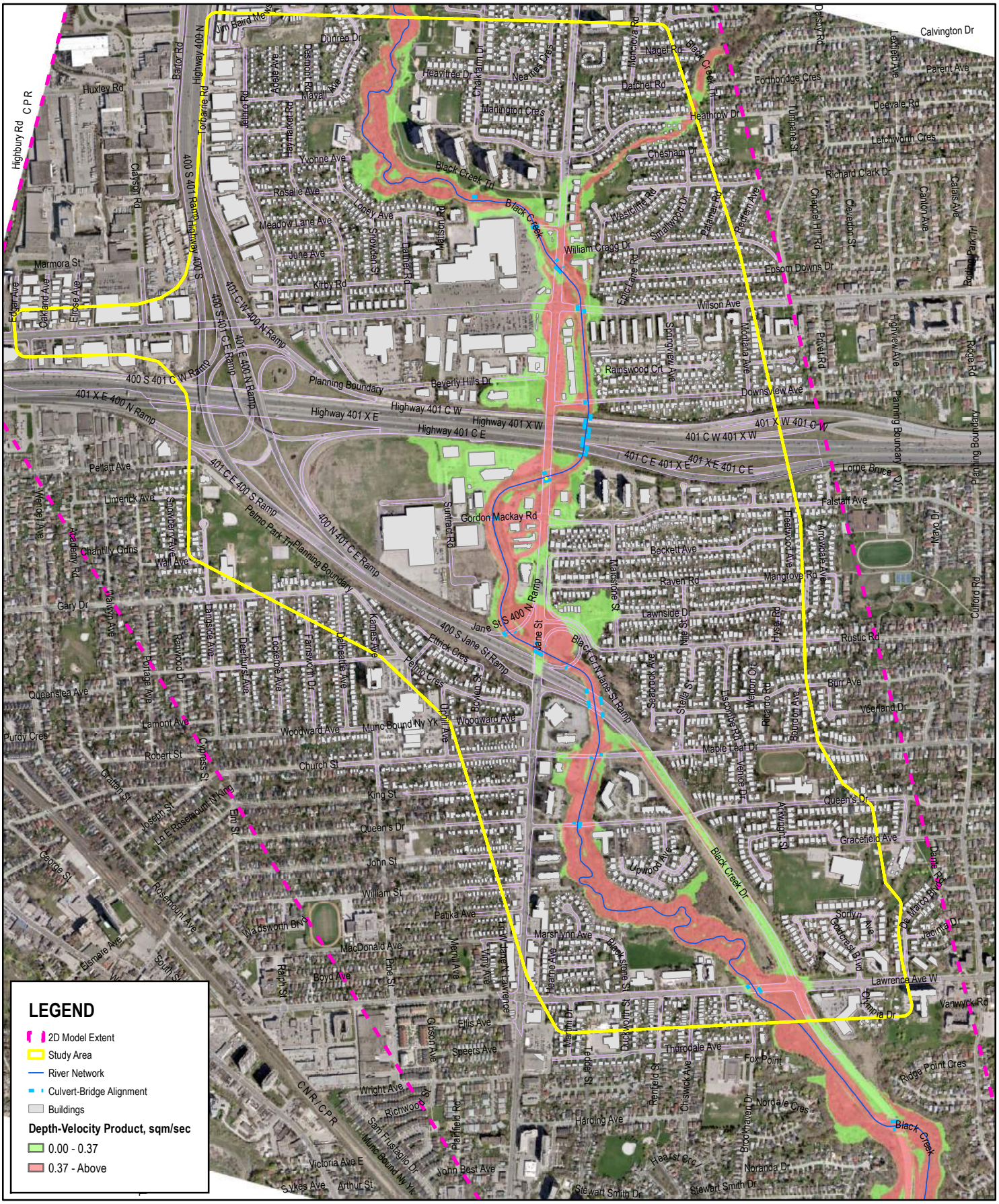


FIGURE B.10

100 - YR DEPTH-VELOCITY PRODUCT MAP

(100 - YEAR STORM)

