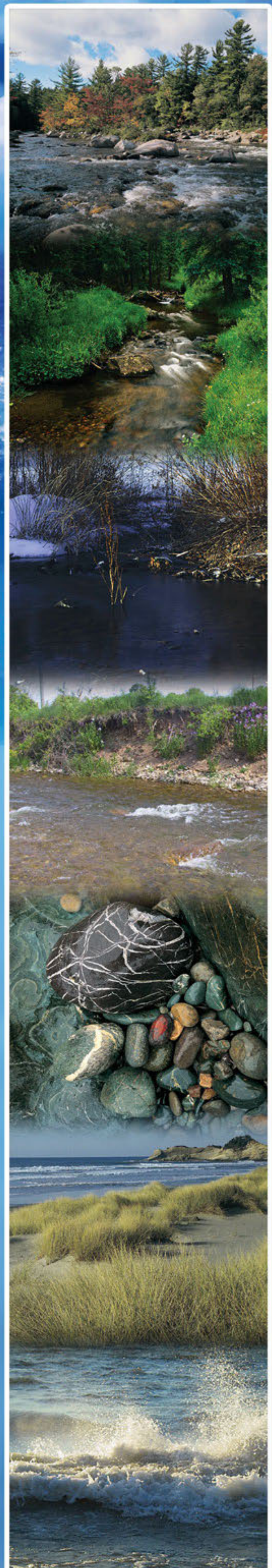

water's edge
ENVIRONMENTAL SOLUTIONS TEAM LTD.

North Bay-Mattawa Conservation Authority

Lansdowne Creek Floodplain Mapping Project

Final Report

May 16, 2025

May 16,2025
WE 23016

Mr. David Ellingwood
Director, Water Resources

North Bay-Mattawa Conservation Authority
15 Janey Avenue
North Bay, ON
P1C 1N1

Dear Mr. Ellingwood:

RE: Lansdowne Creek Floodplain Mapping Project – *Final Report*

1. Introduction

Water's Edge was authorized by the North Bay-Mattawa Conservation Authority (NBMCA) to conduct flood hazard mapping for Lansdowne Creek in the Town of Callander and the Municipality of East Ferris. This is a summary report of this mapping project, which was completed according to the RFP issued by NBMCA (dated February 27, 2023) and the proposal submitted by Water's Edge, dated March 17, 2023.

2. Streams Mapped

The following watercourses were included in this project:

- Lansdowne Creek – 1.5 km
- Tributary 1 – 1.2 km
- Tributary 2 – 0.9 km
- Tributary 3 – 0.5 km
-

3. Guidelines Followed

The floodplain mapping was done in accordance with the following Provincial and Federal guidelines:

MNR (2002). Technical Guide – River & Stream systems: Flooding Hazard Limit. Ontario Ministry of Natural Resources, Water Resources Section, Peterborough, Ontario, 2002.

Natural Resources Canada (2019). Federal Hydrologic and Hydraulic Procedures for Flood Hazard Version 1.0. Natural Resources Canada, 2019. (https://doi.org/10.4095/299808)

Conservation Ontario (2005). Guidelines for Developing Schedules of Regulated Areas. October 2005.

Moreover, the following documents were also consulted for general conformity:

MNR (1986). Flood Plain Management in Ontario – Technical Guidelines. Ontario Ministry of Natural Resources, Conservation Authorities and Water Management Branch, Toronto.

Natural Resources Canada (2019). Federal Geomatics Guidelines for Flood Mapping Version 1.0. Natural Resources Canada, 2019. (https://doi.org/10.4095/299810)

Natural Resources Canada (2022). Federal Airborne LiDAR Data Acquisition Guideline Version 3.1. Natural Resources Canada, 2022. (https://doi.org/10.4095/330330)

MMAH (2020). Provincial Policy Statement, 2020 – Under the Planning Act. Ontario Ministry of Municipal Affairs and Housing, Queen's Printer for Ontario, 28 February 2020. (https://files.ontario.ca/mmah-provincial-policy-statement-2020-accessible-final-en-2020-02-14.pdf)

For hydrologic and hydraulic modeling, we have followed the HEC-HMS and HEC-RAS Manuals unless otherwise stated.

4. Overview of the Project

The main three steps of floodplain mapping are (a) flow estimation, (b) flood level calculation, and (c) flood line plotting. For this project, we have estimated the flood flows via hydrologic modeling using the HEC-HMS model, calculated the flood levels via hydraulic modeling using the HEC-RAS model, and then plotted the flood lines against the LIDAR topography using RAS Mapper and GIS software.

The modeling was done for a total of nine (9) storm events: 2, 5, 10, 25, 50, 100, 200 and 500 year storm events; Timmins Storm.

It was found that the Regional or Timmins Storm produced higher flows and flood levels than the 100 year storm event. Therefore, Timmins Storm was taken as the governing flood event.

This summary report includes background information of the watershed, hydrologic modeling, hydraulic modeling, and floodplain delineation.

There is no existing flood hazard mapping for this creek.

A one-zone floodplain policy approach is assumed for this study. All models and mapping produced under this project were done on the one-zone policy approach.

5. Background Review and Data Collection

5.1 Information Collected and Reviewed

We have completed this project in accordance with the approved project Terms of Reference. We have collected and reviewed all available background materials and data. Specifically, it includes data sources for the analysis such as the following:

- Geospatial data: NBMCA
- LiDAR: GeoHub
- Soil data: Soil survey index (GeoHub)
- Landcover: Provincial Landcover Dataset
- IDF curves: Ontario Ministry of Transportation (MTO)
- Time of concentration: HEC-HMS manual/website
- Routing data: Muskingum-Cunge and Lag methods
- Watershed delineation: HEC-HMS
- Initial stream shapefile: OHN watercourse
- SCS curve number: Developed internally in HEC-HMS
- Impervious data: estimated based on mapping
- Site survey and field assessments (Water's Edge, 2023)
- Water level and flow data of Lansdowne Creek at (~20m D/S) Lansdowne St. – by Water's Edge, 2023
- Discussions with NBMCA

5.2 Datum

5.2.1 Vertical Datum:

All data was surveyed and modelled using CGVD2013 datum.

5.2.2 Horizontal Datum:

CSRS(NAD83) UTM Zone 17N was used for the horizontal datum/projection.

5.3 Structure and Cross-sections

A total of 31 road crossings (bridge/culvert) were surveyed by Water's Edge staff during the summer of 2023. Summary sheets, containing essential parameters and pictures, were compiled for all crossings (see Appendix C). We ensured that the collected information was sufficient for hydraulic modeling.

Many cross-sections of the creeks were also taken which supplemented the LiDAR in HEC-RAS to provide more accurate bathymetry at crossings. The point ESRI Shp. File was included with the submission.

5.4 Terrain Pre-processing

The following data was provided by NBMCA.

The NBMCA 2011 orthophotogrammetry has the following specifications:

- Ground resolution = 10 cm
- Spatial Reference = North American 1983 CSRS UTM Zone 17N
- Vertical Datum = CGVD28
- Units = metres

The MNDMNRF 2022 LiDAR has the following specifications (please refer to https://geohub.lio.gov.on.ca/maps/mnrf::ontario-digital-terrain-model-lidar-derived/about for the User Guide containing the complete specifications):

- Spatial Reference = NAD83(CSRS), Epoch 2010.00, UTM Zone 17N
- Vertical Datum = CGVD2013
- Units = metres

Upon examination of these two sets of data, it was found that LiDAR was more suitable for the present study.

The digital terrain model (DTM) used for watershed delineation was based on LiDAR data provided by the GeoHub. Additional manipulations of the DTM were necessary to prepare the surface for use in the hydrologic model. The LIDAR was resampled in GIS to a reduced 5m horizontal and 0.5m vertical cell size in order to allow reasonable computation. Following this, the rest of the pre-processing was completed in HEC-HMS (version 4.11). The first step was to ensure that flow paths were accurately represented in the DTM. This was accomplished using a shapefile of creek centerlines (NBMCA/OHN watercourse) and burning in a channel through structures such as bridges and culverts (culvert layer provided by NBMCA). The next step was to fill in depressions without apparent outlets. This step ensures that every cell within the watershed contributes flow to the outlet and that there is no depression storage to attenuate peak flows, resulting in a more conservative representation of surface conditions. Following the above steps, a linear workflow was followed that started with creating a flow direction raster that indicated which direction a given cell would drain to. Next, a flow accumulation raster was created that represented the number of upstream cells contributing to a given cell. A stream network was then defined based on the minimum number of drainage areas. This was done for reasonable values to achieve a number of subcatchments suitable for each size of river. The subcatchments were delineated based on the flow change locations and to provide a logical output into the hydraulic model.

6. Hydrologic Modelling

6.1 Model inputs

6.1.1 Catchment characteristics

In the absence of long-term streamflow data in this area, the single-event hydrologic modelling approach was taken to estimate peak flood flows corresponding to specified storm hyetograghs. The HEC-HMS model of United States Army Core of Engineers (USACE) was chosen, as it is widely used worldwide and in Canada. It also offers many options/modules for various hydrologic phenomena.

A new HEC-HMS model was set up for Lansdowne Creek watershed. Given appropriate pour points (or catchment outlets), HMS can delineate the basin and sub-basins based on the LIDAR-based topograghy.

Following the preprocessing steps, HEC-HMS calculates many parameters based on the surface properties. Some of the pertinent parameters are shown in the **Table 1** below.

Table 1 Watershed Characteristics

Basin	Area	Longest Flowpath	Longest Flowpath Slope	Basin slope	Basin Relief	Relief Ratio	Elongation ratio	Drainage Density
	(km2)	(km)	(m/m)	(m/m)	(m)			(km/km2)
SB1	0.6871	2.745	0.00926	0.17077	35.89	0.01307	0.34079	1.754
SB2	0.3707	1.322	0.01394	0.13231	27.44	0.02075	0.51956	1.318
SB3	0.3863	2.382	0.01703	0.17676	41.68	0.01750	0.29440	2.032
SB4	0.3468	1.255	0.01704	0.15401	26.24	0.02091	0.52940	1.082
SB5	0.8430	2.443	0.01409	0.10913	41.40	0.01695	0.42408	1.851
SB6	0.5330	1.588	0.02145	0.14731	34.21	0.02154	0.51875	1.700
SB7	0.0085	0.340	0.05159	0.12616	17.57	0.05164	0.30485	15.659
SB8	0.1427	1.049	0.02431	0.12956	26.15	0.02494	0.40648	4.139
SB9	0.3917	1.346	0.01871	0.10684	26.21	0.01947	0.52476	1.692

A review of the Municipalities of Callander and East Ferris Official Plans does not indicate significant development in the foreseeable future (Municipality of Callander, 2011; Municipality of East Ferris, 2023). Therefore, the current land use was used in the hydrologic modelling.

6.1.2 Precipitation data and design storms

Once the basin had been set up in the model, the precipitation data were entered. The Ontario Ministry of Transportation's IDF curve lookup tool, which uses a square grid technique to interpolate IDF curve parameters, was used to obtain the IDF curve for the area of interest, and the ordinates were used to determine rainfall volumes for the SCS distribution.

The map showing the IDF curve selection approach is included in **Appendix A**.

For SCS design storms, 24hour storms were used for the SCS method because past experience indicates that the 24 hour storms yield conservative (higher) compared to shorter duration storms. No areal reduction was performed for the return period events due to the small size of the watersheds.

The model was run for the 2, 5, 10, 25, 50, 100, 200 and 500 year return period storms using SCS Type II rainfall distribution. The Timmins Storm event was used as the regional event.

6.1.3 SCS Curve Number Grid

A curve number grid was created by in-house staff using Q-GIS to assign a curve number to each raster cell based on the soil and land cover characteristics at that point. Curve numbers were selected based on the TR-55 document from the NRCS (NRCS, 1986). Both Provincial Landcover and Open Canada Landcover were considered. It was determined that the Provincial Landcover dataset was similar to the NRCS lookup table and best represented different infiltration classifications. This ensures accurate geospatial representation of runoff characteristics. Soil hydrologic characteristics were defined using the Ontario Soil Survey Index.. The landuse categories were assigned based on the NRCS landuse classifications to facilitate the assignment of curve numbers.

Following the preparation of the soil and landuse data, the layers were combined to create a layer that included both landuse and soil data. A lookup table was created to assign a curve number based on the land use type and the hydrologic soil group. The lookup table is shown in **Appendix A**. The output yielded a curve number raster that was used to determine a weighted-average curve number for each sub-basin, which was then recorded in the attribute table of the subcatchment shapefile.

6.1.4 Percent Impervious

Information pertaining to imperviousness was not available. It was therefore estimated from aerial photographs. In most of the upstream watershed, it was conservatively estimated to be at 5%. In the downstream part, it was estimated in the range of 15-20%.

Curve Number (CN) and associated parameters are given in the following table.

Table 2 Curve Number and Other Parameters

Basin	Area	Initial Abstraction	Curve Number	% Impervious	Time of Concentration
	(km2)	(mm)		(%)	(hr)
SB1	0.6871	39.4	56.3	5.0	1.39
SB2	0.3707	32.5	61.0	5.0	0.87
SB3	0.3863	36.0	58.5	5.0	1.12
SB4	0.3468	39.9	56.0	15.0	0.81
SB5	0.8430	47.8	51.5	5.0	1.25
SB6	0.5330	30.6	62.4	5.0	0.91
SB7	0.0085	71.0	41.7	5.0	0.25
SB8	0.1427	48.6	51.1	20.0	0.64
SB9	0.3917	26.3	65.9	15.0	0.80

7. HEC-HMS Model

The main components of the hydrologic model are the loss method, the transform method, and the routing method. Each of these components are discussed below. Initial estimates of each parameter are shown in **Appendix B**.

The modeling was done for a total of nine (9) storm events: 2, 5, 10, 25, 50, 100, 200 and 500 year storm events; Timmins Storm.

7.1 Loss Method

The loss method selected was the SCS curve number approach due to its relatively small data requirements and ease of calibration. The development of the curve number grid has been described above. In addition to the curve number and percent impervious areas determined previously, initial abstraction was also calculated automatically in HEC-HMS. This calculation used the SCS method:

$$I_a = \left(0.2 * \frac{1000}{CN} - 10\right) * 25.4 = (\text{mm})$$

7.2 Routing Method

For larger reaches, the Muskingum-Cunge method for channel routing was selected because it is based on physical parameters and therefore does not require extensive calibration to use. The Muskingum-Cunge routing method is applicable for use in large drainage networks with compound cross-sections. The Muskingum-Cunge method is a modification of the Muskingum method where the main channel and overbank flows are decoupled. The required data for Muskingum-Cunge includes the reach length, average slope, cross-section data, and Manning's roughness coefficients. The reach lengths and slopes were determined in HEC-HMS, and the 8-point cross-section for each reach was obtained from HEC-RAS for a middle cross section of a reach. Details of the obtained cross-sections are included in **Appendix B**. Manning's roughness coefficient (0.035) was assigned to the main channel as well as for left and right overbank areas (0.05). Estimates of Manning's n were determined by analyzing the reach characteristics including riparian vegetation to determine the most appropriate roughness coefficient from open channel hydraulics (Chow, 1959). A celerity index of 1.524 m/s (5 ft/s) was assumed, following the HEC-HMS manual.

For smaller reaches (less than 100m), routing was performed using the Lag method. This is because Muskingum-Cunge (MC) proved to be unstable in short reaches. The Lag method is the simplest routing method available in HEC-HMS. This method can only represent the translation of flood waves and does not include any representation of attenuation or diffusion processes. The Lag time was calculated by dividing reach length over index celerity. Details are shown in the following table.

Table 3 Channel Routing Parameters

Reach	Length	Slope	Routing Method	Lag Time	Index Celerity	LOB Roughness	Channel Roughness	ROB Roughness
	(km)	(m/m)		(min)	(m/s)			
R1	0.662	0.0123	MC		1.524	0.050	0.035	0.050
R2	0.591	0.0058	MC		1.524	0.050	0.035	0.050
R3	0.133	0.0102	Lag	1.4				
R4	0.906	0.0153	MC		1.524	0.050	0.035	0.050

7.3 Transform Method

The Clark Unit Hydrograph was used as the transform method in the model. This method uses linear reservoir storage calculations to determine how the input hydrograph is translated and attenuated through a subcatchment. The two input parameters needed for these calculations are the time of concentration and a storage coefficient. The initial estimate of the time of concentration in each subcatchment was determined using the following equation recommended by the HEC-HMS manual.

$$Tc = 2.2\left(\frac{L \cdot Lc}{\sqrt{S_{10-85}}}\right)^{0.3}$$

Where T_c is the time of concentration (hrs), *L* is the longest flow path (mi), *Lc* is the centroidal flow path (mi), $S_{10\text{–}85}$ is the average slope of the flow path represented by 10 to 85 percent of the longest flow path (ft/mi). The SI units were converted to imperial units while using the above equation. The storage coefficient is dependent on the time of concentration and was calculated using the following equation recommended in the HEC-HMS manual:

$$\frac{R}{R + Tc} = 0.5$$

Where R is the storage coefficient. These calculations were calculated internally in HEC-HMS.

7.4 Flow Comparison

Suitable data for meaningful calibration was not available in this watershed, as is the case for most small catchments. Under such circumstances, indirect methods are employed to gain confidence in hydrologic and hydraulic models.

In this study, the calculated flows (for Timmins Storm) were compared with the Creager Envelop Curve. This curve with a coefficient of 30 fits best to Canadian data (Watt et al., 1989).

The comparison is shown in **Figure 4.0**. It appears that the computed flows are well below the Creager Curve and the observed large floods (Canadian Extremes) used to derive this curve. This curve is considered the upper limit of floods in Canada. The data from our study also lines up well with the observed large floods in Ontario (Ontario Extremes), which were taken from MNRF (2014). Considering all, we conclude that the estimated flows for this study are reasonable.