250 125 0 250 Meters

1:15,000

28 November 2016

N

TORONTO AND REGION CONSERVATION

JANE-WILSON 2D FLOOD MODELLING STUDY

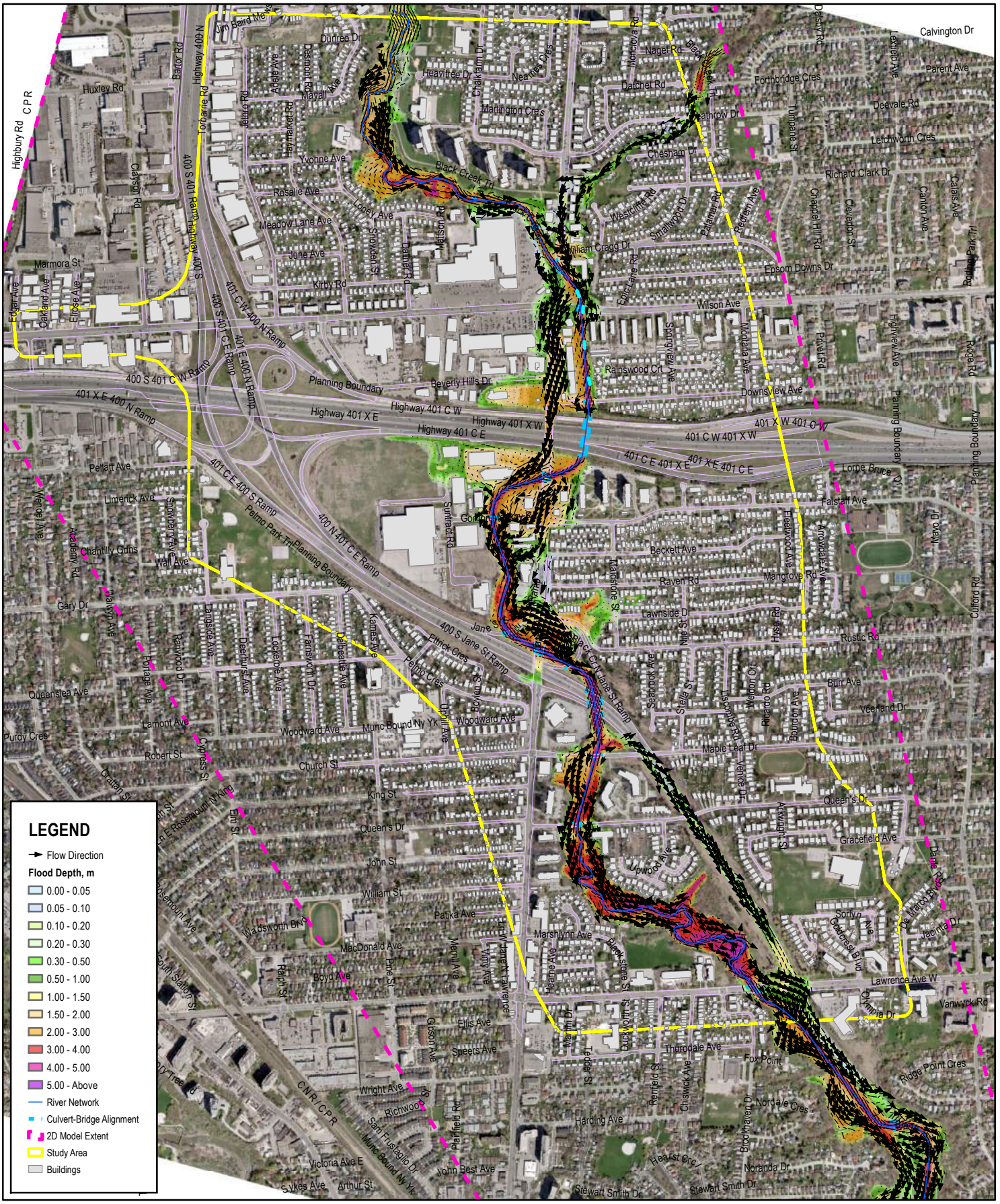


FIGURE B.11

100 - YR FLOW DIRECTION MAP

(100 - YEAR STORM)

250 125 0 250 Meters

1:15,000

28 November 2016

N

TORONTO AND REGION CONSERVATION

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Toronto and Region Conservation for The Living City

Est. 1992 VALDOR

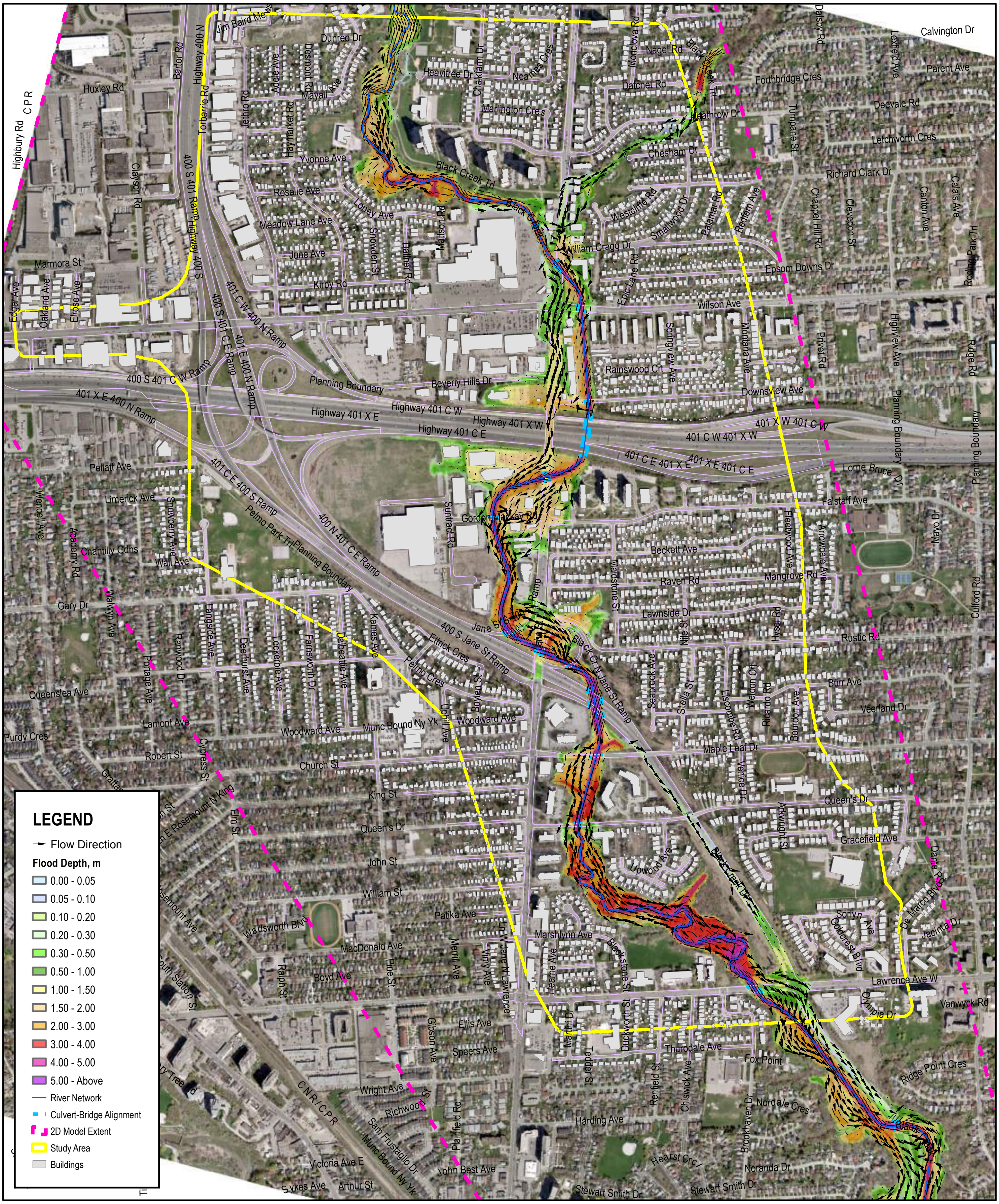

FIGURE B.12

50 - YR FLOW DIRECTION MAP

(50 - YEAR STORM)

250 125 0 250 Meters

1:15,000

02 December 2016

N

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Toronto and Region Conservation for The Living City