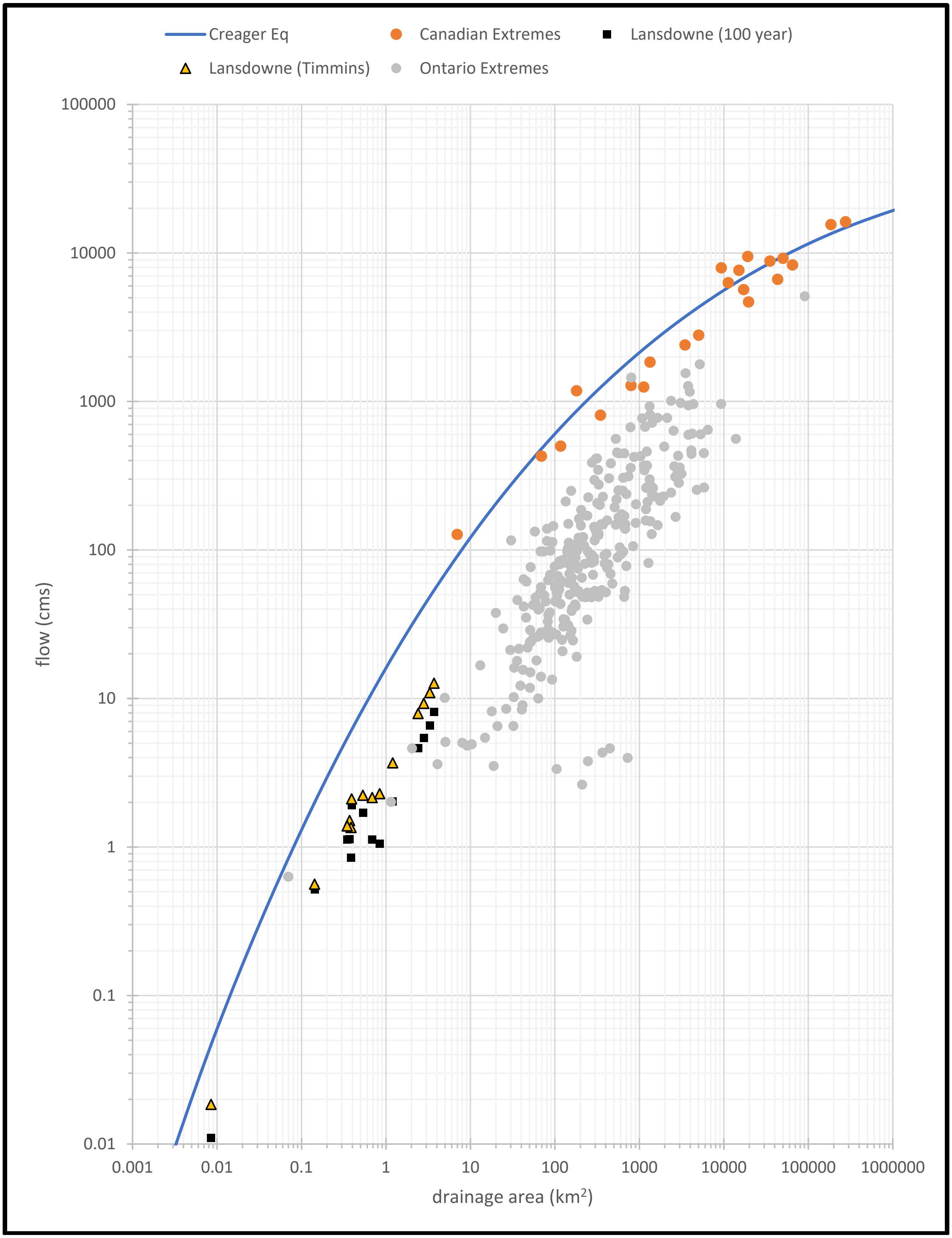

Figure 4 Flow Comparison

7.5 Design Flows for Hydraulic Modeling

The primary purpose of the hydrological model is to determine flow rates for use in hydraulic modelling. **Table 5** displays the HEC-HMS outputs used for hydraulic modelling.

Table 5 Peak Flow Summary

	Area	Return Period (years) or Storm Event								
	(km2)	2	5	10	25	50	100	200	500	Timmins
Basin		Flows (cms)								
SB1	0.6871	0.119	0.239	0.389	0.642	0.871	1.124	1.441	1.897	2.152
SB2	0.3707	0.105	0.261	0.423	0.676	0.894	1.129	1.416	1.818	1.507
SB3	0.3863	0.081	0.186	0.304	0.495	0.663	0.848	1.076	1.400	1.353
SB4	0.3468	0.258	0.382	0.518	0.731	0.919	1.122	1.372	1.727	1.386
SB5	0.8430	0.159	0.225	0.339	0.569	0.793	1.052	1.386	1.879	2.287
SB6	0.5330	0.164	0.411	0.657	1.034	1.355	1.700	2.118	2.700	2.230
SB7	0.0085	0.004	0.005	0.006	0.007	0.009	0.011	0.015	0.023	0.019
SB8	0.1427	0.167	0.224	0.275	0.358	0.434	0.518	0.624	0.777	0.562
SB9	0.3917	0.365	0.674	0.936	1.307	1.608	1.920	2.288	2.790	2.109
Outlet	3.7098	1.220	2.238	3.289	4.976	6.468	8.126	10.125	12.933	12.675
Node		Flows (cms)								
R1	3.3000	0.901	1.674	2.542	3.952	5.201	6.567	8.267	10.730	10.961
R2	2.8000	0.604	1.266	1.999	3.195	4.259	5.428	6.875	8.943	9.267
R3	2.4000	0.530	1.087	1.706	2.724	3.635	4.643	5.896	7.696	7.920
R4	1.2000	0.253	0.466	0.722	1.165	1.572	2.028	2.601	3.430	3.684

For detailed data on flows in each reach, junction, and subcatchment, please see **Appendix A**. Peak flows at Lansdowne Creek is shown for each design storm in **Table 4**.

8. Hydraulic Modelling

Following current mapping guidelines, HEC-RAS manuals, and the contemporary industry standards, a 1D HEC-RAS model was set up. Version 6.4.1 of HEC-RAS model was used. The design flows determined from the HEC-HMS model were used as the input to the HEC-RAS model. The purpose of the hydraulic model is to determine the water surface elevations (WSEL), energy grade, velocity, and other hydraulic parameters corresponding to design flows. The results of this modelling exercise will determine the elevations that will be used for flood plain mapping.

8.1 Input Data

The data needed to create an accurate hydraulic model include channel geometry, structure geometry (i.e., bridges and culverts), design flow rates, Manning's roughness coefficients for the main channel and floodplains, expansion and contraction coefficients, and the boundary conditions.

8.1.1 Geometry and Structures

A finer grid 1m horizontal and 0.5m vertical cell size was used for hydraulic modeling. In total, 185 cross-sections were used. The cross-sections generated this way were further modified based on field measurements.

The location and alignment of river cross-sections, as well as the spacing between them, were based on engineering judgment as related to the expected flow conditions during high flood events.

Appendix B shows a schematic of HEC-RAS models. The details of the cross-sections are included in Appendix B.

To improve the accuracy of the underwater portion of the channel cross-section, adjustments were made based on field observations. To correct the geometry data and accurately represent the low flow channel, the model cross-sections were manually adjusted to match the channel inverts that were surveyed at each structure. While the entire low flow channel geometry is not as precise as the rest of the terrain data, the small differences in conveyance will not have a significant impact on the results or floodplain maps, as the flow within the low flow channel is a small fraction of the regulatory flows used to define the floodplain.

For each structure in the model, expansion and contraction reaches were included to assess the energy losses associated with flow entering and exiting a structure, caused by changes in geometry between cross-sections and at structures. The coefficients are higher when the transition is more abrupt, such as at crossings. The contraction and expansion coefficients used for crossings were 0.3 and 0.5, respectively, and for all other cross-sections, 0.1 and 0.3 were used. These values were recommended in the HEC-RAS manual for typical bridge sections with subcritical flow. The expansion and contraction reach lengths were determined by comparing the bankfull width of the channel to the bridge opening size, following the guidelines in the HEC-RAS manual. The use of expansion and contraction reaches (i.e., two cross-sections up- and downstream of structures) ensures that flow transitions are gradual as the flow narrows when approaching a structure and expands after one. The cross-sections immediately adjacent to the structures typically have more abrupt transitions as the flow is constrained by a culvert.

Ineffective flow areas were used in the model, primarily immediately upstream and downstream of hydraulic structures, so expansion and contraction losses could be accurately modelled.

Within the study area, there were 31 structures, including 3 bridges and 28 culverts. The HEC-RAS manuals were followed in modelling bridges and culverts in the HEC-RAS model. Deck elevations were taken from the LiDAR for the bridges and culverts.

The structure survey sheets for all structures are included in **Appendix C**.

8.1.2 Design Flows

The flow rates were determined from the HEC-HMS hydrologic model. **Table 4** lists the estimated design flows for return periods ranging from 2 to 500 years and Timmins Storm. Flow change locations were determined based on confluences of sub-catchment flows in HEC-HMS. Each reach in HEC-RAS can have multiple flows, based on flow change locations specified by cross-section station. The level of flow discretization in the HEC-RAS model reflects the level of discretization along the main channels in HEC-HMS. Flow rates for all return period storms are shown in **Appendix B**.

The modeling was done for a total of nine (9) storm events: 2, 5, 10, 25, 50, 100, and 200 year storm events; Timmins Storm.

There is a ~180m long underground pipe/tunnel at the downstream end of Lansdowne Creek. This pipe has several irregular cross-sections and bends, making it difficult to accurately compute its conveyance capacity. It was estimated that, during high flood events (the 100 year and Timmins Storm), this culvert will likely convey about 2 cms. This flow was about 16% of the Lansdowne Creek flow at this location (12.68 cms). Since there is no guarantee that this pipe would reliably and perpetually divert a certain amount of flow, it was not taken into account in the HEC-RAS modeling or the flood mapping. See attached photos of pipe in submission folders.

8.1.3 Manning's Roughness Coefficient

Manning's roughness coefficients will vary based on flood stage and season. Therefore, the values were selected to represent typical summer conditions.

Manning's roughness coefficient (Manning's n) was assigned to the main channel as well as the left and right overbank areas. Estimates of Manning's n were determined by analyzing the reach characteristics including riparian vegetation to determine the most appropriate roughness coefficient from open channel hydraulics (Chow, 1959). The initial values of Manning's n were selected as 0.035 for the main channel and 0.05 for the left- and right-overbank areas, as almost all riparian areas included some forest or dense brush that would provide similar degrees of roughness. For the cross sections below the grocery store where there is no creek, 0.03 was used for the 'channel' as there were more paved surfaces.

8.1.4 Boundary Conditions

Downstream boundary conditions are needed for HEC-RAS models. Known or estimated water levels are usually used as the downstream boundary condition.

According to Section 4.3 of MNR (2002, p.17-18), for rivers flowing into large lakes, where the high water conditions at the confluence are generated by two independent flood events, the flood standard should be based on the higher of:

- mean annual flood level in the river and/or stream and the flood hazard limit in the connecting channel, (See The Great Lakes – St. Lawrence River System and Large Inland Lakes Technical Guide.)
- the flood hazard limit (Hurricane Hazel, Timmins Storms, observed or the 100 year event) in the mean monthly levels in the connecting channel or lake.

Accordingly, the following boundary conditions have been used for this project:

- For High flow events in the creek (Timmins Storm, 100 year, or higher events), we used the mean annual lake level (**195.472** m).
- For smaller events in the creek (50 year, or lower events), we used the 1:100 year lake water level (**196.895** m).

This lake level values for Lake Nipissing were calculated using a Log-Normal distribution based on the data at North Bay (02DD006) for the period from 1933 through 2021, available from Environment Canada's HYDAT database.

9. HEC-RAS Model

Once the model was set up, the computed profiles and other parameters were scrutinized to assess whether the model outputs were reasonable. Special attention was given to the computed water levels and energy profiles near road crossings. Adjustments of model parameters, primarily the channel resistance and contraction and expansion coefficients, were made as necessary.

Suitable data for meaningful calibration was not available in this watershed, as is the case in most small catchments see **sec. 9.1** for further comparison. Under such circumstances, indirect methods, such as sensitivity analysis, are employed to gain confidence in hydrologic and hydraulic models.

9.1 Streamflow Collection

Below in **Figure 7** a rating curve for XS 351 of Lansdowne Creek was generated in HEC-RAS. This is the approximate location of where Water's Edge installed an insitu water level logger. During the 8 months there were no significant storms to measure the flow. Additionally, there was one Flow Tracker wading measurement completed that showed minimal (0.001CMS) flow. As a result the rating curve combined with flow measurements could not be successfully used in the modelling.

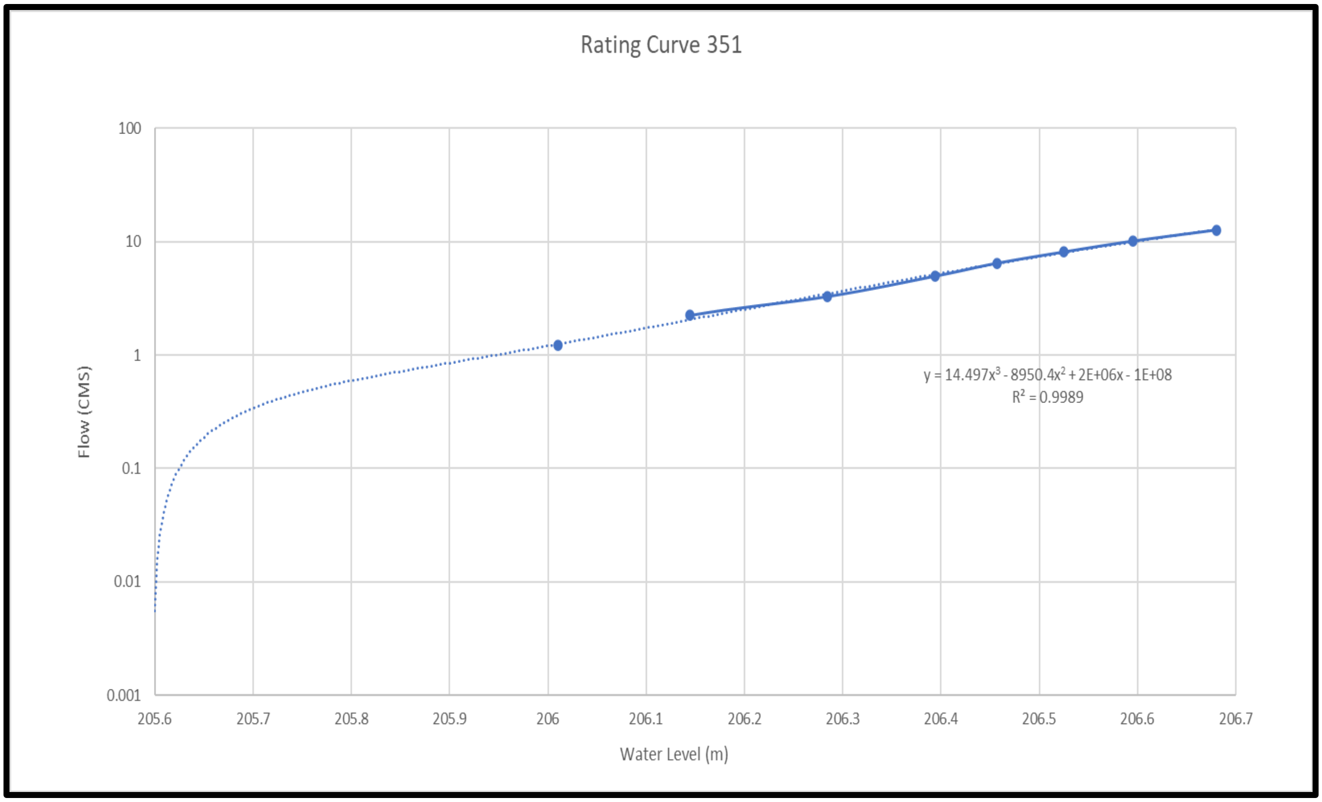

Figure 7 Hec-RAS Rating Curve

9.2 Sensitivity Analysis

A sensitivity analysis is used to determine the effect that parameters have on the model results. In HEC-RAS, Manning's n is the primary calibration parameter. The expansion and contraction coefficients can also have a significant impact on model results, but there is a smaller range of reasonable values. To determine the impact of parameter adjustments, the Manning's n was adjusted by multiple factors. The results are plotted to determine the relationship between the parameter adjustment factors and the model outputs.

Graphical representation of the sensitivity analysis is shown in **Figure 5**. The slope of each line in the graph represents the influence that the parameter has on water surface elevations.

Table 6 Sensitivity Analysis Results

River Sta	Profile	Q Total	Mannings n Multiplier	W.S. Elev
		(m3/s)		(m)
326	Timmins	12.68	1	206
326	Timmins	12.68	1.1	206
326	Timmins	12.68	0.9	206
326	2yr 24hr SCS	1.22	1	205.23
326	2yr 24hr SCS	1.22	1.1	205.23
326	2yr 24hr SCS	1.22	0.9	205.23
326	5yr 24hr SCS	2.24	1	205.35
326	5yr 24hr SCS	2.24	1.1	205.35
326	5yr 24hr SCS	2.24	0.9	205.35
326	10yr 24hr SCS	3.29	1	205.46
326	10yr 24hr SCS	3.29	1.1	205.46
326	10yr 24hr SCS	3.29	0.9	205.46
326	25yr 24hr SCS	4.98	1	205.58
326	25yr 24hr SCS	4.98	1.1	205.58
326	25yr 24hr SCS	4.98	0.9	205.58
326	50yr 24hr SCS	6.47	1	205.69
326	50yr 24hr SCS	6.47	1.1	205.69
326	50yr 24hr SCS	6.47	0.9	205.69
326	100yr 24hr SCS	8.13	1	205.78
326	100yr 24hr SCS	8.13	1.1	205.78
326	100yr 24hr SCS	8.13	0.9	205.78

The sensitivity analysis indicates that the parameters used in the model are not very sensitive. Within +/- 10% the water level did not change at this cross section. Other cross sections indicated minimal change and the overall floodline area change was minimal.

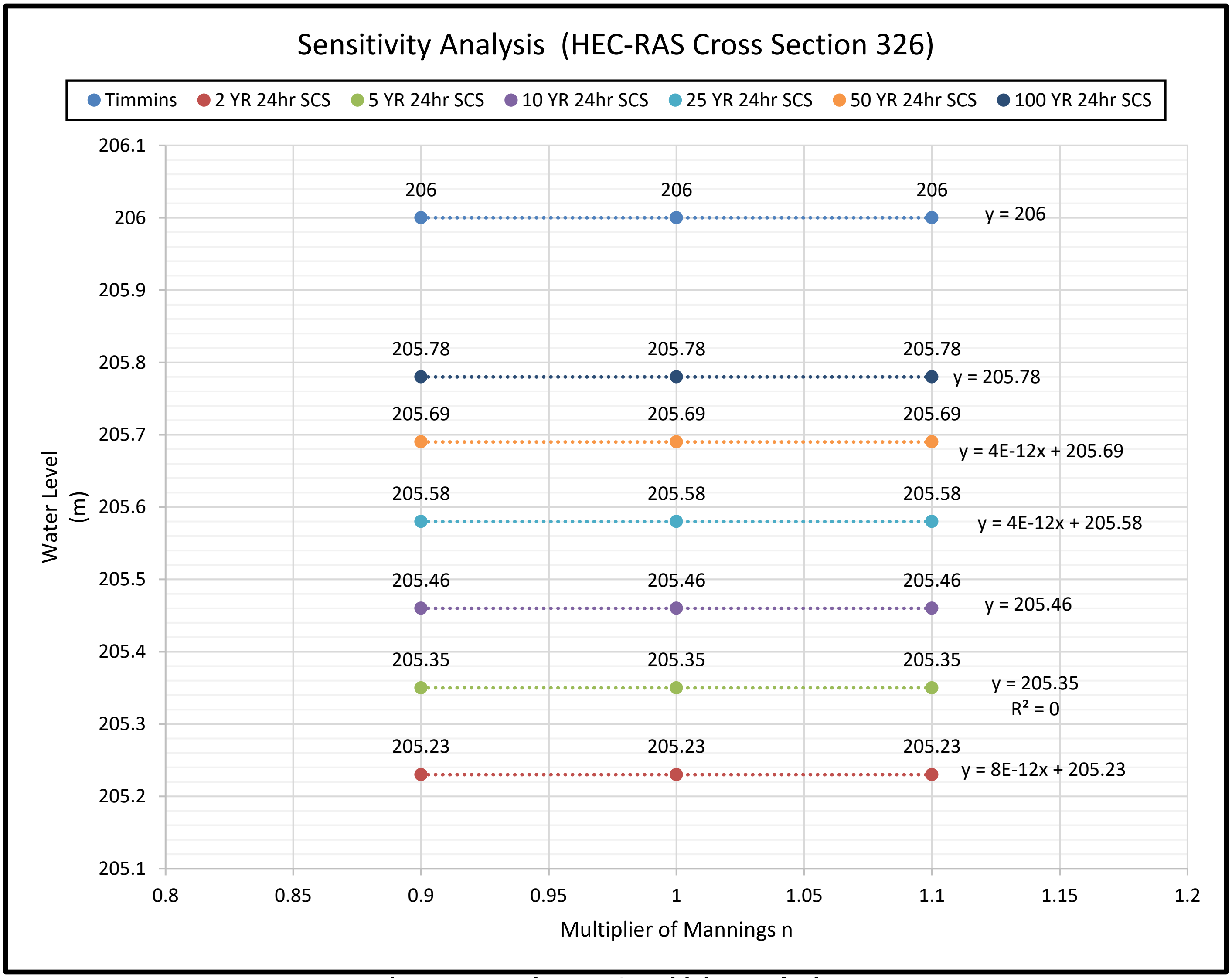

Figure 5 Manning's n Sensitivity Analysis

9.3 Regulatory Flood Levels (RFLs)

As per Section 2.3 of MNR (2002) guidelines, the regulatory flood in Zone 3, which includes the study area, the regulatory flood is the greater of the 1:100 year and Timmins Storm floods.

It was found that Timmins Storm produced higher flows and flood levels than the 100 year storm event.

For the present study, the regulatory flood levels were set equal to the computed water surface elevation as computed from the HEC-RAS models.

As specified in the RFP, the return period flows and the corresponding water levels have been summarized for all storm events (2, 5, 10, 25, 50, 100, and 200 year storm events; Timmins Storm). This is in Appendix B. Detailed HEC-RAS output tables are also included.

9.4 2D HEC-RAS Model

A 2D HEC-RAS model was also prepared as a complimentary tool for gaining insight in the creek hydraulics and flooding. It has no implication on the flood risk mapping done during this project. The 2D model for this study has the following features:

- An area of 1.5 km^2 is covered
- Number of Cells = 51377
- Average Face Length = 5m
- Average Cell Size = 29m^2
- Maximum Cell Size = 4,728m^2
- Minimum Cell Size = 1m^2
- Unsteady flow simulation
- Period of simulation – 19 hours
- Time step – variable
- Upstream boundary condition – HEC-HMS generated hydrographs
- Downstream boundary condition – water level of Lake Nipissing
- Model run for all storm events
- Downstream sink at grocery store culvert.

For the governing event (Timmins Storm), the 2D model yielded similar flood lines as the 1D model. Similar spill sections were also identified. The spill areas were significant, and it is recommended to investigate any solutions.

The 2D model developed here is only preliminary in nature and provides the foundation for further development and use in case such a need arises in future.

The sink flows were created based on culvert simulation using HY-8 culvert modeling software to determine a maximum flow of 2CMS before it overtops (see submission folder for HY-8 model)

10. Floodplain Mapping

10.1 Floodline Delineation

Once the RFLs are established, the plotting of flood lines or flood risk limits is a relatively straight forward matter. Given the topographical information in the form of LIDAR, the inundated area below the RFLs can be easily delineated manually or by using automated computer programs. In the present case, it was done automatically by RAS Mapper, followed by manual checking and adjustment.

10.2 Spill sections

Several spill sections were identified during this study. These spill sections are identified in the maps.

10.3 Buildings in the Floodplain

The presence of existing buildings within the floodplain and the variations in flood risk exposure to these buildings require special attention. After discussions with NBMCA, the floodlines

NBMCA's policy is to allow the flood line to run through buildings. Therefore, we have kept the flood lines as were produced by RAS Mapper, which are based on the bare-earth DTM and often runs through buildings.

10.4 Flood maps

As specified in the RFP, flood maps have been prepared for the Timmins Storm. All maps are in 1:1000 or 1:2000 scale on the equivalent of 24"x36" map sheets.

It is understood that the flood maps will be used by NBMCA during the administration of Ontario Regulation 177/06 and they have been prepared in accordance to the Ontario Guidelines for Developing Schedules of Regulated Areas, dated October 2005.

10.5 Risk Assessment

The risk to road crossings has been investigated, using the computed water levels for various flood events. A summary is presented in **Appendix C**.

Buildings susceptible to flood risk can be seen in the flood plain maps. Water depth, velocity, and depth*velocity maps have been prepared and will in assessing the risk of individual buildings and properties. These maps show life safety criteria (depth = > 0.3 metres, velocity = > 1.7 metres/second, and depth x velocity = > 0.4 metres2/second), which were specified in the RFP. Depth, velocity, and depth*velocity product mapping for the Regional Storm, has been prepared in raster (GEOTIFF) format and are shown in the Maps.

11. Deliverables

The key deliverables for this project, as per the RFP, include the following:

1. Final Report (including hydrologic and hydraulic analyses) [4 hard copies of draft report; Electronic copy of draft report; 4 hard copies of final report; Electronic copy of final report]
2. Hydrology modelling input and output data in digital format
3. HEC-RAS input and output in digital format
4. Power Point Presentation outlining reports presented at Open House
5. Floodplain mapping products as printed map sheets and in ESRI file format [Draft floodplain mapping – 1 hard set and a digital set; Final floodplain mapping sealed by a P. Eng. – 2 hard sets and a digital set; Floodplain mapping products in ESRI file format]

It is understood that all the data collected, and mapping materials produced under this project will become the property of North Bay-Mattawa Conservation Authority.

12. Summary and Recommendations

12.1 Summary

Flood hazard mapping for Lansdowne Creek has been completed. This was done according to the RFP issued by NBMCA (dated February 27, 2023) and the proposal submitted by Water's Edge, dated March 17, 2023.

The floodplain mapping was done in accordance with applicable Provincial and Federal guidelines.

The flood plain maps created under this project are suitable for use per section 28 regulations under the Conservation Authorities Act.

HEC-HMS model was used to estimate design flows and HEC-RAS model was used to estimate flood levels.

The modeling was done for a total of nine (9) storm events: 2, 5, 10, 25, 50, 100, 200 and 500 year storm events; Timmins Storm.

It was found that Timmins Storm produced higher flows and flood levels than the 100 year storm event. Therefore, Timmins Storm was taken as the governing flood event.

As specified in the RFP, flood maps have been prepared for the Timmins Storm. All maps are in 1:1000 or 1:2,000 scale on the equivalent of 24"x36" map sheets.

Flood lines for all other events were generated as shape files only. They were not printed on maps.

12.2 Recommendations

Based on the data, modeling, analyses, and results of this study, we recommend the following.

1. The 1D HEC-RAS model built here should be used as the model of record for the purposes of flood plain mapping.
2. A data collection program may be undertaken, which will include rainfall, stream flow, and water level. This will be helpful in future analysis of the hydrology and hydraulics of Lansdowne Creek.
3. Relevant data, analysis, drawings, and reports of all structures should be collected and archived.
4. The 2D HEC-RAS model developed during this project may be refined and used to gain a deeper insight into the flooding issues and possible remedial measures.
5. The flood mapping done here may be refined and updated as additional information becomes available.
6. Further investigation may be undertaken regarding the flooding issues in this area, since it appears that a substantial portion of developed areas is prone to flooding.
7. The flood forecasting and warning program may be adjusted to take advantage of the knowledge generated during this study.

Respectfully submitted,

Tim Antonio, B.A.Sc., P.Eng.
Water Resources Engineer

Ferdous Ahmed, Ph.D., P.Eng.
Sr. Water Resources Engineer

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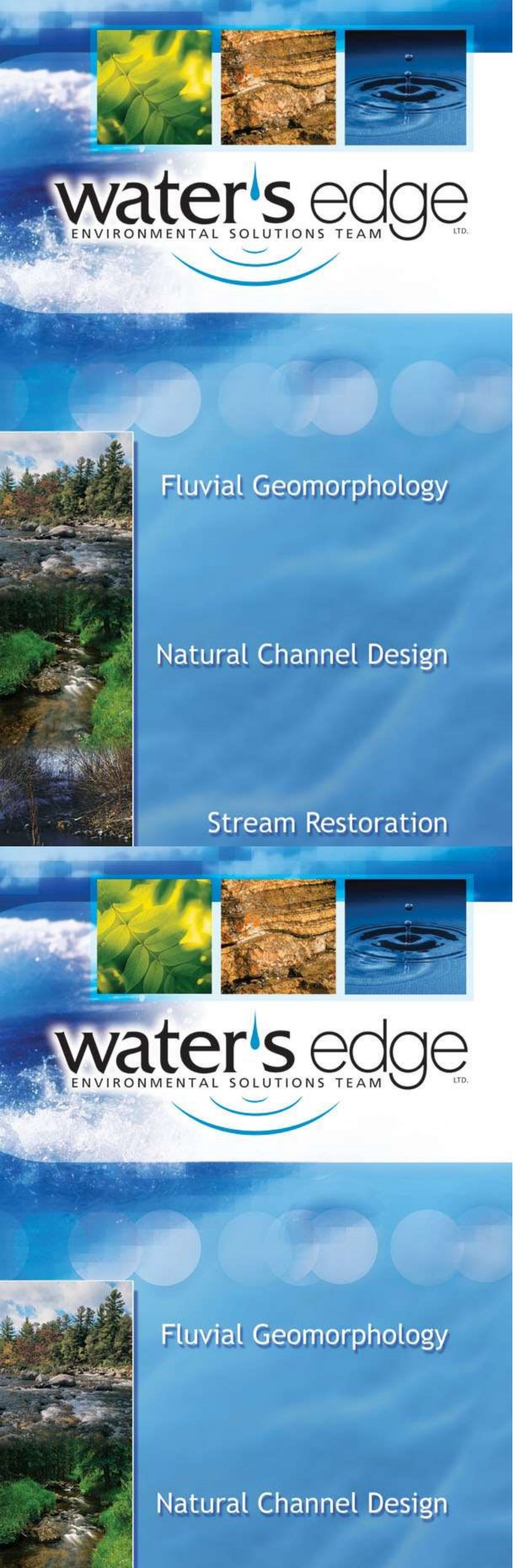


APPENDIX A:

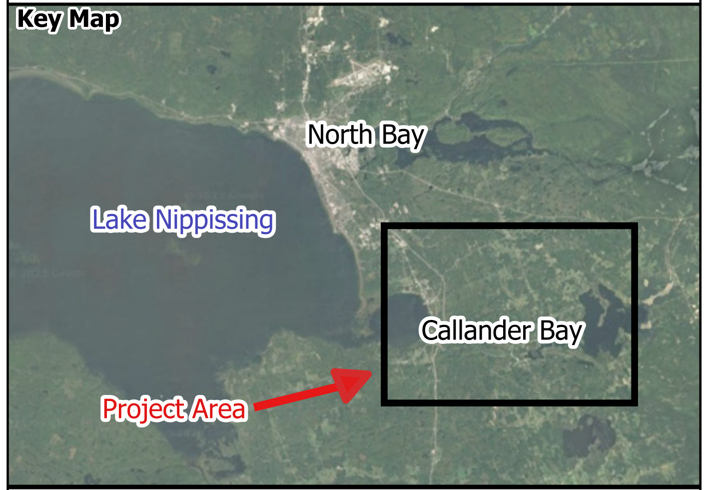
Hydrological Model

Map 1

Callander Bay, Ontario

Lansdowne Creek Subbasins

Key Map



Legend

HEC-HMS - Subbasins

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Project number: 23016 Date: Dec. 12, 2023	NAD83-UTM Zone 17 Size: 11*17

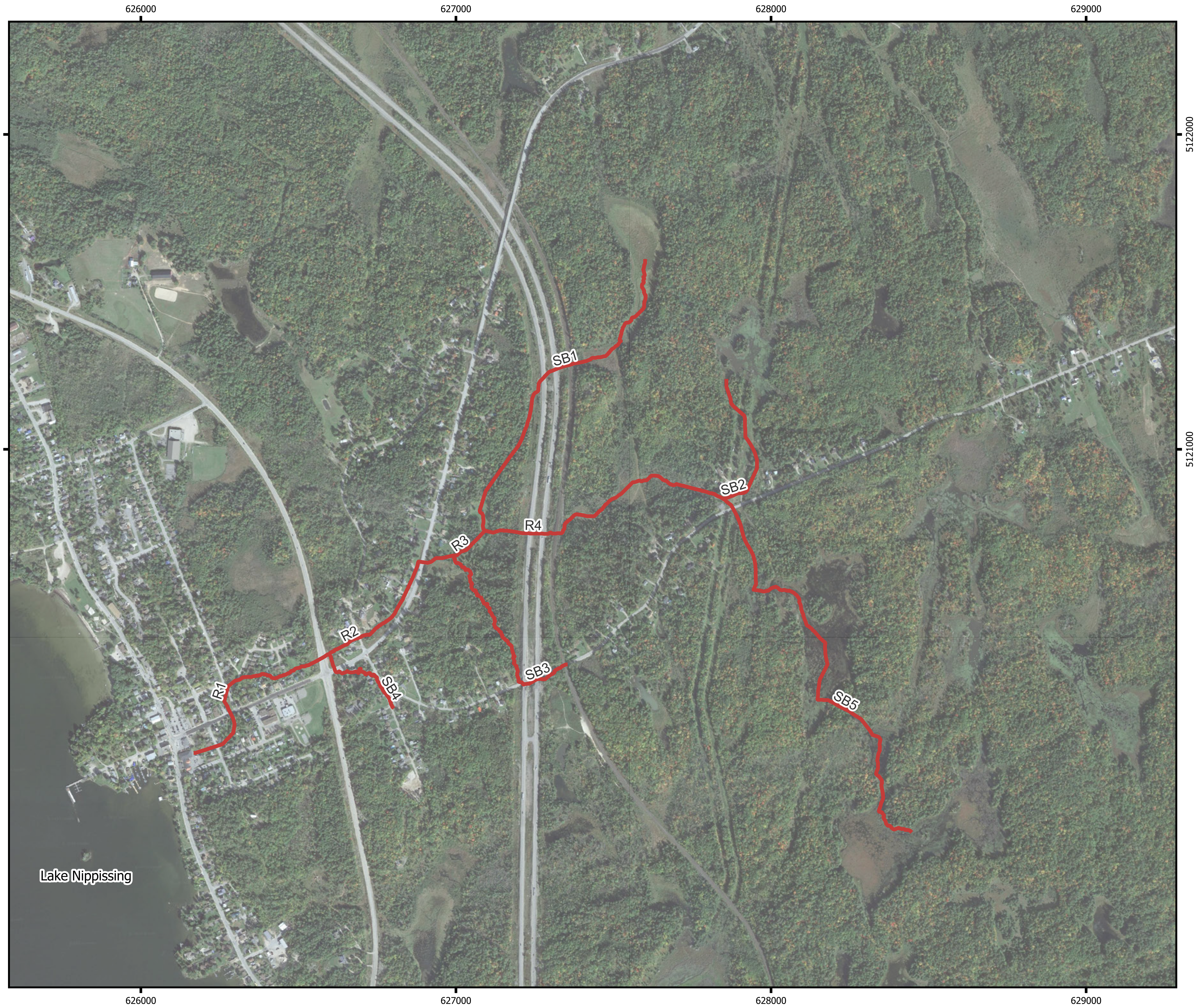
0 250 500 750 m

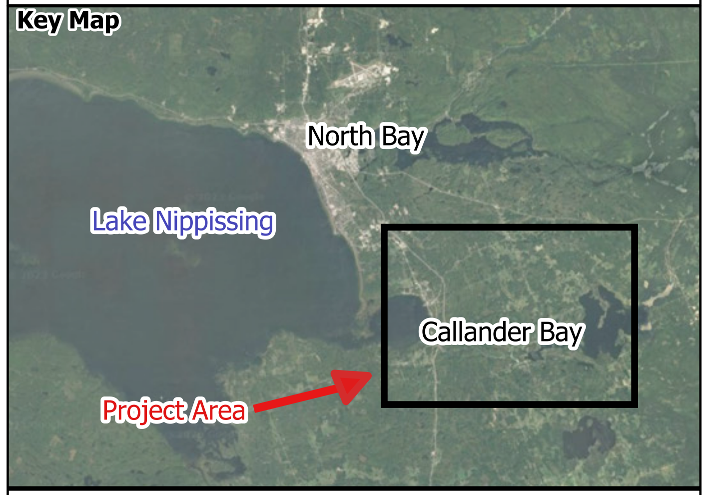
N

Map 2

Callander Bay, Ontario

Lansdowne Creek HEC-HMS Reaches





Legend

HEC-HMS Reaches

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Project number: 23016 Date: Dec. 12, 2023	NAD83-UTM Zone 17 Size: 11*17