Est. 1992 VALDOR

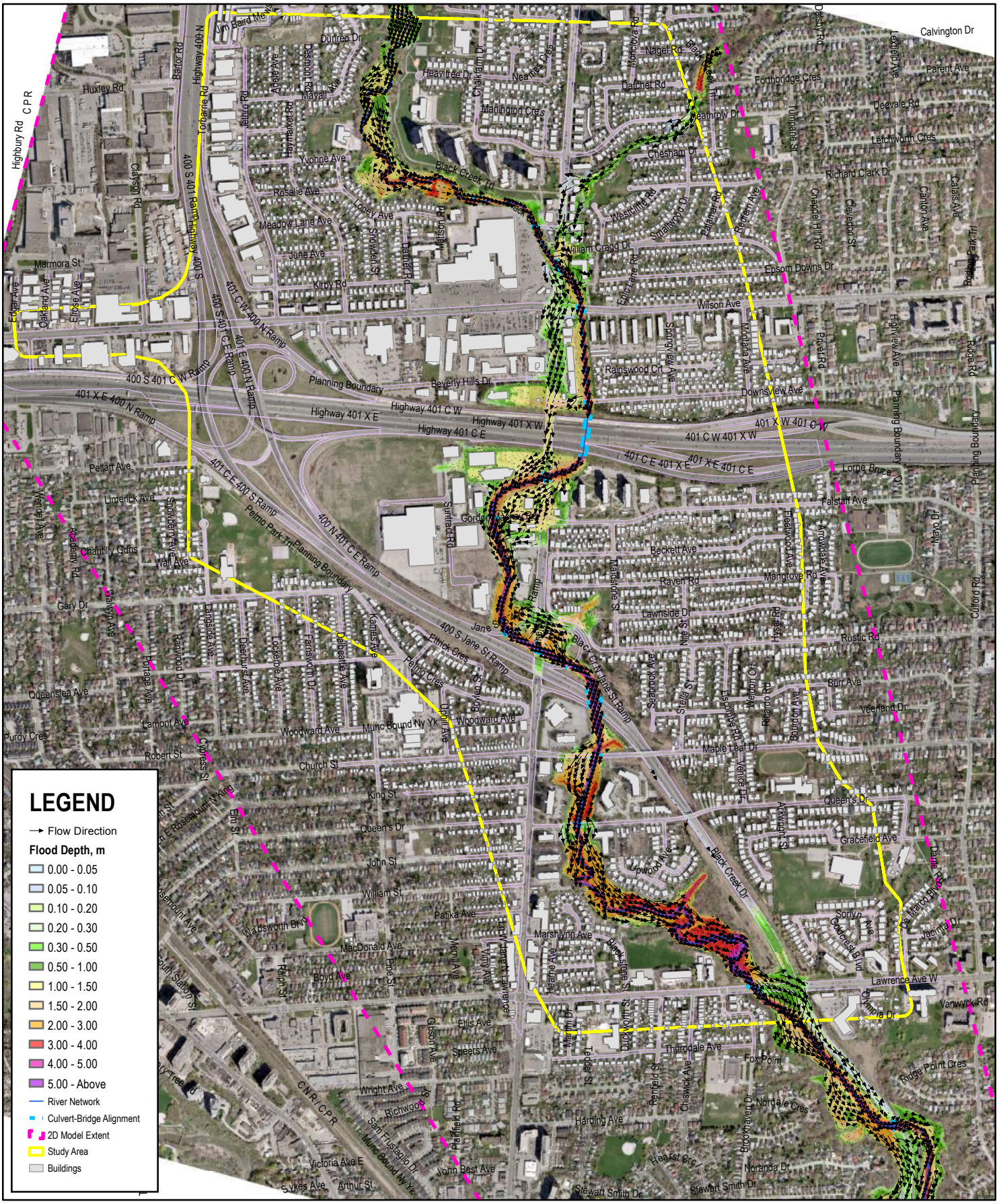

FIGURE B.13

25 - YR FLOW DIRECTION MAP

(25 - YEAR STORM)

250 125 0 250 Meters

1:15,000

03 December 2016

N

TORONTO AND REGION CONSERVATION

JANE-WILSON 2D FLOOD MODELLING STUDY

Toronto and Region Conservation for The Living City

Est. 1992 VALDOR

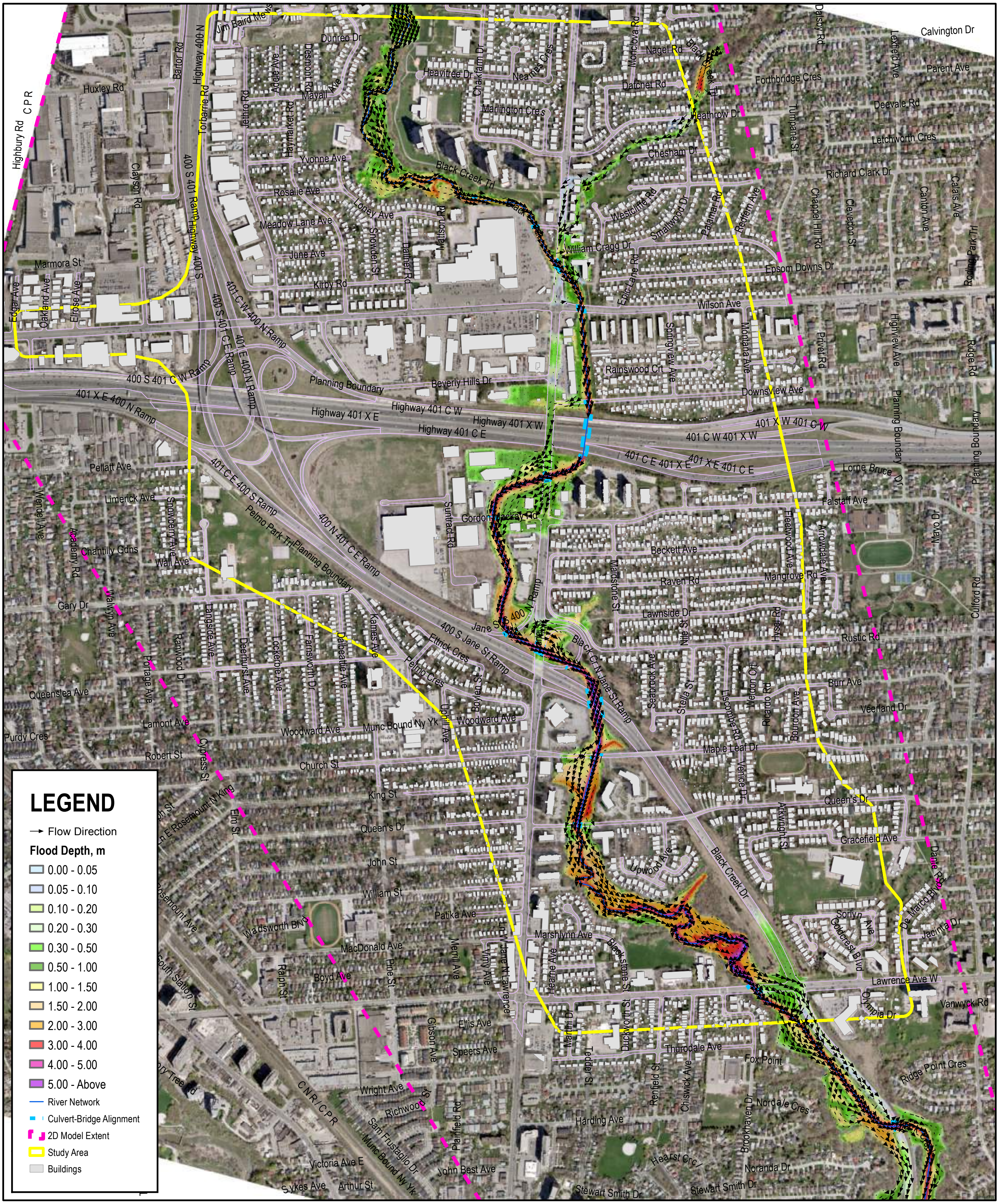

FIGURE B.14

10 - YR FLOW DIRECTION MAP

(10 - YEAR STORM)

250 125 0 250 Meters

1:15,000

04 December 2016

N

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Toronto and Region Conservation for The Living City

Est. 1992 VALDOR

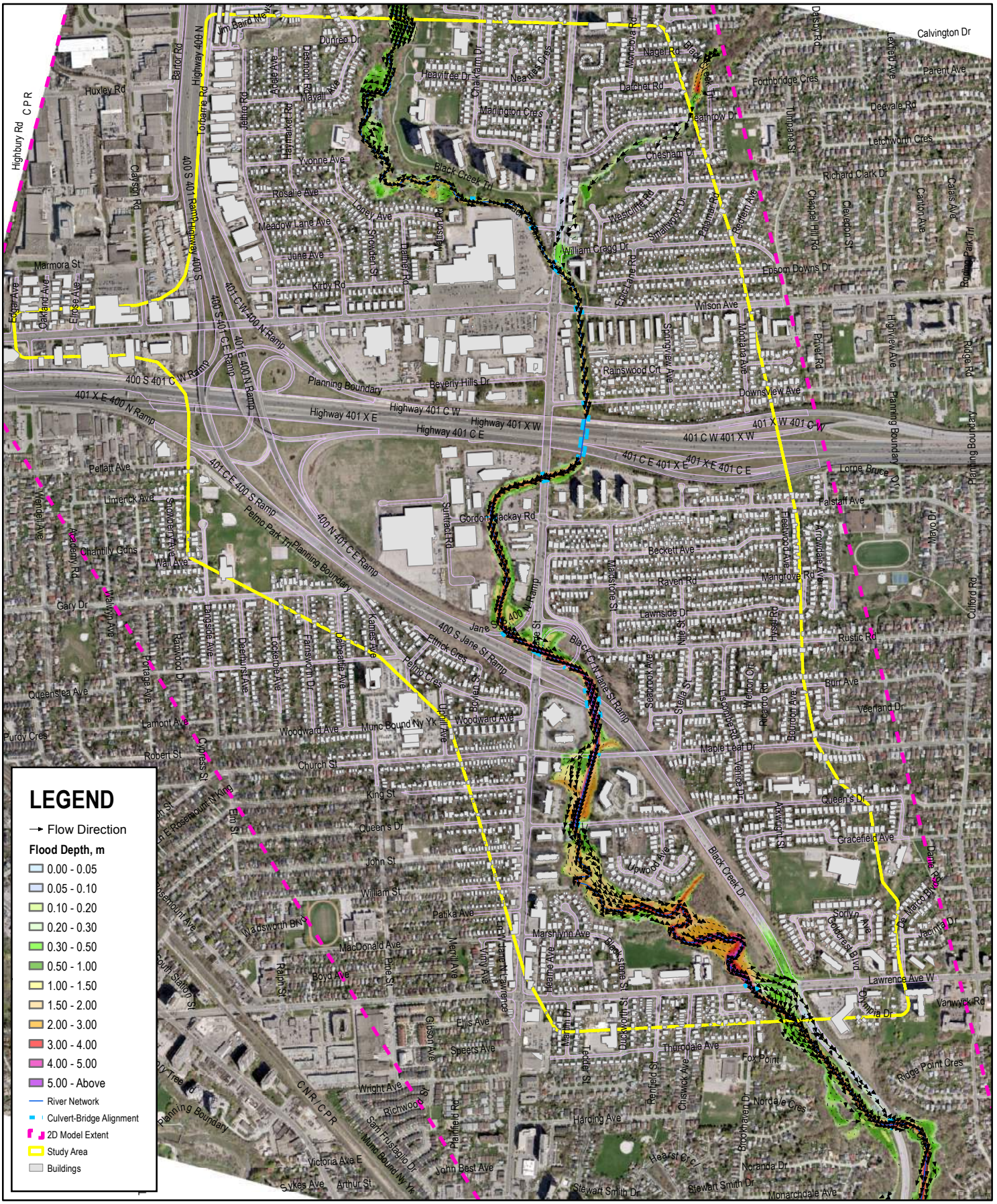


FIGURE B.15

5 - YR FLOW DIRECTION MAP

(5 - YEAR STORM)