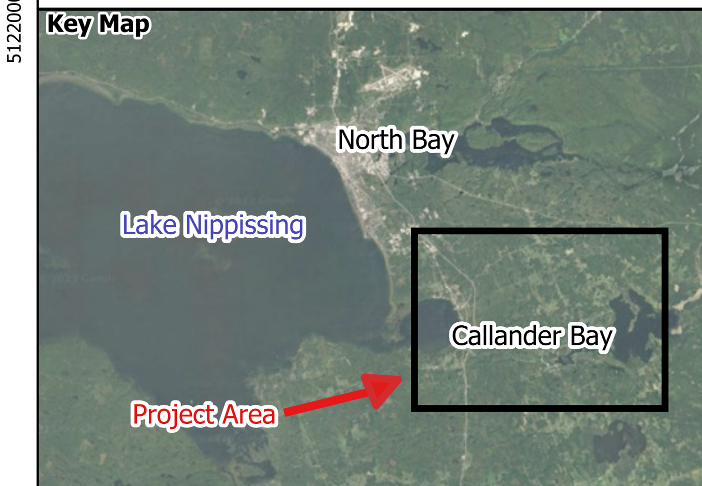
0 250 500 750 m

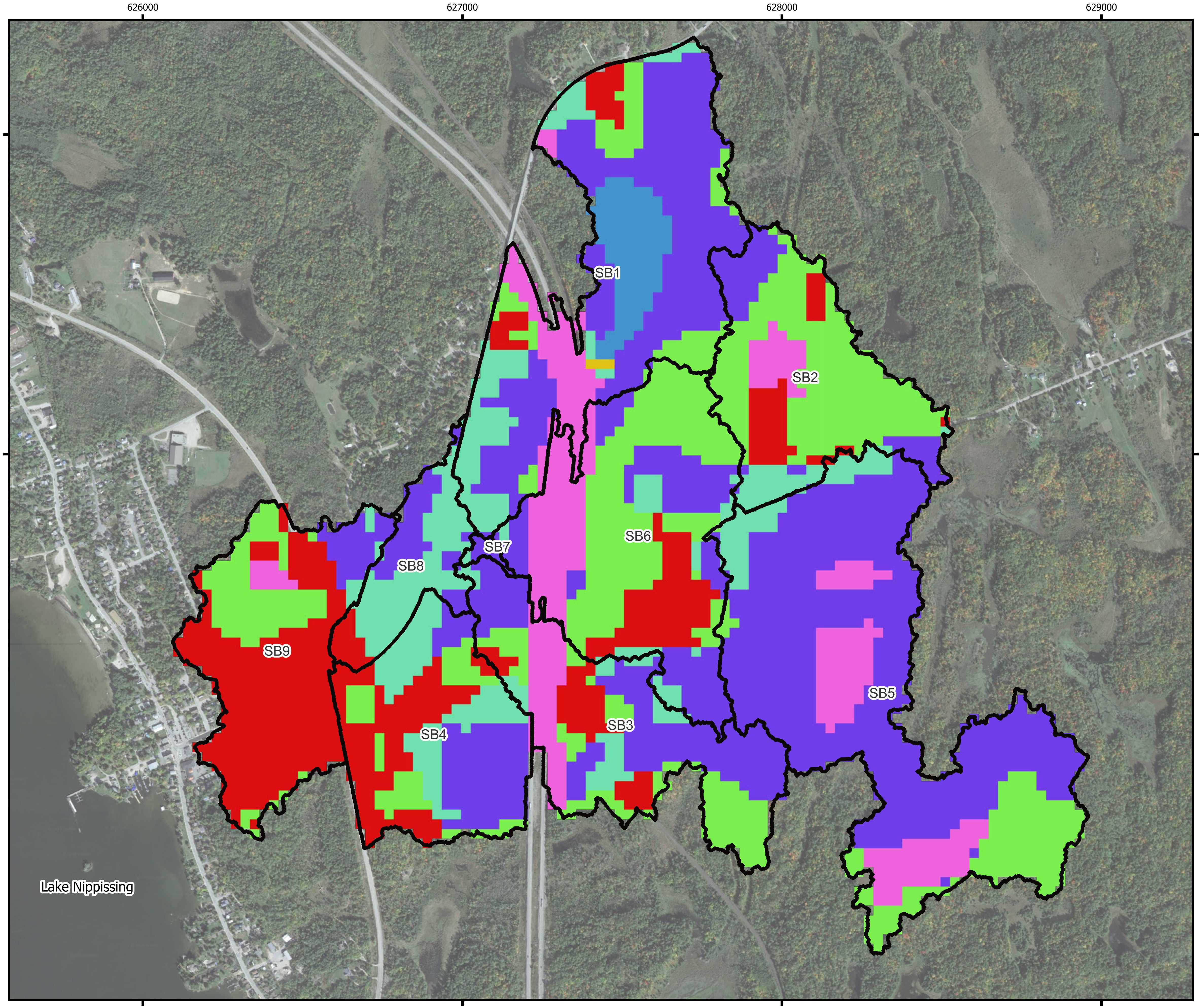
N

Map 3

Callander Bay, Ontario

Lansdowne Creek Curve Numbers





Legend

- Subbasins

Curve Numbers

- 39
- 54
- 61
- 70
- 80
- 85
- 98

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Project number: 23016 Date: Dec. 12, 2023	NAD83-UTM Zone 17 Size: 11*17

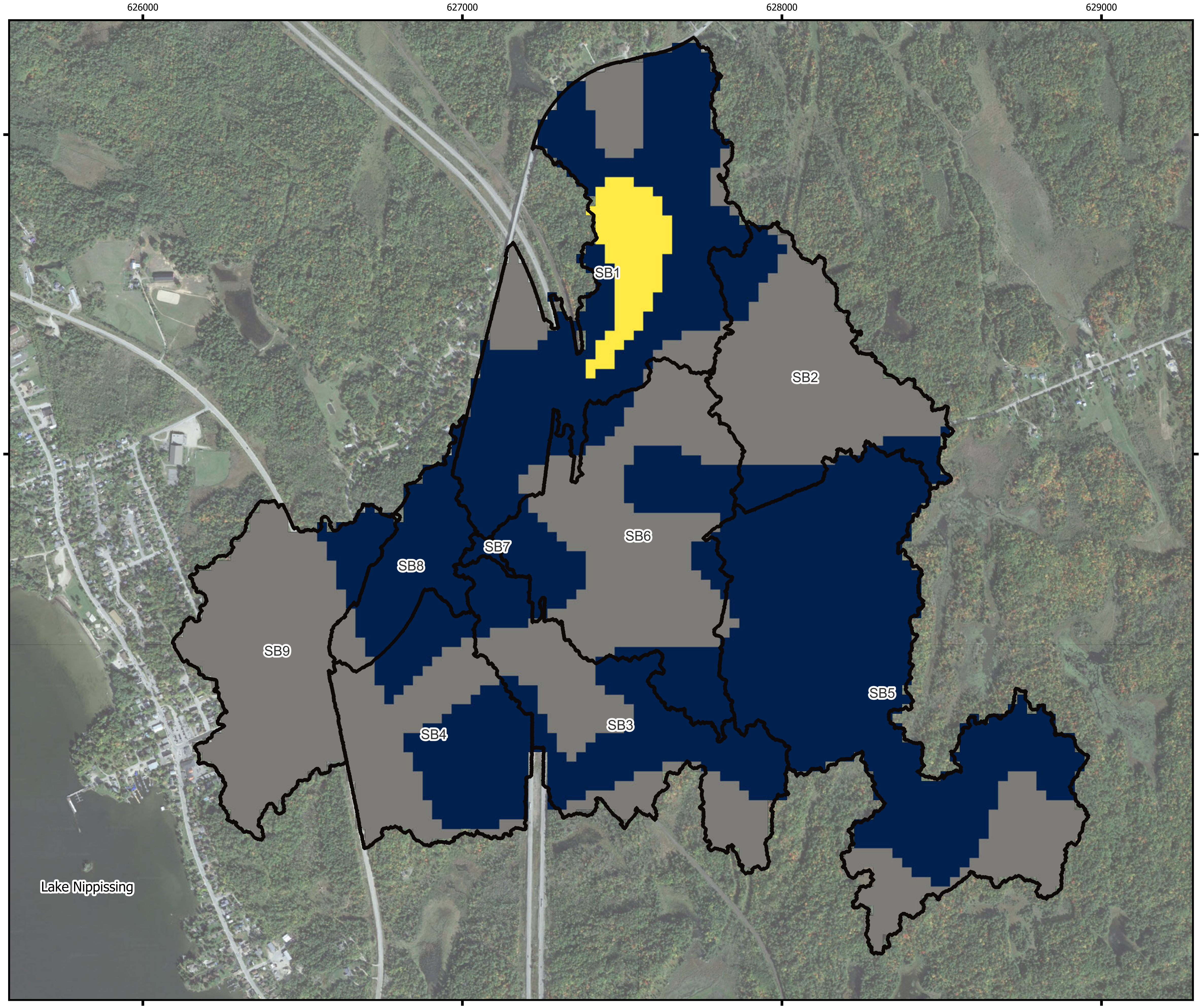
0 250 500 750 m

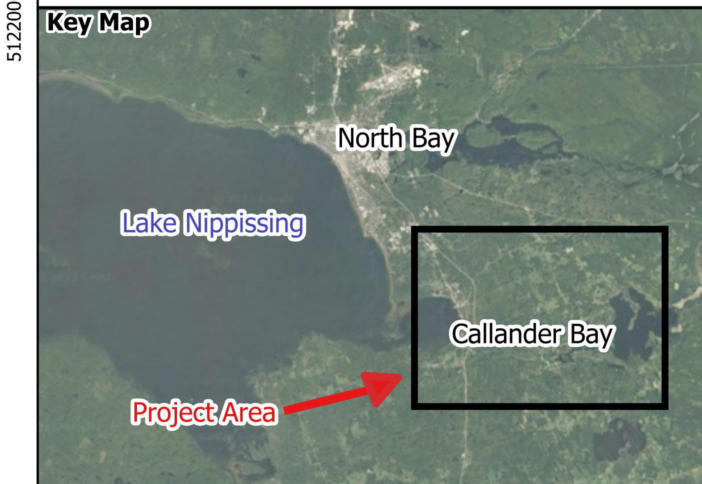
N

Map 4

Callander Bay, Ontario

Lansdowne Creek Hydrologic Soil Survey Index





Legend

HEC-HMS - Subbasins

Soil Hydrologic Group Index

- A
- B
- D

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Project number: 23016 Date: Dec. 12, 2023	NAD83-UTM Zone 17 Size: 11*17

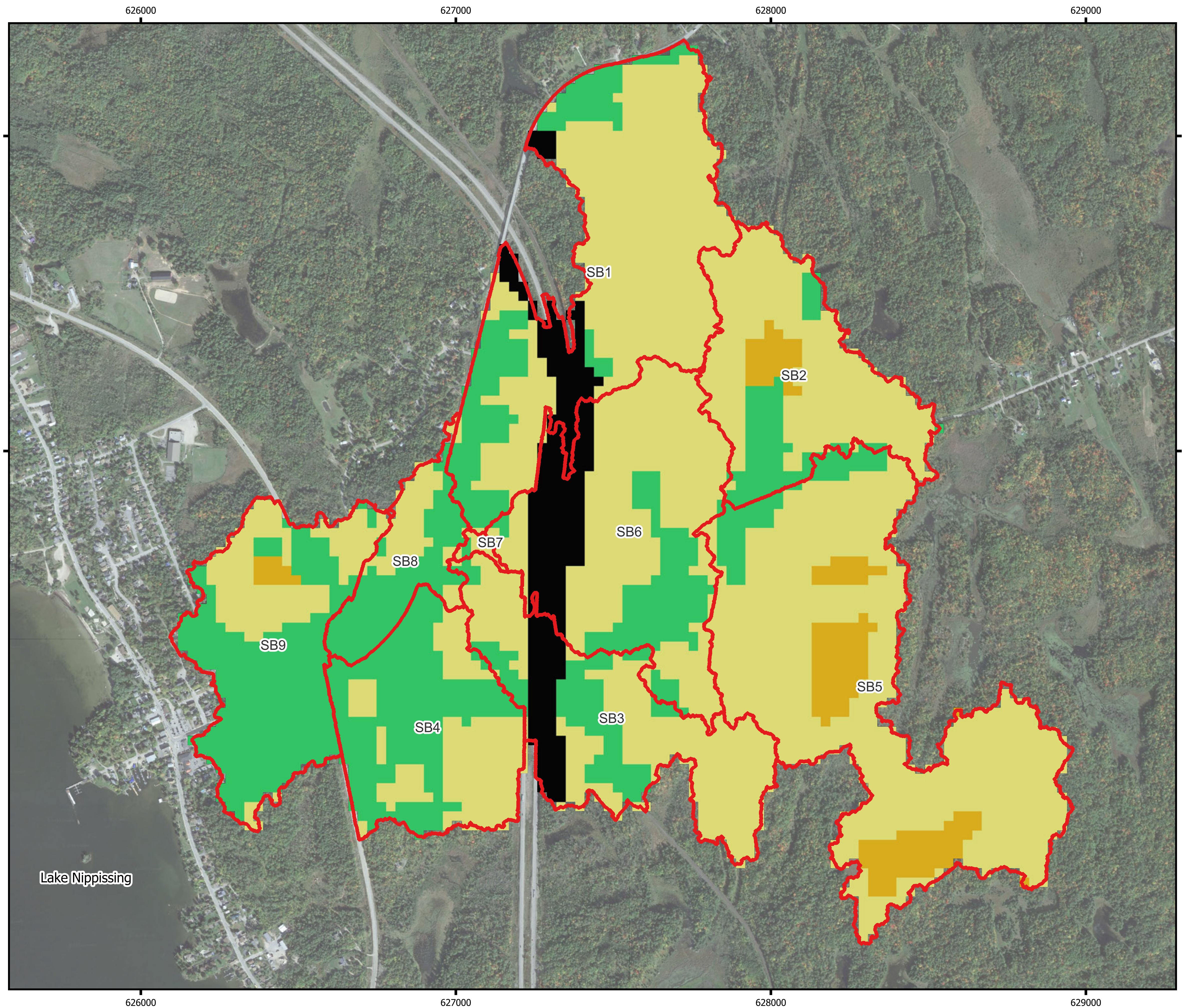
0 250 500 750 m

N

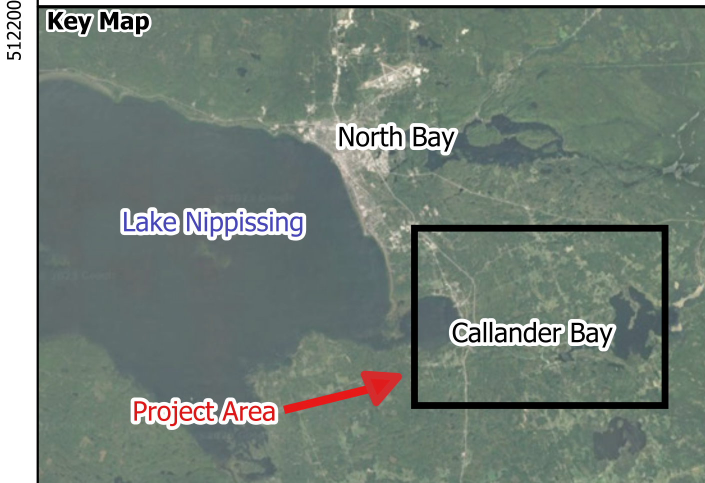
Map 5

Callander Bay, Ontario

Lansdowne Creek
Land Cover



Key Map



Legend

HEC-HMS - Subbasins

Provincial Landcover

- Forest
- Coniferous Area
- Transportation
- Built Up Area - Pervious

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Project number: 23016
Date: Dec. 12, 2023

NAD83-UTM Zone 17
Size: 11*17

0 250 500 750 m

N

TR-55 Curve Numbers

Cover description		Curve numbers for hydrologic soil group			
Cover type and hydrologic condition	**Average percent impervious area2**	**A**	**B**	**C**	**D**
WOODS Fair (woods are grazed but not burned, and some forest litter covers the soil)		36	60	73	79
Goodwoods (woods are protected from grazing, and litter and brush adequately cover the soil)		30	55	70	77
Fully developed urban areas					
Open space (lawns, parks, golf courses, cemeteries, etc.)3:					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc.		98	98	98	98
(excluding right-of-way)					
Streets and roads:					
Paved; curbs and storm sewers (excluding		98	98	98	98
right-of-way)					
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only)4 . .		63	77	85	88
Artificial desert landscaping (impervious weed		96	96	96	96
barrier, desert shrub with 1- to 2-inch sand					
or gravel mulch and basin borders)					
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acre	12	46	65	77	82
Developing urban areas					
Newly graded areas (pervious areas only,		77	86	91	94
no vegetation)5					
Open Water		100	100	100	100
Cultivated Agricultural Lands:					
Row Crops (good), e.g., corn, sugar beets, soy beans		31	42	82	85
Small Grain (good), e.g., wheat, barley, flax		60	82	80	84
Meadow (continuous grass, protected from grazing, and generally mowed for hay):		30	58	71	78
Pasture, Grassland, or Range – Continuous Forage for Grazing:					
Poor condition (ground cover <50% or heavily grazed with no mulch) 68 79 86 89		69	79	86	89
Fair condition (ground cover 50% to 75% and not heavily grazed) 49 69 79 84		49	69	79	84
Good condition (ground cover >75% and lightly or only occasionally grazed) 39 61 74 80		39	61	74	80

Provincial Land Use		TR-55						
		Cover description			Curve numbers for hydrologic soil group			
DN Value	**Provincial Land Use NB**	**Cover type and hydrologic condition**		**Average (**	**A**	**B**	**C**	**D**
		Natural desert landscaping (pervious areas only)4 . .	1		63	77	85	88
		Natural desert landscaping (pervious areas only)4 . .	1		63	77	85	88
		Artificial desert landscaping (impervious weed	2		96	96	96	96
		Gravel (including right-of-way)	3		76	85	89	91
		Gravel (including right-of-way)	3		76	85	89	91
		Newly graded areas (pervious areas only,	4		77	86	91	94
		Newly graded areas (pervious areas only,	4		77	86	91	94
		Poor condition (grass cover < 50%)	5		68	79	86	89
		Paved; curbs and storm sewers (excluding	6		98	98	98	98
		WOODS Fair (woods are grazed but not burned, and some forest litter covers the soil)	7		36	60	73	79
		Poor condition (ground cover <50% or heavily grazed with no mulch) 68 79 86 89	8		69	79	86	89
		Fair condition (ground cover 50% to 75% and not heavily grazed) 49 69 79 84	9		49	69	79	84
		Good condition (ground cover >75% and lightly or only occasionally grazed) 39 61 74 80	10		39	61	74	80
10	Forest	Goodwoods (woods are protected from grazing, and litter and brush adequately cover the soil)	10		30	55	70	77
11	Coniferous Forest	Goodwoods (woods are protected from grazing, and litter and brush adequately cover the soil)	10		30	55	70	77
12	Mixed Fores	Goodwoods (woods are protected from grazing, and litter and brush adequately cover the soil)	10		30	55	70	77
13	Deciduous Forest	Goodwoods (woods are protected from grazing, and litter and brush adequately cover the soil)	10		30	55	70	77
		Open Water	11		98	98	98	98
		Open Water	11		98	98	98	98
		Open Water	11		98	98	98	98
23	Bog	Open Water	11		98	98	98	98
		Open Water	11		98	98	98	98
1	Open Water	Open Water	11		98	98	98	98
	Plantations -Tree Cultivated	Row Crops (good), e.g., corn, sugar beets, soy beans	12		31	42	82	85
	Hedge Rows	Row Crops (good), e.g., corn, sugar beets, soy beans	12		31	42	82	85
	Tilled		12		31	42	82	85
3	Transportation	Paved; curbs and storm sewers (excluding	13		98	98	98	98
25	Built Up Area - Pervious	1/2 acre	14	25	54	70	80	85
	Built Up Area Impervious	1/8 acre or less (town houses)	15	65	77	85	90	92
	Extraction -Aggregate	Gravel (including right-of-way)	3		76	85	89	91
	Extraction Peat / Topsoil	Row Crops (good), e.g., corn, sugar beets, soy beans	12		31	42	82	85
29	Undifferentieated	Good condition (ground cover >75% and lightly or only occasionally grazed)	16		39	61	74	80