250 125 0 250 Meters

1:15,000

05 December 2016

N

TORONTO AND REGION CONSERVATION

JANE-WILSON 2D FLOOD MODELLING STUDY

Toronto and Region Conservation for The Living City

Est. 1992 VALDOR

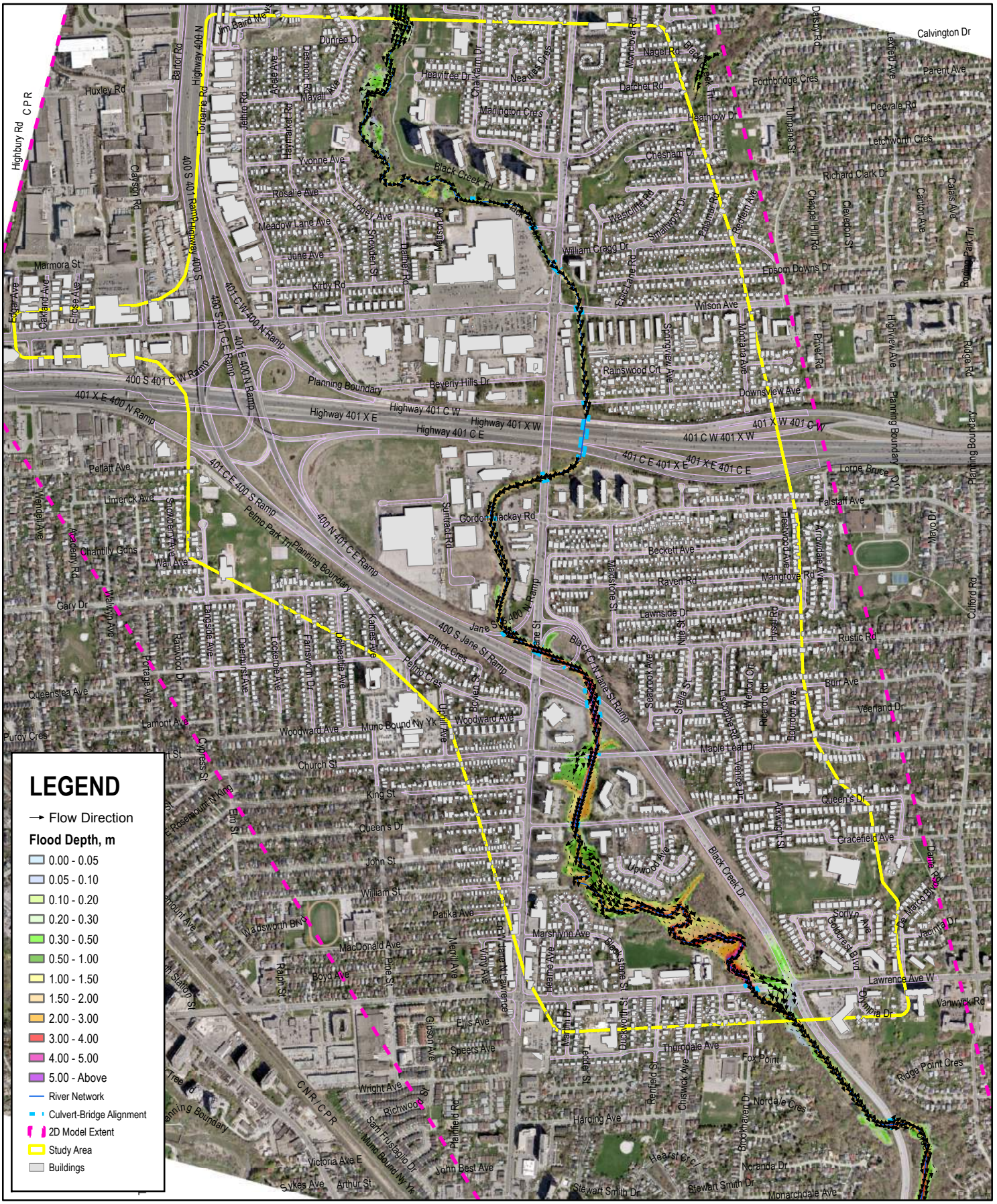


FIGURE B.16

2 - YR FLOW DIRECTION MAP

(2 - YEAR STORM)

250 125 0 250 Meters

1:15,000

06 December 2016

N

TORONTO AND REGION CONSERVATION

JANE-WILSON 2D FLOOD MODELLING STUDY

Toronto and Region Conservation for The Living City

Est. 1992 VALDOR

APPENDIX ‘C’

Updated Floodplain Map Sheets

Floodplain Mapping in Jane and Wilson Special Policy Area, Black Creek
Toronto and Region Conservation Authority

Appendix ‘C’ Contents:

REVISIONS

NO.	DESCRIPTION	BY	DATE

NOTE:
For further information related to the hydraulic model development, and associated results please consult "Floodplain Mapping in Jane and Wilson Special Policy Area, Black Creek", 2016, by Valdor Engineering Inc., TRCA CFN 53286.

NOTE:
Floodline derived using Mike Flood 2D modelling software.
Water surface elevations available – please contact TRCA Water Resources Group for further information.

LEGEND

Contour Index
Contour Intermediate
Contour Auxiliary
Contour Depression
Contour Text
Spot Height
Road
Parking Lot
Race Track
Wall
Retaining Wall
Rail Line
Runway
Silo, Smoke, Tank
Marsh Symbol
Marsh Boundary
Township Fabric
Hydro Tower
Trail
Walkway
Bridge
Wooded Area
Tree
Hedge
Fence
Water Feature
Culvert Symbol
Culvert to Scale
Dam
Pool
Building
Pit
Pile
Regulatory Flood Line

The contour data on this map was produced by TRCA from a DEM with 0.5 m grid resolution. The DEM was created from LiDAR data flown in November 2012, with a vertical accuracy tolerance of +/- 0.05m RMSE.
The planimetric data was compiled by First Base Solutions from aerial photography flown in 2006. Planimetric data south of Queens Dr. from City of Toronto - 1997. Building footprints were updated using 2013 imagery where necessary.
The vertical datum is mean sea level as established by the GSCVD 28, 1978 Southern Ontario Adjustment.
North American Datum 1983, U.T.M. 6° projection Zone 17, Central Meridian 81° W.
Grid Interval 100 metres.

PLEASE NOTE:
FLOODLINE ELEVATIONS ARE SUBJECT TO CHANGE DUE TO REVISED INFORMATION.

PLEASE NOTE:
The digital elevation model and the hydrology breakline used in this map were compiled under the supervision of a qualified Survey Engineer and hydraulic and hydrologic engineers from Airborne Imaging and 4DM.

AIRBORNE IMAGING
A Clean Harbors Company

VALDOR ENGINEERING INC.
Consulting Engineers - Project Managers
741 ROWNTREE DAIRY ROAD, SUITE 2, WOODBRIDGE, ONTARIO, L4L 5T9
TEL (905)264-0054, FAX (905)264-0069
E-MAIL: info@valdor-engineering.com
www.valdor-engineering.com

PLEASE NOTE:
THE PROFESSIONAL ENGINEER'S STAMP VERIFIES THE FLOOD LINE AND ASSOCIATED DATA NOT THE MAP DATA UNLESS OTHERWISE NOTED

LICENSED PROFESSIONAL ENGINEER
W. L. P. COFFEY
PROVINCE OF ONTARIO
08 Sep 16

FLOOD PLAIN MAPPING PROGRAM

FLOODLINE APPROVED DATE: ____________

Toronto and Region **Conservation** *for* The Living City

5 Shoreham Drive Downsview Ontario M3N 1S4 (416) 661-6600

Scale 1:2000

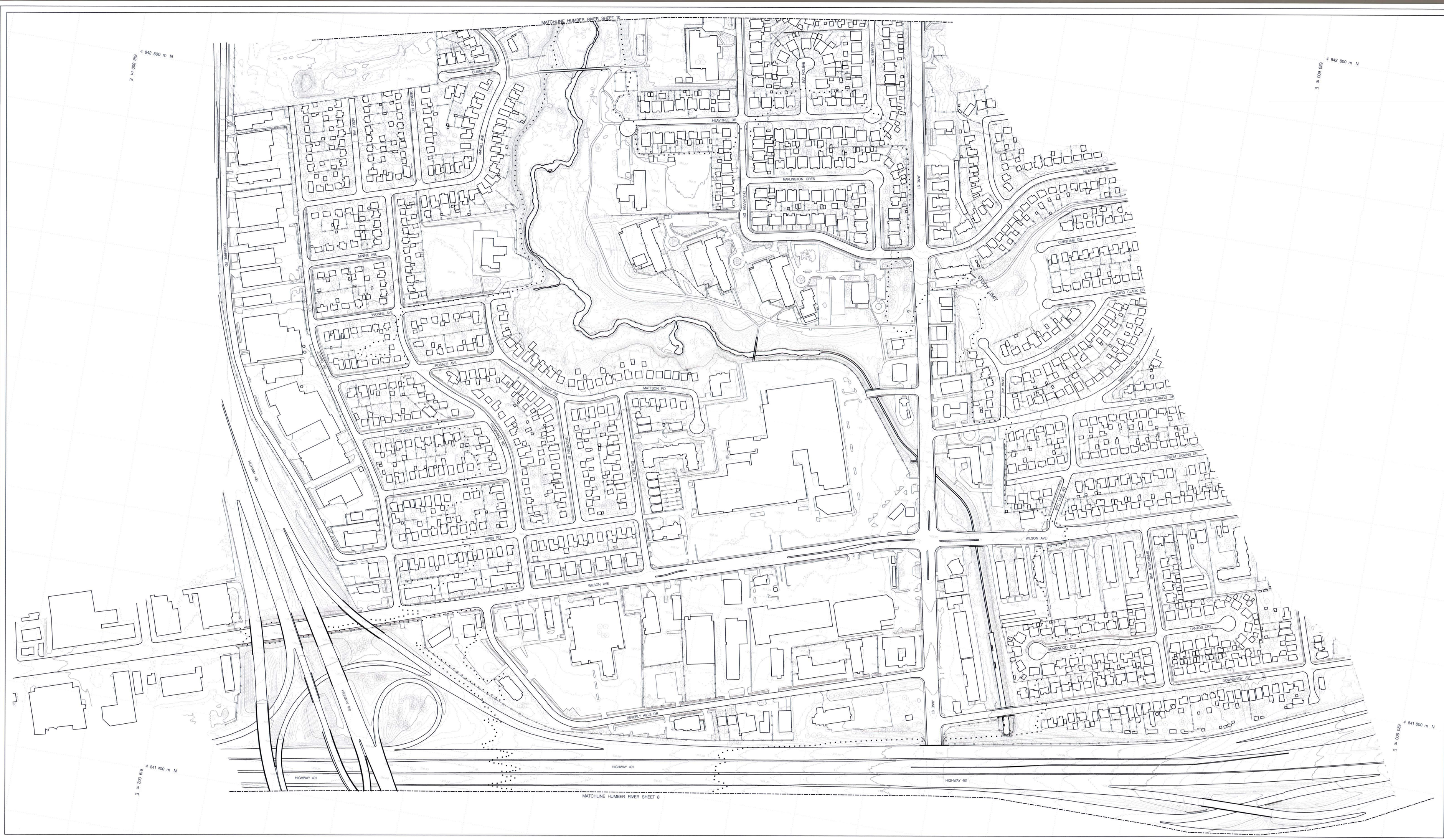
Metres 100 0 100 200 Metres

Feet 200 0 200 400 600 800 1000 Feet

CONTOUR INTERVAL 0.5 METRES:

HUMBER RIVER

SHEET No. 8



REVISIONS

NO.	DESCRIPTION	BY	DATE

NOTE:
For further information related to the hydraulic model development, and associated results please consult "Floodplain Mapping in Jane and Wilson Special Policy Area, Black Creek", 2016, by Valdor Engineering Inc., TRCA CFN 53286.

NOTE:
Floodline derived using Mike Flood 2D modelling software.
Water surface elevations available – please contact TRCA Water Resources Group for further information.

LEGEND

- Contour Index
- Contour Intermediate
- Contour Auxiliary
- Contour Depression
- Contour Text
- Spot Height
- Road
- Parking Lot
- Race Track
- Wall
- Retaining Wall
- Rail Line
- Runway
- Silo, Smoke, Tank
- Marsh Symbol
- Marsh Boundary
- Township Fabric
- Hydro Tower
- Trail
- Walkway
- Bridge
- Wooded Area
- Tree
- Hedge
- Fence
- Water Feature
- Culvert Symbol
- Culvert to Scale
- Dam
- Pool
- Building
- Pit
- Pile
- Regulatory Flood Line

The contour data on this map was produced by TRCA from a DEM with 0.5 m grid resolution. The DEM was created from LiDAR data flown in November 2012, with a vertical accuracy tolerance of +/- 0.05m RMSE.