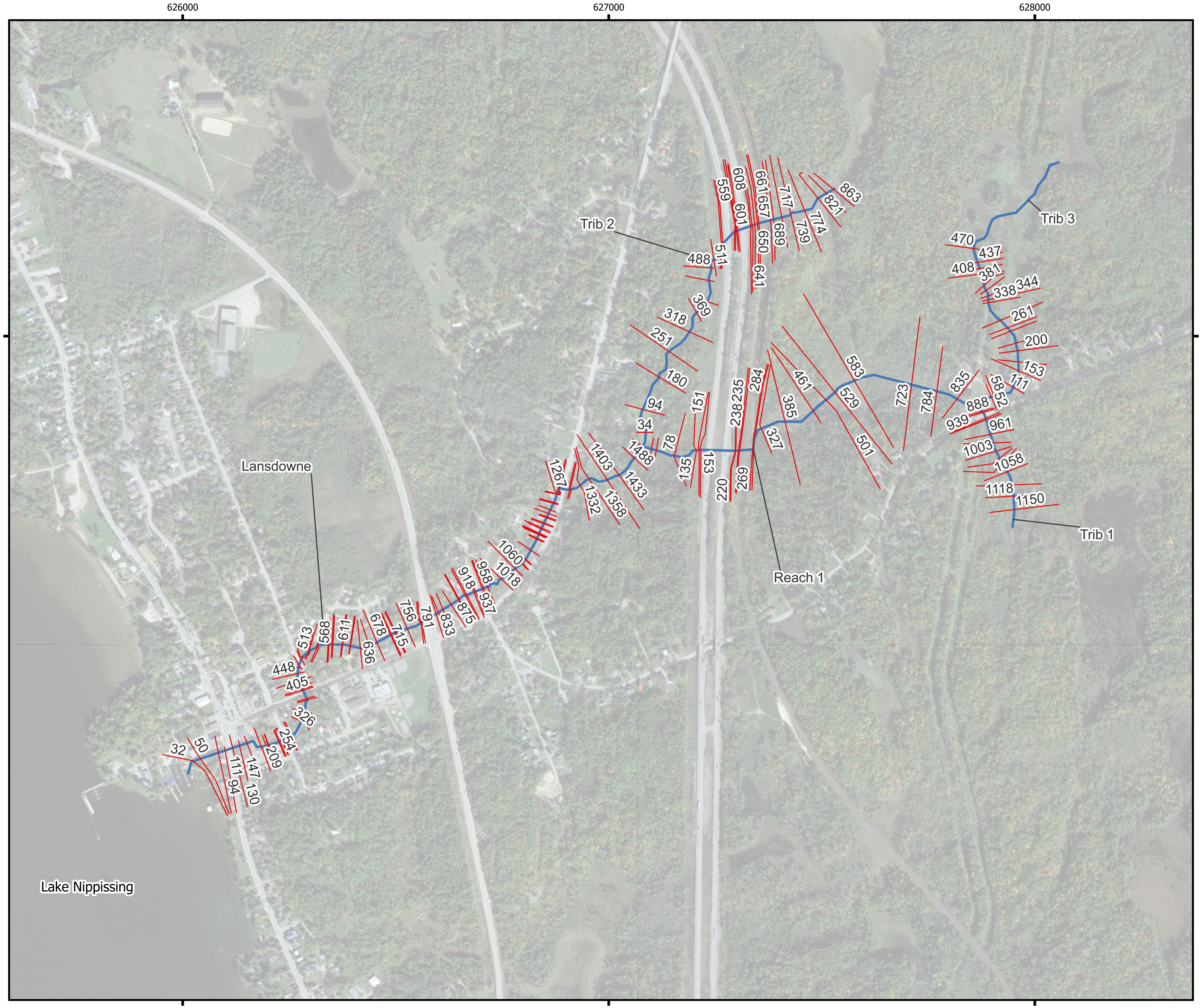
APPENDIX B:

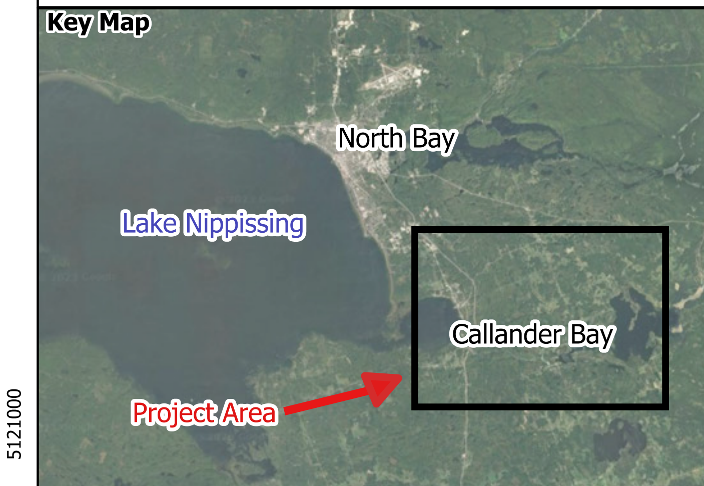
Hydraulic Model

Map 6

Callander Bay, Ontario

Lansdowne Creek
HEC-RAS Schematic





Legend

- HEC-RAS Cross Sections
- HEC-RAS River

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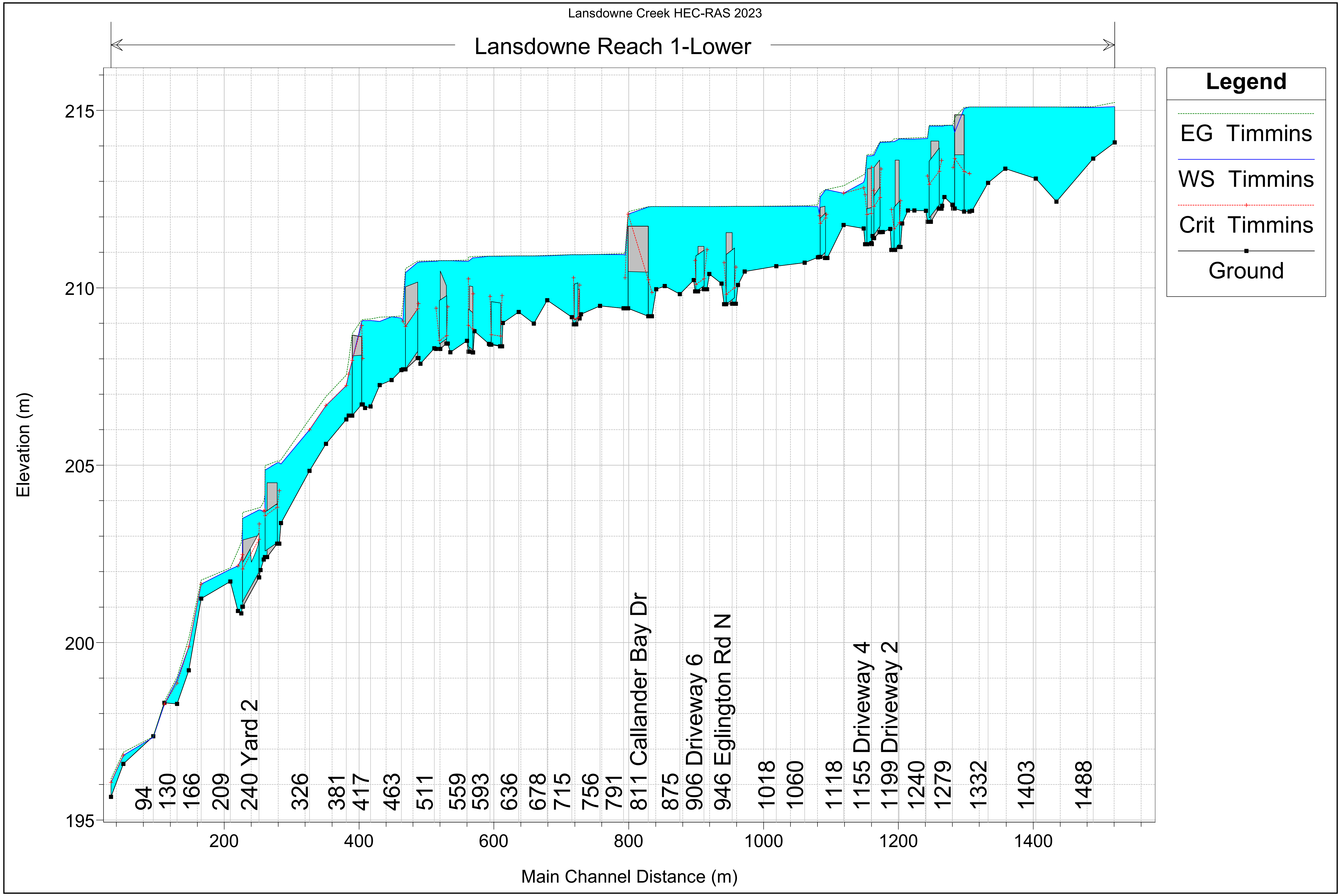
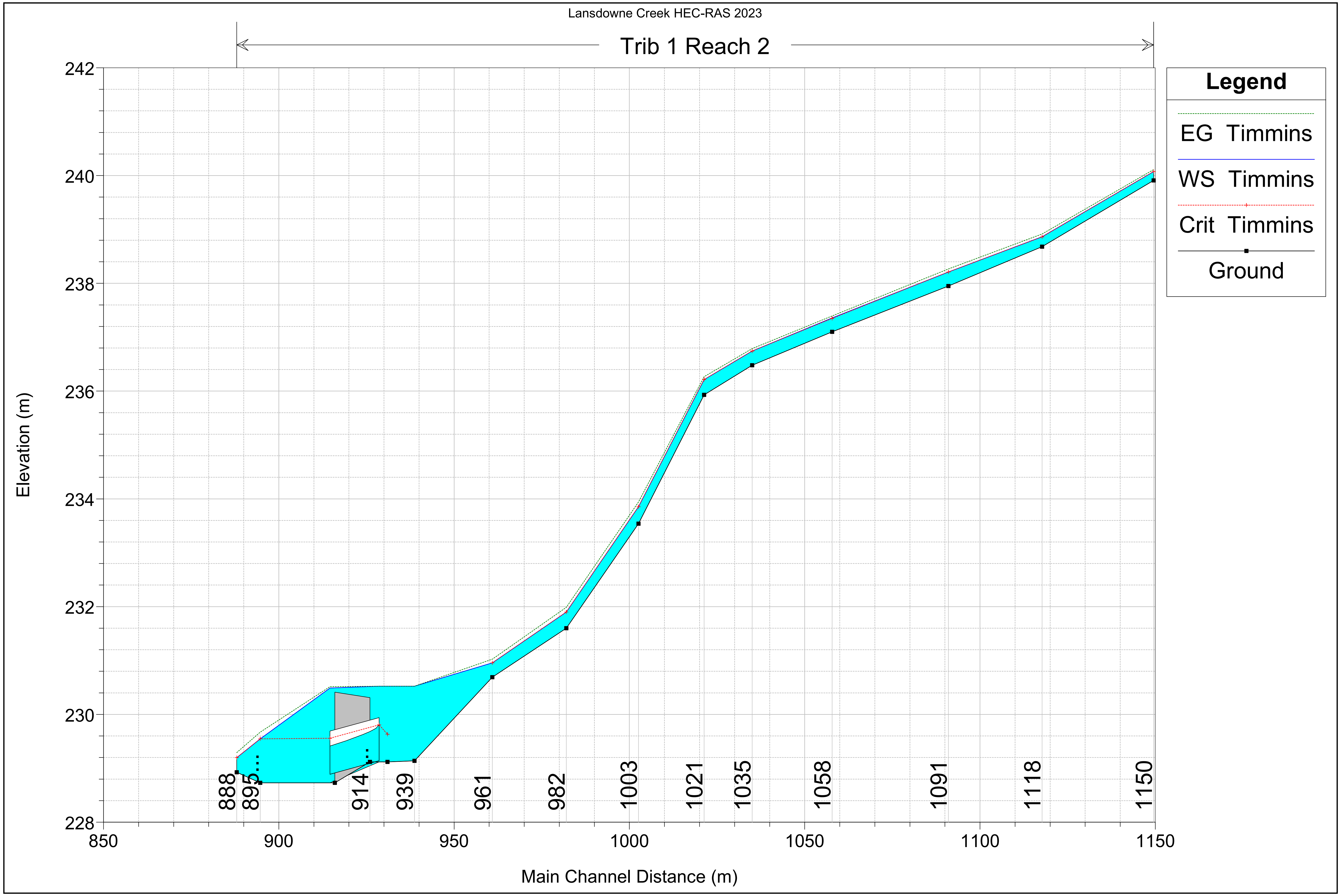
Project number: 23016 Date: Dec. 12, 2023	NAD83-UTM Zone 17 Size: 11*17

0 250 500 m

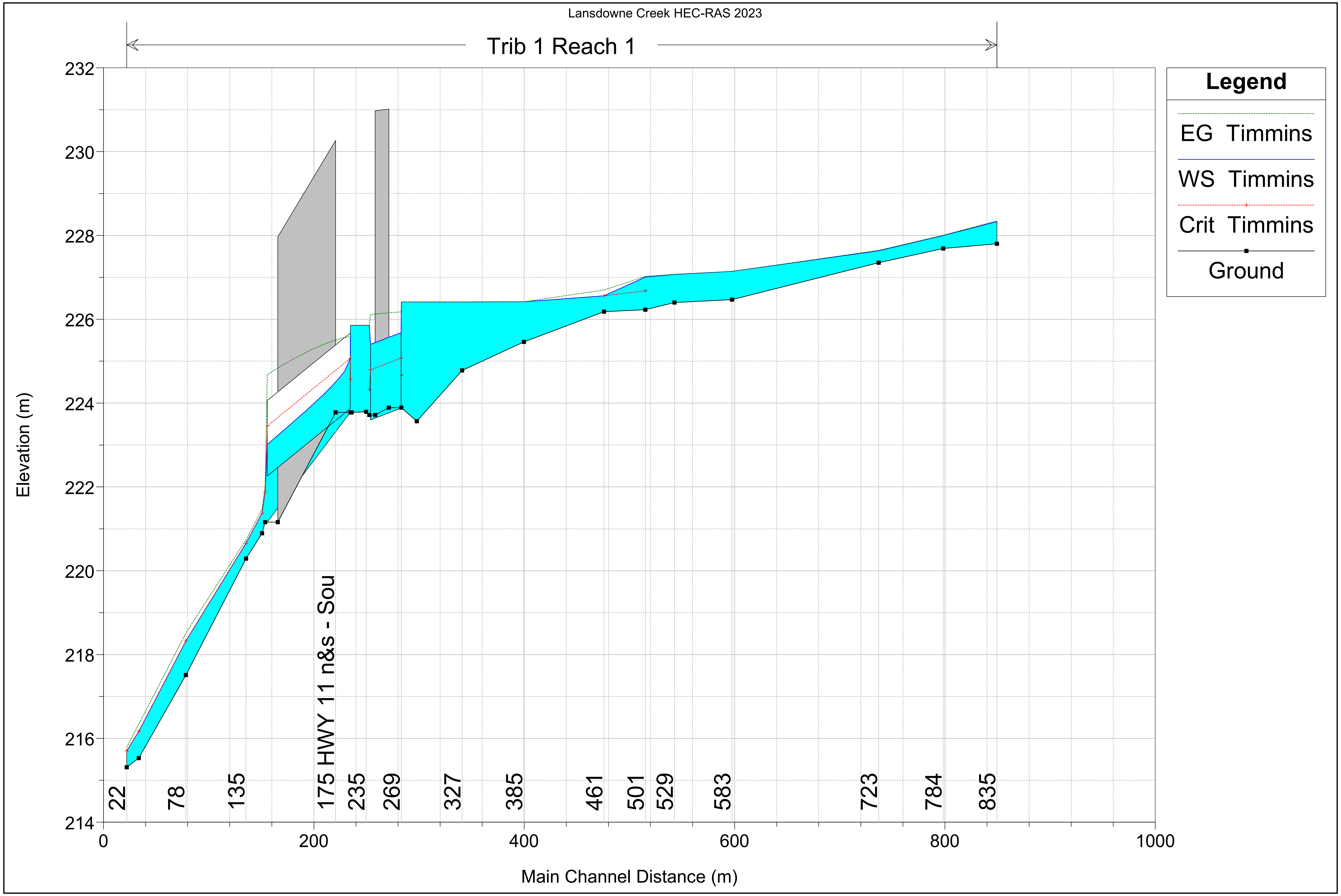
N



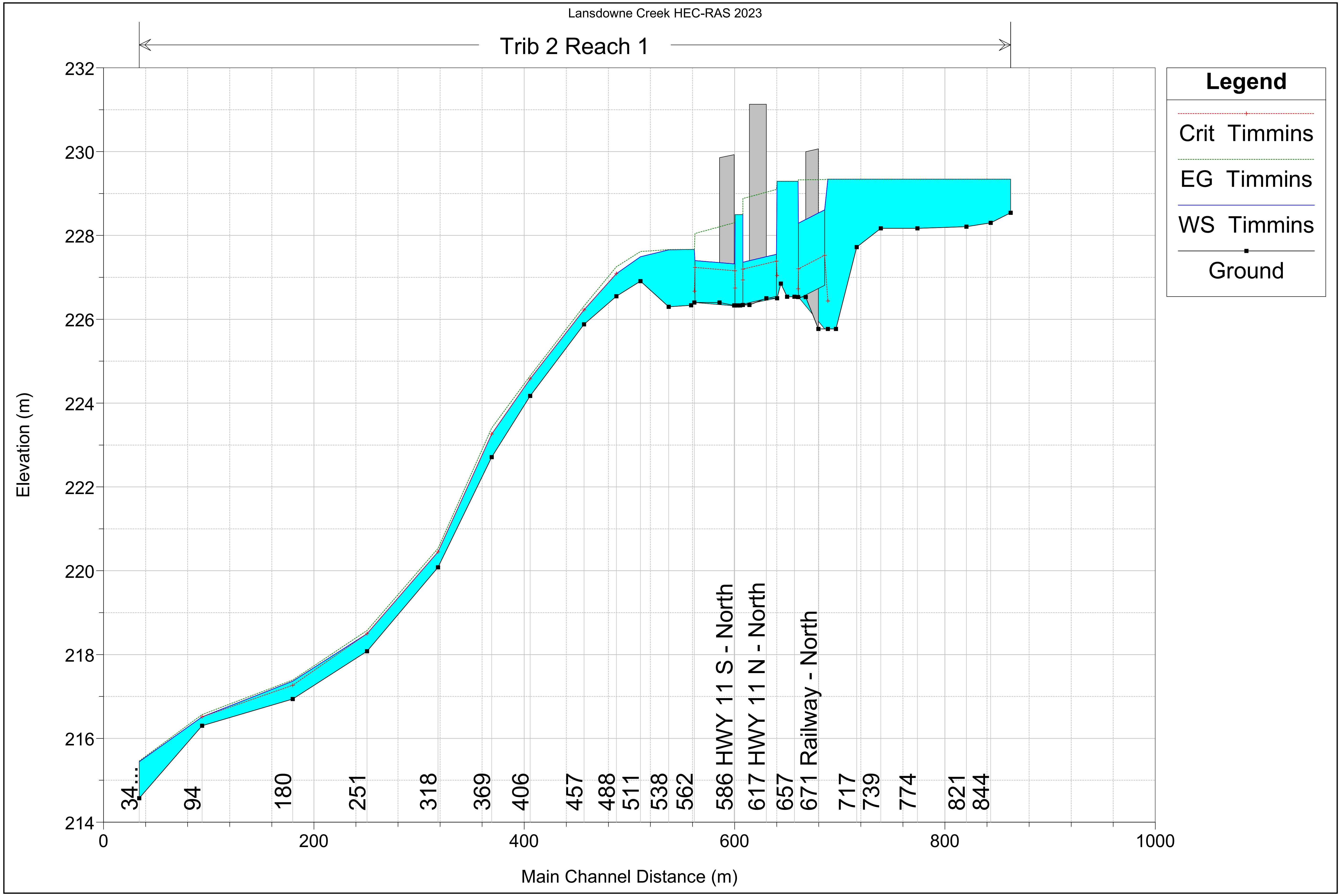
Lansdowne Creek HEC-RAS 2023
Lansdowne Reach 1-Lower
Legend
EG Timmins
WS Timmins
Crit Timmins
Ground
Elevation (m)
215
210
205
200
195
Main Channel Distance (m)
200
400
600
800
1000
1200
1400
94
130
166
209
240 Yard 2
326
381
417
463
511
559
593
636
678
715
756
791
811 Callander Bay Dr
875
906 Driveway 6
946 Eglington Rd N
1018
1060
1118
1155 Driveway 4
1199 Driveway 2
1240
1279
1332
1403
1488