The planimetric data was compiled by First Base Solutions from aerial photography flown in 2006. Building footprints were updated using 2013 imagery where necessary.

The vertical datum is mean sea level as established by the CGCV0 28, 1978 Southern Ontario Adjustment.

North American Datum 1983, U.T.M. 6° projection Zone 17, Central Meridian 81° W.

Grid Interval 100 metres.

PLEASE NOTE:
FLOODLINE ELEVATIONS ARE SUBJECT TO CHANGE DUE TO REVISED INFORMATION.

PLEASE NOTE:
The digital elevation model and the hydrology breakline used in this map were completed under the supervision of a qualified Survey Engineer and hydraulic and hydrologic engineers from Airborne Imaging and 4DM.

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741 RONNTREE DAIRY ROAD, SUITE 2, WOODBRIDGE, ONTARIO, L4L 5T9
TEL (905)264-0054, FAX (905)264-0059
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www.valdor-engineering.com

LICENSED PROFESSIONAL ENGINEER
08 Sept 16
W. J. P. COFFEY
PROVINCE OF ONTARIO

PLEASE NOTE:
THE PROFESSIONAL ENGINEER'S STAMP VERIFIES THE FLOOD PLAIN MAPPING AND RELATED DATA NOT THE MAP DATA UNLESS OTHERWISE NOTED

FLOOD PLAIN MAPPING PROGRAM

FLOODLINE APPROVED DATE: _____

Toronto and Region Conservation
for The Living City
5 Shoreham Drive Downsview Ontario M3N 1S4 (416) 661-6600

Scale 1:2000

100 0 100 200 Metres

200 0 200 400 600 800 1000 Feet

CONTOUR INTERVAL 0.5 METRES:

HUMBER RIVER

SHEET No. 9

APPENDIX ‘D’

Flood Risk Characterization Mapping

Floodplain Mapping in Jane and Wilson Special Policy Area, Black Creek
Toronto and Region Conservation Authority

Appendix ‘D’ Contents:

LEGEND

- 2D Model Extent
- LiDAR DEM Extent
- Fire Station
- Vulnerable Population
- School
- River Network

Flood Risk Level

Low	Vehicular and Pedestrian Access/Egress is Available (Depth < 0.30 m)
Moderate	Pedestrian Access/Egress Only Available (Product of Depth and Velocity less than or equal to 0.37 m2/s with max. Depth of 0.80 m and Velocity of 1.70 m/s)
High	Product of Depth and Velocity > 0.37 m2/s or Depth > 0.80 m or Velocity > 1.70 m/s

MAP 5.1

REGIONAL FLOOD RISK LEVEL MAP

STEADY PEAK INFLOW HYDROGRAPH
(HURRICANE HAZEL)

200 100 0 200 Meters

1:4,000

12 December 2016

N

TORONTO AND REGION CONSERVATION

JANE-WILSON 2D FLOOD MODELLING STUDY

Toronto and Region Conservation for The Living City

Est. 1992 VALDOR