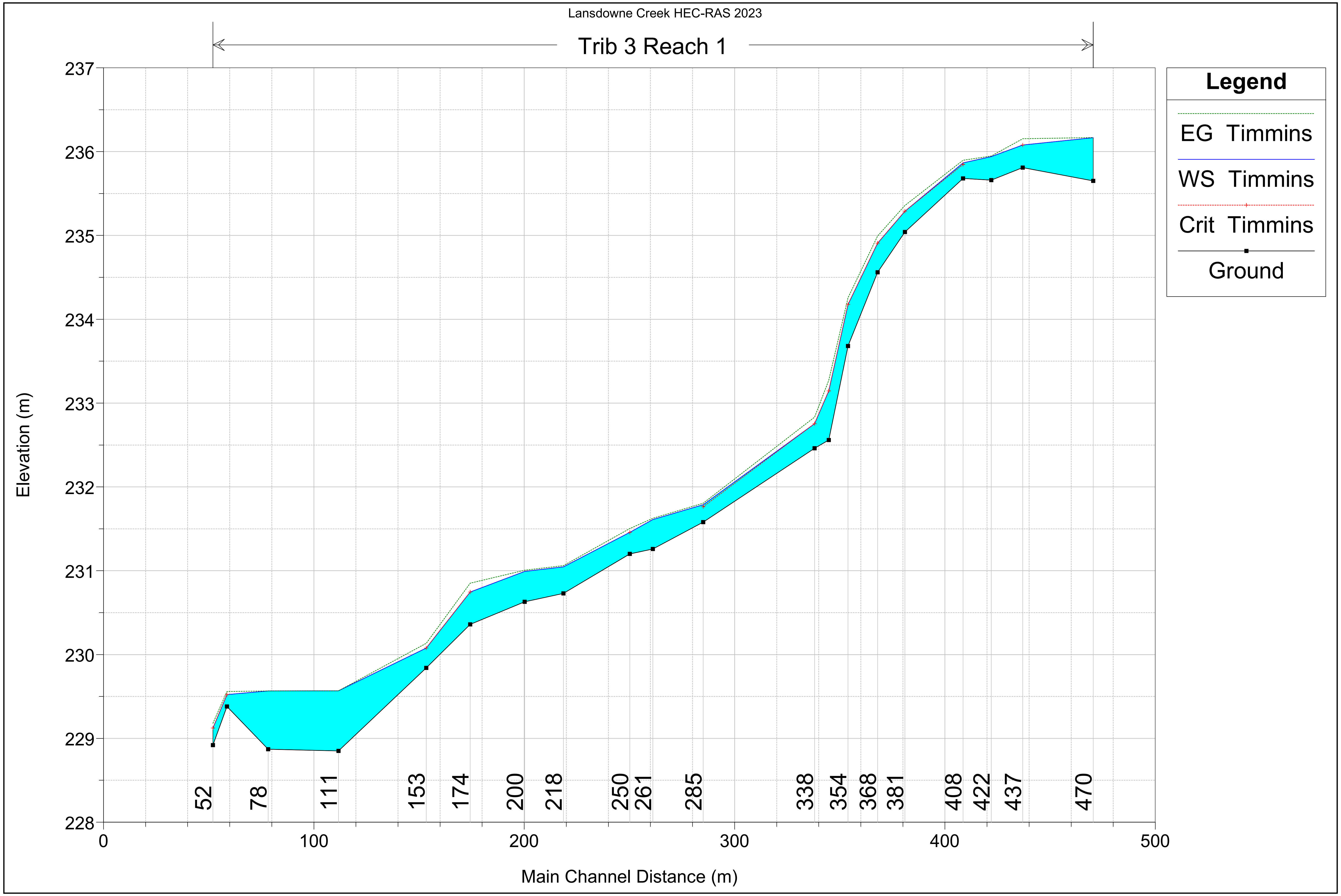


Lansdowne Creek HEC-RAS 2023
Trib 1 Reach 2
Legend
EG Timmins
WS Timmins
Crit Timmins
Ground
Elevation (m)
242
240
238
236
234
232
230
228
850
900
950
1000
1050
1100
1150
Main Channel Distance (m)
888
895
914
939
961
982
1003
1021
1035
1058
1091
1118
1150

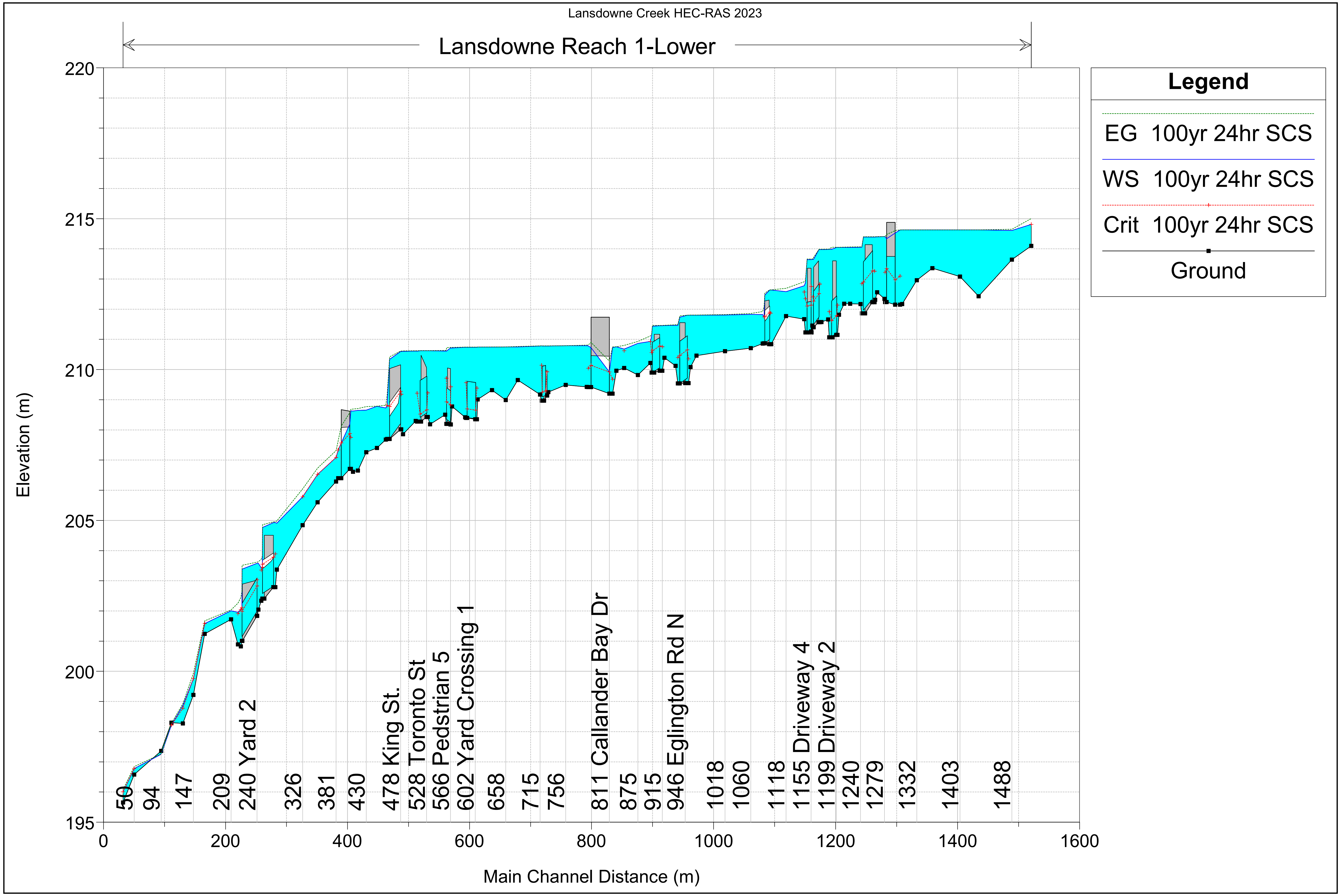


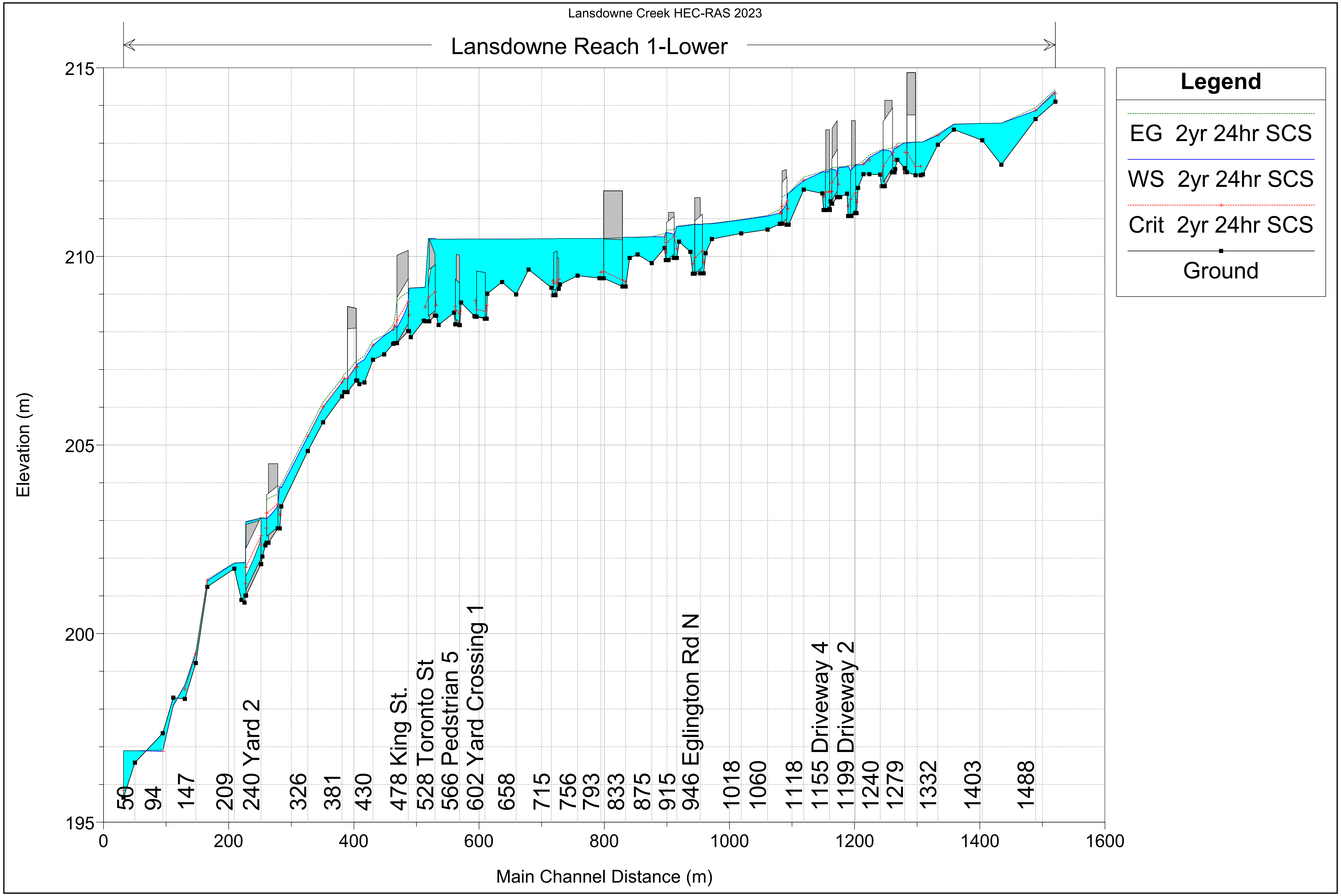
Lansdowne Creek HEC-RAS 2023
Trib 1 Reach 1
Legend
EG Timmins
WS Timmins
Crit Timmins
Ground
Elevation (m)
Main Channel Distance (m)
232
230
228
226
224
222
220
218
216
214
0
200
400
600
800
1000
22
78
135
175 HWY 11 n&s - Sou
235
269
327
385
461
501
529
583
723
784
835


Lansdowne Creek HEC-RAS 2023
Trib 2 Reach 1
Legend
Crit Timmins
EG Timmins
WS Timmins
Ground
Elevation (m)
Main Channel Distance (m)
HWY 11 S - North
HWY 11 N - North
Railway - North
232
230
228
226
224
222
220
218
216
214
0
200
400
600
800
1000
34....
94
180
251
318
369
406
457
488
511
538
562
586
617
657
671
717
739
774
821
844

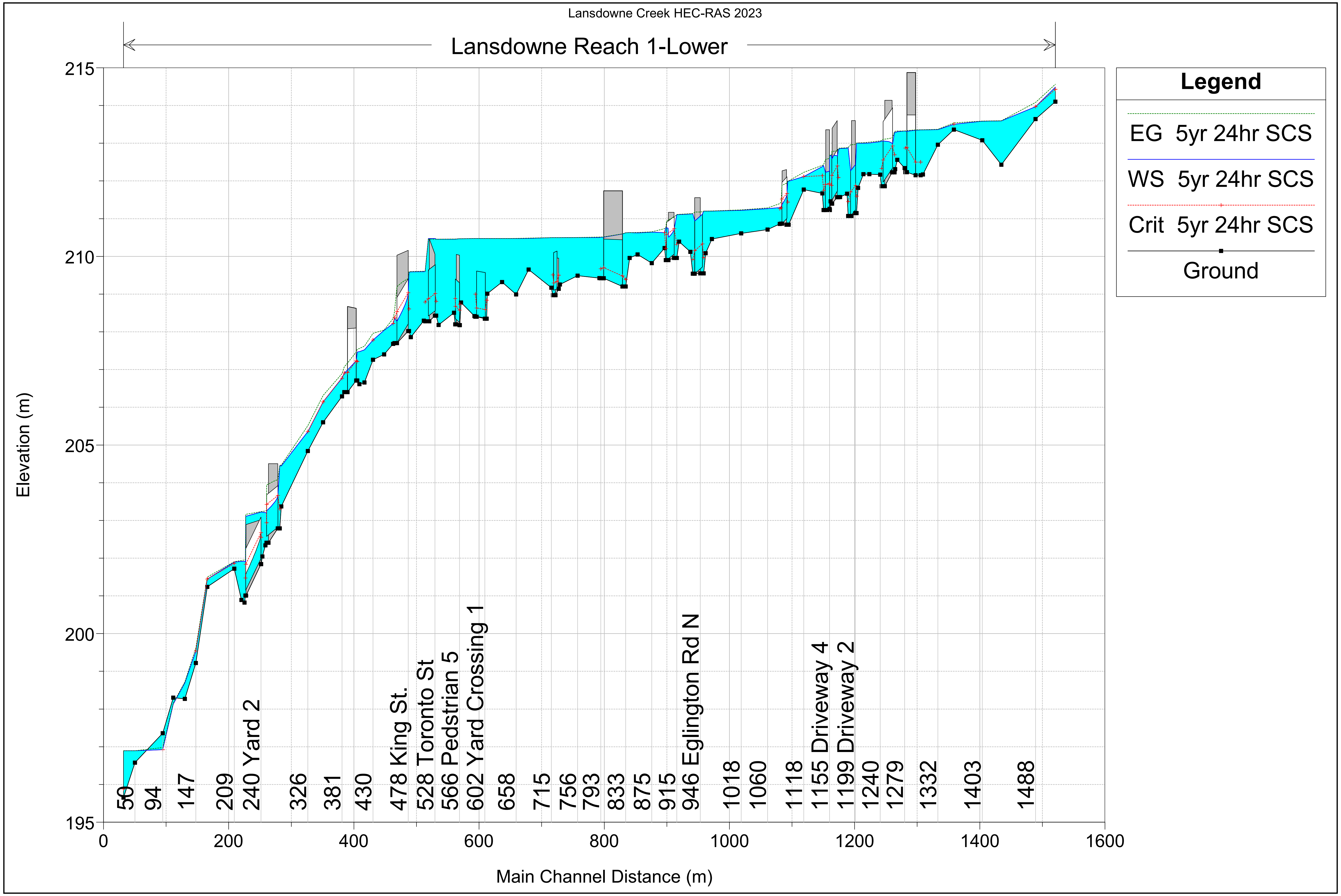


Lansdowne Creek HEC-RAS 2023
Trib 3 Reach 1
Legend
EG Timmins
WS Timmins
Crit Timmins
Ground
Elevation (m)
237
236
235
234
233
232
231
230
229
228
52
78
111
153
174
200
218
250
261
285
338
354
368
381
408
422
437
470
0
100
200
300
400
500
Main Channel Distance (m)

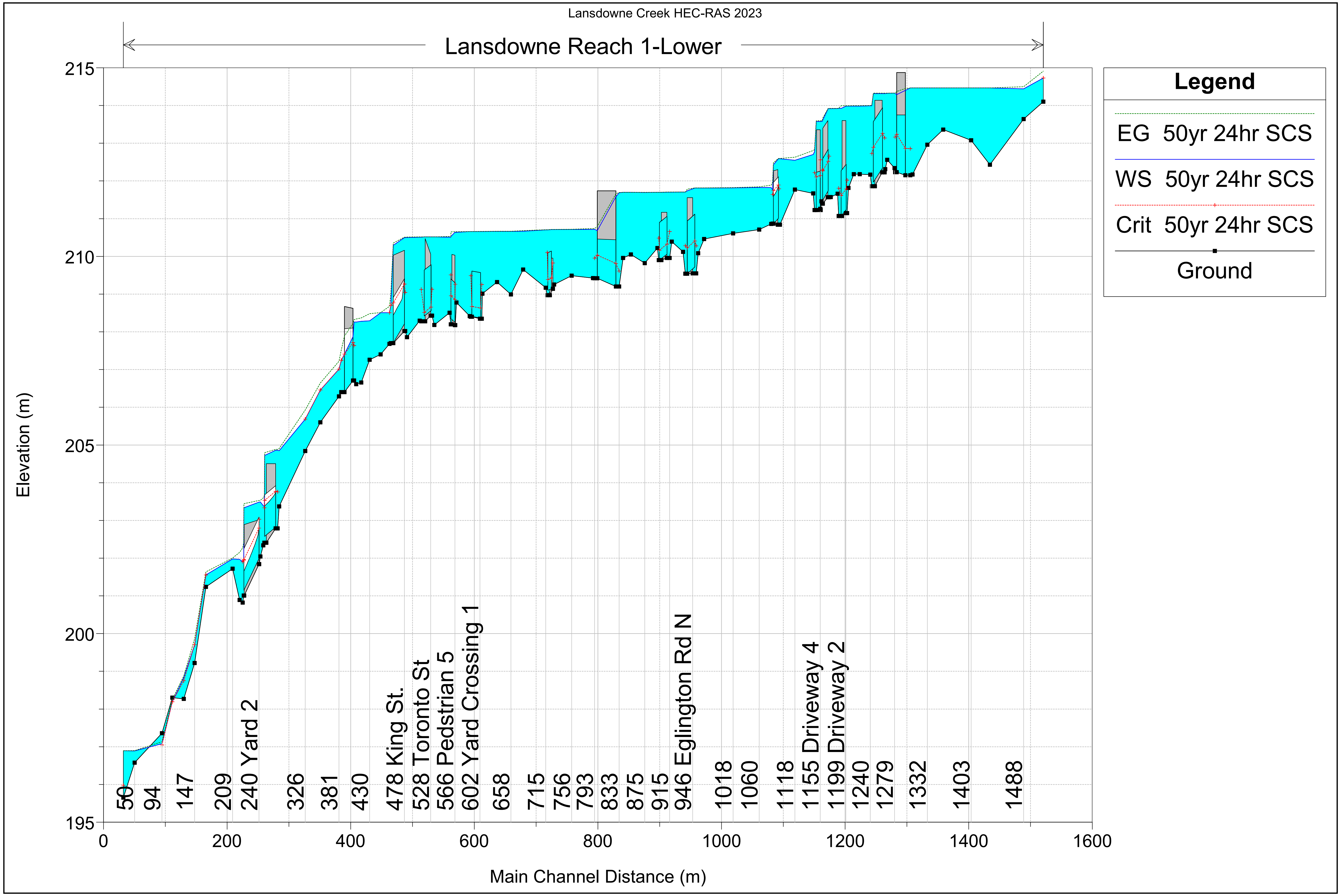

Lansdowne Creek HEC-RAS 2023
Lansdowne Reach 1-Lower
Legend
EG 100yr 24hr SCS
WS 100yr 24hr SCS
Crit 100yr 24hr SCS
Ground
Elevation (m)
Main Channel Distance (m)
50
94
147
209
240 Yard 2
326
381
430
478 King St.
528 Toronto St
566 Pedstrian 5
602 Yard Crossing 1
658
715
756
811 Callander Bay Dr
875
915
946 Eglington Rd N
1018
1060
1118
1155 Driveway 4
1199 Driveway 2
1240
1279
1332
1403
1488



Lansdowne Creek HEC-RAS 2023
Lansdowne Reach 1-Lower
Legend
EG 2yr 24hr SCS
WS 2yr 24hr SCS
Crit 2yr 24hr SCS
Ground
Elevation (m)
Main Channel Distance (m)
215
210
205
200
195
0
200
400
600
800
1000
1200
1400
1600
50
94
147
209
240 Yard 2
326
381
430
478 King St.
528 Toronto St
566 Pedstrian 5
602 Yard Crossing 1
658
715
756
793
833
875
915
946 Eglington Rd N
1018
1060
1118
1155 Driveway 4
1199 Driveway 2
1240
1279
1332
1403
1488



Lansdowne Creek HEC-RAS 2023
Lansdowne Reach 1-Lower
Legend
EG 5yr 24hr SCS
WS 5yr 24hr SCS
Crit 5yr 24hr SCS
Ground
Elevation (m)
Main Channel Distance (m)
215
210
205
200
195
0
200
400
600
800
1000
1200
1400
1600
50
94
147
209
240 Yard 2
326
381
430
478 King St.
528 Toronto St
566 Pedstrian 5
602 Yard Crossing 1
658
715
756
793
833
875
915
946 Eglington Rd N
1018
1060
1118
1155 Driveway 4
1199 Driveway 2
1240
1279
1332
1403
1488



Lansdowne Creek HEC-RAS 2023
Lansdowne Reach 1-Lower
Legend
EG 50yr 24hr SCS
WS 50yr 24hr SCS
Crit 50yr 24hr SCS
Ground
Elevation (m)
Main Channel Distance (m)
215
210
205
200
195
0
200
400
600
800
1000
1200
1400
1600
50
94
147
209
240 Yard 2
326
381
430
478 King St.
528 Toronto St
566 Pedstrian 5
602 Yard Crossing 1
658
715
756
793
833
875
915
946 Eglington Rd N
1018
1060
1118
1155 Driveway 4
1199 Driveway 2
1240
1279
1332
1403
1488

Project Name: Lansdowne Creek FPM

Project Number: 23016

HEC-RAS Output Tables

Date 20231212

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Trib 3	Reach 1	470	Timmins	1.51	235.65	236.17		236.17	0.000056	0.11	14.11	39.54	0.06
Trib 3	Reach 1	470	2yr 24hr SCS	0.11	235.65	235.94		235.94	0.000004	0.02	5.94	31.25	0.01
Trib 3	Reach 1	470	5yr 24hr SCS	0.26	235.65	235.99		235.99	0.000011	0.03	7.48	33.46	0.02
Trib 3	Reach 1	470	10yr 24hr SCS	0.42	235.65	236.02		236.02	0.000018	0.05	8.7	35.09	0.03
Trib 3	Reach 1	470	25yr 24hr SCS	0.68	235.65	236.07		236.07	0.000029	0.07	10.29	36.11	0.04
Trib 3	Reach 1	470	50yr 24hr SCS	0.89	235.65	236.1		236.1	0.000036	0.08	11.38	36.94	0.04
Trib 3	Reach 1	470	100yr 24hr SCS	1.13	235.65	236.13		236.13	0.000044	0.09	12.5	38.11	0.05
Trib 3	Reach 1	470	200yr 24hr SCS	1.42	235.65	236.16		236.16	0.000053	0.1	13.75	39.27	0.06
Trib 3	Reach 1	437	Timmins	1.51	235.81	236.08	236.08	236.15	0.023814	1.2	1.25	8.72	1.01
Trib 3	Reach 1	437	2yr 24hr SCS	0.11	235.81	235.91	235.91	235.93	0.032563	0.69	0.16	3.28	0.99
Trib 3	Reach 1	437	5yr 24hr SCS	0.26	235.81	235.95	235.95	235.98	0.029965	0.79	0.33	5.19	0.99
Trib 3	Reach 1	437	10yr 24hr SCS	0.42	235.81	235.98	235.98	236.01	0.028042	0.88	0.48	6.08	1
Trib 3	Reach 1	437	25yr 24hr SCS	0.68	235.81	236.01	236.01	236.06	0.027227	0.99	0.68	7.01	1.02
Trib 3	Reach 1	437	50yr 24hr SCS	0.89	235.81	236.03	236.03	236.09	0.025995	1.06	0.84	7.52	1.02
Trib 3	Reach 1	437	100yr 24hr SCS	1.13	235.81	236.05	236.05	236.11	0.024765	1.12	1.01	8.03	1.01
Trib 3	Reach 1	437	200yr 24hr SCS	1.42	235.81	236.07	236.07	236.14	0.024085	1.19	1.2	8.56	1.01
Trib 3	Reach 1	422	Timmins	1.51	235.66	235.94		235.95	0.001593	0.4	3.78	18.21	0.28
Trib 3	Reach 1	422	2yr 24hr SCS	0.11	235.66	235.78		235.78	0.000258	0.09	1.2	13.48	0.1
Trib 3	Reach 1	422	5yr 24hr SCS	0.26	235.66	235.82		235.82	0.000517	0.15	1.68	14.47	0.14
Trib 3	Reach 1	422	10yr 24hr SCS	0.42	235.66	235.84		235.84	0.000746	0.2	2.09	15.98	0.18
Trib 3	Reach 1	422	25yr 24hr SCS	0.68	235.66	235.87		235.88	0.001011	0.26	2.6	16.78	0.21
Trib 3	Reach 1	422	50yr 24hr SCS	0.89	235.66	235.89		235.9	0.001184	0.3	2.94	17.24	0.23
Trib 3	Reach 1	422	100yr 24hr SCS	1.13	235.66	235.91		235.92	0.001364	0.34	3.29	17.66	0.25
Trib 3	Reach 1	422	200yr 24hr SCS	1.42	235.66	235.93		235.94	0.001543	0.39	3.67	18.09	0.27
Trib 3	Reach 1	408	Timmins	1.51	235.68	235.86	235.85	235.9	0.015895	0.79	1.9	18.41	0.79
Trib 3	Reach 1	408	2yr 24hr SCS	0.11	235.68	235.76		235.77	0.015545	0.34	0.32	10.86	0.63
Trib 3	Reach 1	408	5yr 24hr SCS	0.26	235.68	235.79	235.77	235.8	0.016053	0.45	0.57	12.99	0.69
Trib 3	Reach 1	408	10yr 24hr SCS	0.42	235.68	235.8		235.82	0.015957	0.51	0.82	15.44	0.71
Trib 3	Reach 1	408	25yr 24hr SCS	0.68	235.68	235.82	235.81	235.84	0.016239	0.6	1.13	16.78	0.74
Trib 3	Reach 1	408	50yr 24hr SCS	0.89	235.68	235.83	235.82	235.86	0.016322	0.65	1.36	17.86	0.76
Trib 3	Reach 1	408	100yr 24hr SCS	1.13	235.68	235.85	235.83	235.87	0.016058	0.71	1.58	18.12	0.77
Trib 3	Reach 1	408	200yr 24hr SCS	1.42	235.68	235.86	235.85	235.89	0.015943	0.78	1.83	18.34	0.78
Trib 3	Reach 1	381	Timmins	1.51	235.04	235.29	235.29	235.36	0.024361	1.16	1.3	9.77	1.01
Trib 3	Reach 1	381	2yr 24hr SCS	0.11	235.04	235.13	235.13	235.15	0.035021	0.64	0.17	4.12	1
Trib 3	Reach 1	381	5yr 24hr SCS	0.26	235.04	235.17	235.17	235.2	0.030568	0.76	0.34	5.66	1
Trib 3	Reach 1	381	10yr 24hr SCS	0.42	235.04	235.19	235.19	235.23	0.029685	0.86	0.49	6.58	1.02
Trib 3	Reach 1	381	25yr 24hr SCS	0.68	235.04	235.22	235.22	235.27	0.026772	0.95	0.72	7.77	1
Trib 3	Reach 1	381	50yr 24hr SCS	0.89	235.04	235.24	235.24	235.29	0.025991	1.02	0.88	8.4	1.01
Trib 3	Reach 1	381	100yr 24hr SCS	1.13	235.04	235.26	235.26	235.32	0.025552	1.08	1.04	8.96	1.01
Trib 3	Reach 1	381	200yr 24hr SCS	1.42	235.04	235.28	235.28	235.35	0.024683	1.14	1.24	9.58	1.02
Trib 3	Reach 1	368	Timmins	1.51	234.56	234.91	234.91	234.99	0.022921	1.3	1.16	7.01	1.02
Trib 3	Reach 1	368	2yr 24hr SCS	0.11	234.56	234.67	234.67	234.7	0.029835	0.83	0.13	1.9	1
Trib 3	Reach 1	368	5yr 24hr SCS	0.26	234.56	234.73	234.73	234.78	0.026679	0.98	0.26	2.69	1
Trib 3	Reach 1	368	10yr 24hr SCS	0.42	234.56	234.77	234.77	234.83	0.026093	1.04	0.4	3.72	1.01
Trib 3	Reach 1	368	25yr 24hr SCS	0.68	234.56	234.83	234.83	234.88	0.025192	1.05	0.65	5.75	1
Trib 3	Reach 1	368	50yr 24hr SCS	0.89	234.56	234.85	234.85	234.92	0.025402	1.14	0.78	6.24	1.02
Trib 3	Reach 1	368	100yr 24hr SCS	1.13	234.56	234.87	234.87	234.95	0.024209	1.21	0.94	6.56	1.02
Trib 3	Reach 1	368	200yr 24hr SCS	1.42	234.56	234.9	234.9	234.98	0.02324	1.28	1.11	6.9	1.02
Trib 3	Reach 1	354	Timmins	1.51	233.68	234.18	234.18	234.26	0.021541	1.25	1.21	7.28	0.98
Trib 3	Reach 1	354	2yr 24hr SCS	0.11	233.68	233.85	233.85	233.9	0.028772	0.95	0.12	1.27	1.01
Trib 3	Reach 1	354	5yr 24hr SCS	0.26	233.68	233.93	233.93	233.99	0.02582	1.14	0.23	1.79	1.01
Trib 3	Reach 1	354	10yr 24hr SCS	0.42	233.68	233.98	233.98	234.06	0.024459	1.22	0.34	2.33	1.01
Trib 3	Reach 1	354	25yr 24hr SCS	0.68	233.68	234.05	234.05	234.13	0.024757	1.21	0.56	3.95	1.02
Trib 3	Reach 1	354	50yr 24hr SCS	0.89	233.68	234.09	234.09	234.17	0.022231	1.23	0.72	4.52	0.99
Trib 3	Reach 1	354	100yr 24hr SCS	1.13	233.68	234.12	234.12	234.21	0.023262	1.31	0.86	5.09	1.02
Trib 3	Reach 1	354	200yr 24hr SCS	1.42	233.68	234.16	234.16	234.25	0.020593	1.29	1.1	6.15	0.97
Trib 3	Reach 1	344	Timmins	1.51	232.56	233.15	233.15	233.27	0.020353	1.58	0.96	3.74	1
Trib 3	Reach 1	344	2yr 24hr SCS	0.11	232.56	232.75	232.75	232.8	0.027976	0.99	0.11	1.1	1
Trib 3	Reach 1	344	5yr 24hr SCS	0.26	232.56	232.83	232.83	232.91	0.025453	1.19	0.22	1.52	1.01
Trib 3	Reach 1	344	10yr 24hr SCS	0.42	232.56	232.89	232.89	232.98	0.02421	1.32	0.32	1.83	1.01
Trib 3	Reach 1	344	25yr 24hr SCS	0.68	232.56	232.97	232.97	233.07	0.022649	1.46	0.47	2.21	1.01
Trib 3	Reach 1	344	50yr 24hr SCS	0.89	232.56	233.01	233.01	233.13	0.021907	1.54	0.58	2.47	1.01
Trib 3	Reach 1	344	100yr 24hr SCS	1.13	232.56	233.06	233.06	233.19	0.021185	1.61	0.7	2.73	1.01
Trib 3	Reach 1	344	200yr 24hr SCS	1.42	232.56	233.11	233.11	233.26	0.021809	1.72	0.83	2.97	1.04

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Trib 3	Reach 1	338	Timmins	1.51	232.46	232.75	232.75	232.83	0.02276	1.24	1.23	8.33	1.01
Trib 3	Reach 1	338	2yr 24hr SCS	0.11	232.46	232.58	232.55	232.59	0.009445	0.48	0.23	3.25	0.57
Trib 3	Reach 1	338	5yr 24hr SCS	0.26	232.46	232.62	232.59	232.65	0.010637	0.63	0.41	4.1	0.64
Trib 3	Reach 1	338	10yr 24hr SCS	0.42	232.46	232.66	232.63	232.69	0.011195	0.72	0.59	5.06	0.67
Trib 3	Reach 1	338	25yr 24hr SCS	0.68	232.46	232.7	232.67	232.74	0.0154	0.82	0.83	7.66	0.78
Trib 3	Reach 1	338	50yr 24hr SCS	0.89	232.46	232.72	232.7	232.76	0.018324	0.95	0.94	7.82	0.87
Trib 3	Reach 1	338	100yr 24hr SCS	1.13	232.46	232.72	232.72	232.79	0.024811	1.15	0.99	7.9	1.02
Trib 3	Reach 1	338	200yr 24hr SCS	1.42	232.46	232.75	232.75	232.82	0.023251	1.22	1.17	8.23	1.01
Trib 3	Reach 1	285	Timmins	1.51	231.58	231.79	231.76	231.8	0.012364	0.6	2.52	30.8	0.67
Trib 3	Reach 1	285	2yr 24hr SCS	0.11	231.58	231.66	231.66	231.68	0.040414	0.56	0.2	6.51	1.02
Trib 3	Reach 1	285	5yr 24hr SCS	0.26	231.58	231.69	231.69	231.71	0.034858	0.63	0.41	10.28	1
Trib 3	Reach 1	285	10yr 24hr SCS	0.42	231.58	231.71	231.71	231.73	0.034414	0.64	0.66	15.59	1
Trib 3	Reach 1	285	25yr 24hr SCS	0.68	231.58	231.73	231.73	231.75	0.02281	0.61	1.11	20.58	0.85
Trib 3	Reach 1	285	50yr 24hr SCS	0.89	231.58	231.75	231.73	231.77	0.019069	0.61	1.46	24.17	0.79
Trib 3	Reach 1	285	100yr 24hr SCS	1.13	231.58	231.77	231.75	231.78	0.013771	0.57	1.97	27.74	0.69
Trib 3	Reach 1	285	200yr 24hr SCS	1.42	231.58	231.78	231.76	231.8	0.012671	0.59	2.39	30.13	0.67
Trib 3	Reach 1	261	Timmins	1.51	231.26	231.61		231.62	0.005113	0.52	2.92	22.79	0.46
Trib 3	Reach 1	261	2yr 24hr SCS	0.11	231.26	231.41		231.41	0.003107	0.29	0.38	5.02	0.33
Trib 3	Reach 1	261	5yr 24hr SCS	0.26	231.26	231.47		231.47	0.003725	0.34	0.76	8.76	0.37
Trib 3	Reach 1	261	10yr 24hr SCS	0.42	231.26	231.5		231.51	0.003834	0.38	1.09	10.72	0.38
Trib 3	Reach 1	261	25yr 24hr SCS	0.68	231.26	231.54		231.55	0.004265	0.43	1.6	14.63	0.41
Trib 3	Reach 1	261	50yr 24hr SCS	0.89	231.26	231.57		231.58	0.004275	0.45	1.99	16.99	0.42
Trib 3	Reach 1	261	100yr 24hr SCS	1.13	231.26	231.59		231.6	0.004803	0.47	2.42	21.04	0.44
Trib 3	Reach 1	261	200yr 24hr SCS	1.42	231.26	231.61		231.62	0.005069	0.51	2.8	22.46	0.46
Trib 3	Reach 1	250	Timmins	1.51	231.2	231.46	231.46	231.5	0.038498	0.96	1.71	20.06	0.88
Trib 3	Reach 1	250	2yr 24hr SCS	0.11	231.2	231.3	231.3	231.32	0.070225	0.63	0.17	4.2	0.99
Trib 3	Reach 1	250	5yr 24hr SCS	0.26	231.2	231.33	231.33	231.36	0.061719	0.78	0.33	5.25	1
Trib 3	Reach 1	250	10yr 24hr SCS	0.42	231.2	231.36	231.36	231.4	0.060233	0.87	0.48	6.43	1.01
Trib 3	Reach 1	250	25yr 24hr SCS	0.68	231.2	231.4	231.4	231.43	0.052133	0.84	0.81	10.38	0.95
Trib 3	Reach 1	250	50yr 24hr SCS	0.89	231.2	231.41	231.41	231.46	0.058982	0.96	0.93	10.93	1.03
Trib 3	Reach 1	250	100yr 24hr SCS	1.13	231.2	231.43	231.43	231.48	0.046434	0.94	1.24	15.72	0.94
Trib 3	Reach 1	250	200yr 24hr SCS	1.42	231.2	231.45	231.45	231.5	0.039391	0.95	1.61	19.73	0.88
Trib 3	Reach 1	218	Timmins	1.51	230.73	231.05		231.06	0.003402	0.54	2.78	14.87	0.4
Trib 3	Reach 1	218	2yr 24hr SCS	0.11	230.73	230.84		230.84	0.00237	0.23	0.48	7.26	0.28
Trib 3	Reach 1	218	5yr 24hr SCS	0.26	230.73	230.88		230.89	0.002968	0.31	0.83	9.16	0.33
Trib 3	Reach 1	218	10yr 24hr SCS	0.42	230.73	230.91		230.92	0.00302	0.37	1.14	9.98	0.35
Trib 3	Reach 1	218	25yr 24hr SCS	0.68	230.73	230.95		230.96	0.003285	0.44	1.54	11.04	0.38
Trib 3	Reach 1	218	50yr 24hr SCS	0.89	230.73	230.98		230.99	0.003497	0.48	1.84	11.92	0.39
Trib 3	Reach 1	218	100yr 24hr SCS	1.13	230.73	231.01		231.02	0.003686	0.5	2.25	14.38	0.41
Trib 3	Reach 1	218	200yr 24hr SCS	1.42	230.73	231.04		231.05	0.003476	0.54	2.65	14.76	0.4
Trib 3	Reach 1	200	Timmins	1.51	230.63	230.99		231.01	0.002555	0.52	2.93	13.63	0.36
Trib 3	Reach 1	200	2yr 24hr SCS	0.11	230.63	230.78		230.78	0.005157	0.28	0.4	7.96	0.4
Trib 3	Reach 1	200	5yr 24hr SCS	0.26	230.63	230.82		230.82	0.004213	0.34	0.76	9.51	0.39
Trib 3	Reach 1	200	10yr 24hr SCS	0.42	230.63	230.85	230.79	230.86	0.003877	0.37	1.13	11.7	0.38
Trib 3	Reach 1	200	25yr 24hr SCS	0.68	230.63	230.89		230.9	0.003329	0.42	1.61	12.37	0.37
Trib 3	Reach 1	200	50yr 24hr SCS	0.89	230.63	230.92		230.93	0.003111	0.45	1.96	12.83	0.37
Trib 3	Reach 1	200	100yr 24hr SCS	1.13	230.63	230.95		230.96	0.002839	0.48	2.36	13.34	0.36
Trib 3	Reach 1	200	200yr 24hr SCS	1.42	230.63	230.98		231	0.00262	0.51	2.79	13.56	0.36
Trib 3	Reach 1	174	Timmins	1.51	230.36	230.75	230.75	230.85	0.021192	1.43	1.05	5.15	1.01
Trib 3	Reach 1	174	2yr 24hr SCS	0.11	230.36	230.5	230.49	230.53	0.023735	0.74	0.15	2.11	0.9
Trib 3	Reach 1	174	5yr 24hr SCS	0.26	230.36	230.55	230.55	230.6	0.027097	0.97	0.27	2.84	1.01
Trib 3	Reach 1	174	10yr 24hr SCS	0.42	230.36	230.59	230.59	230.65	0.025764	1.09	0.39	3.3	1.02
Trib 3	Reach 1	174	25yr 24hr SCS	0.68	230.36	230.64	230.64	230.71	0.023156	1.2	0.57	3.86	1
Trib 3	Reach 1	174	50yr 24hr SCS	0.89	230.36	230.67	230.67	230.75	0.022805	1.29	0.69	4.21	1.01
Trib 3	Reach 1	174	100yr 24hr SCS	1.13	230.36	230.7	230.7	230.79	0.022081	1.35	0.84	4.59	1.01
Trib 3	Reach 1	174	200yr 24hr SCS	1.42	230.36	230.74	230.74	230.84	0.021156	1.41	1.01	5.03	1.01
Trib 3	Reach 1	153	Timmins	1.51	229.84	230.08	230.08	230.13	0.026471	1.06	1.43	13.1	1.02
Trib 3	Reach 1	153	2yr 24hr SCS	0.11	229.84	229.92	229.92	229.95	0.033152	0.68	0.16	3.42	1
Trib 3	Reach 1	153	5yr 24hr SCS	0.26	229.84	229.96	229.96	230	0.027904	0.85	0.31	4.04	0.99
Trib 3	Reach 1	153	10yr 24hr SCS	0.42	229.84	230	230	230.03	0.028508	0.75	0.56	9.23	0.96
Trib 3	Reach 1	153	25yr 24hr SCS	0.68	229.84	230.02	230.02	230.06	0.028049	0.87	0.78	9.99	1
Trib 3	Reach 1	153	50yr 24hr SCS	0.89	229.84	230.03	230.03	230.08	0.029208	0.97	0.92	10.43	1.04
Trib 3	Reach 1	153	100yr 24hr SCS	1.13	229.84	230.06	230.06	230.1	0.027038	0.97	1.17	12.41	1.01
Trib 3	Reach 1	153	200yr 24hr SCS	1.42	229.84	230.07	230.07	230.13	0.025647	1.02	1.39	13.04	1
Trib 3	Reach 1	111	Timmins	1.51	228.85	229.57		229.57	0.000086	0.16	9.62	21.63	0.07
Trib 3	Reach 1	111	2yr 24hr SCS	0.11	228.85	229.45		229.45	0.000001	0.02	7.24	20.11	0.01
Trib 3	Reach 1	111	5yr 24hr SCS	0.26	228.85	229.48		229.48	0.000005	0.03	7.75	20.44	0.02
Trib 3	Reach 1	111	10yr 24hr SCS	0.42	228.85	229.5		229.5	0.000011	0.05	8.11	20.68	0.03
Trib 3	Reach 1	111	25yr 24hr SCS	0.68	228.85	229.52		229.52	0.000025	0.08	8.56	20.97	0.04
Trib 3	Reach 1	111	50yr 24hr SCS	0.89	228.85	229.53		229.53	0.000038	0.1	8.86	21.16	0.05
Trib 3	Reach 1	111	100yr 24hr SCS	1.13	228.85	229.55		229.55	0.000056	0.12	9.17	21.35	0.06
Trib 3	Reach 1	111	200yr 24hr SCS	1.42	228.85	229.56		229.56	0.000079	0.15	9.51	21.57	0.07

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Trib 3	Reach 1	78	Timmins	1.51	228.87	229.57		229.57	0.000047	0.11	13.3	30.21	0.05
Trib 3	Reach 1	78	2yr 24hr SCS	0.11	228.87	229.45		229.45	0.000001	0.01	10	28.6	0.01
Trib 3	Reach 1	78	5yr 24hr SCS	0.26	228.87	229.48		229.48	0.000003	0.02	10.72	28.92	0.01
Trib 3	Reach 1	78	10yr 24hr SCS	0.42	228.87	229.5		229.5	0.000006	0.04	11.23	29.16	0.02
Trib 3	Reach 1	78	25yr 24hr SCS	0.68	228.87	229.52		229.52	0.000014	0.06	11.85	29.46	0.03
Trib 3	Reach 1	78	50yr 24hr SCS	0.89	228.87	229.53		229.53	0.000021	0.07	12.26	29.65	0.04
Trib 3	Reach 1	78	100yr 24hr SCS	1.13	228.87	229.55		229.55	0.000031	0.09	12.69	29.85	0.04
Trib 3	Reach 1	78	200yr 24hr SCS	1.42	228.87	229.56		229.56	0.000043	0.11	13.15	30.07	0.05
Trib 3	Reach 1	58	Timmins	1.51	229.38	229.52	229.52	229.56	0.030281	0.84	1.79	25.53	1.02
Trib 3	Reach 1	58	2yr 24hr SCS	0.11	229.38	229.44	229.44	229.45	0.046655	0.52	0.21	8.64	1.06
Trib 3	Reach 1	58	5yr 24hr SCS	0.26	229.38	229.46	229.46	229.48	0.036836	0.58	0.45	13.31	1
Trib 3	Reach 1	58	10yr 24hr SCS	0.42	229.38	229.47	229.47	229.49	0.035271	0.61	0.69	18.19	0.99
Trib 3	Reach 1	58	25yr 24hr SCS	0.68	229.38	229.49	229.49	229.51	0.034939	0.68	0.99	21.62	1.02
Trib 3	Reach 1	58	50yr 24hr SCS	0.89	229.38	229.5	229.5	229.53	0.032646	0.71	1.25	24.23	1
Trib 3	Reach 1	58	100yr 24hr SCS	1.13	229.38	229.51	229.51	229.54	0.031643	0.77	1.46	24.76	1.01
Trib 3	Reach 1	58	200yr 24hr SCS	1.42	229.38	229.52	229.52	229.55	0.029142	0.82	1.74	25.42	1
Trib 3	Reach 1	52	Timmins	1.51	228.92	229.19		229.21	0.006213	0.62	2.44	17.22	0.52
Trib 3	Reach 1	52	2yr 24hr SCS	0.11	228.92	229.01	228.99	229.02	0.010348	0.37	0.3	6.47	0.55
Trib 3	Reach 1	52	5yr 24hr SCS	0.26	228.92	229.06	229.02	229.06	0.007265	0.4	0.65	9.81	0.49
Trib 3	Reach 1	52	10yr 24hr SCS	0.42	228.92	229.07	229.04	229.08	0.011324	0.53	0.79	10.78	0.63
Trib 3	Reach 1	52	25yr 24hr SCS	0.68	228.92	229.09	229.07	229.11	0.016332	0.7	0.97	11.36	0.77
Trib 3	Reach 1	52	50yr 24hr SCS	0.89	228.92	229.11	229.09	229.13	0.013711	0.72	1.24	12.5	0.73
Trib 3	Reach 1	52	100yr 24hr SCS	1.13	228.92	229.13	229.1	229.16	0.013294	0.76	1.49	13.44	0.73
Trib 3	Reach 1	52	200yr 24hr SCS	1.42	228.92	229.17		229.19	0.008835	0.69	2.08	16.44	0.61
Trib 2	Reach 1	863	Timmins	2.15	228.54	229.34		229.34	0.00012	0.19	11.53	27.79	0.09
Trib 2	Reach 1	863	2yr 24hr SCS	0.12	228.54	228.67	228.64	228.68	0.012825	0.43	0.28	5.64	0.62
Trib 2	Reach 1	863	5yr 24hr SCS	0.24	228.54	228.68	228.68	228.7	0.028449	0.69	0.35	6.34	0.94
Trib 2	Reach 1	863	10yr 24hr SCS	0.39	228.54	228.7	228.7	228.73	0.032607	0.79	0.49	8.14	1.03
Trib 2	Reach 1	863	25yr 24hr SCS	0.64	228.54	228.72	228.72	228.77	0.027667	0.89	0.72	8.82	1
Trib 2	Reach 1	863	50yr 24hr SCS	0.87	228.54	228.74	228.74	228.79	0.027257	0.99	0.88	9.19	1.02
Trib 2	Reach 1	863	100yr 24hr SCS	1.12	228.54	228.77	228.77	228.82	0.025664	1.02	1.09	10.3	1
Trib 2	Reach 1	863	200yr 24hr SCS	1.44	228.54	228.78	228.78	228.85	0.025213	1.12	1.29	10.53	1.02
Trib 2	Reach 1	844	Timmins	2.15	228.3	229.34		229.34	0.000006	0.07	33.98	40.75	0.02
Trib 2	Reach 1	844	2yr 24hr SCS	0.12	228.3	228.36		228.37	0.021567	0.36	0.34	13.63	0.72
Trib 2	Reach 1	844	5yr 24hr SCS	0.24	228.3	228.39		228.39	0.010414	0.31	0.78	22.99	0.53
Trib 2	Reach 1	844	10yr 24hr SCS	0.39	228.3	228.4		228.41	0.007618	0.32	1.23	26.84	0.48
Trib 2	Reach 1	844	25yr 24hr SCS	0.64	228.3	228.43		228.43	0.005794	0.35	1.85	28.92	0.44
Trib 2	Reach 1	844	50yr 24hr SCS	0.87	228.3	228.44		228.45	0.005331	0.38	2.31	30	0.43
Trib 2	Reach 1	844	100yr 24hr SCS	1.12	228.3	228.46		228.47	0.00501	0.41	2.74	30.22	0.43
Trib 2	Reach 1	844	200yr 24hr SCS	1.44	228.3	228.47		228.48	0.004762	0.44	3.25	30.43	0.43
Trib 2	Reach 1	821	Timmins	2.15	228.21	229.34		229.34	0.000002	0.04	64.43	81.92	0.01
Trib 2	Reach 1	821	2yr 24hr SCS	0.12	228.21	228.31		228.31	0.000839	0.1	1.16	26.49	0.16
Trib 2	Reach 1	821	5yr 24hr SCS	0.24	228.21	228.33		228.34	0.001036	0.13	1.83	33.78	0.18
Trib 2	Reach 1	821	10yr 24hr SCS	0.39	228.21	228.35		228.35	0.001123	0.15	2.52	38.59	0.19
Trib 2	Reach 1	821	25yr 24hr SCS	0.64	228.21	228.38		228.38	0.001212	0.19	3.41	41.55	0.21
Trib 2	Reach 1	821	50yr 24hr SCS	0.87	228.21	228.39		228.39	0.001257	0.21	4.12	43.11	0.22
Trib 2	Reach 1	821	100yr 24hr SCS	1.12	228.21	228.41		228.41	0.001287	0.23	4.81	44.25	0.23
Trib 2	Reach 1	821	200yr 24hr SCS	1.44	228.21	228.43		228.43	0.001301	0.26	5.62	45.18	0.23
Trib 2	Reach 1	774	Timmins	2.15	228.17	229.34		229.34	0.000001	0.03	87.41	91.07	0.01
Trib 2	Reach 1	774	2yr 24hr SCS	0.12	228.17	228.28		228.28	0.000484	0.07	1.81	52.97	0.11
Trib 2	Reach 1	774	5yr 24hr SCS	0.24	228.17	228.3		228.3	0.000446	0.08	2.93	58.65	0.12
Trib 2	Reach 1	774	10yr 24hr SCS	0.39	228.17	228.32		228.32	0.000464	0.1	4	63.33	0.12
Trib 2	Reach 1	774	25yr 24hr SCS	0.64	228.17	228.34		228.34	0.000531	0.12	5.19	63.9	0.14
Trib 2	Reach 1	774	50yr 24hr SCS	0.87	228.17	228.36		228.36	0.000537	0.14	6.23	64.15	0.14
Trib 2	Reach 1	774	100yr 24hr SCS	1.12	228.17	228.37		228.37	0.000588	0.16	7.07	64.65	0.15
Trib 2	Reach 1	774	200yr 24hr SCS	1.44	228.17	228.39		228.39	0.000602	0.18	8.22	65.77	0.16
Trib 2	Reach 1	739	Timmins	2.15	228.17	229.34		229.34	0.000001	0.04	62.94	67.93	0.01
Trib 2	Reach 1	739	2yr 24hr SCS	0.12	228.17	228.24	228.22	228.24	0.009717	0.27	0.45	15.3	0.5
Trib 2	Reach 1	739	5yr 24hr SCS	0.24	228.17	228.25	228.24	228.26	0.010226	0.31	0.79	22.78	0.53
Trib 2	Reach 1	739	10yr 24hr SCS	0.39	228.17	228.27	228.25	228.28	0.009658	0.33	1.19	29.65	0.52
Trib 2	Reach 1	739	25yr 24hr SCS	0.64	228.17	228.29	228.27	228.29	0.009658	0.38	1.68	33.77	0.54
Trib 2	Reach 1	739	50yr 24hr SCS	0.87	228.17	228.3	228.28	228.31	0.009314	0.41	2.14	37.74	0.55
Trib 2	Reach 1	739	100yr 24hr SCS	1.12	228.17	228.3	228.28	228.31	0.017718	0.55	2.03	36.82	0.75
Trib 2	Reach 1	739	200yr 24hr SCS	1.44	228.17	228.3	228.29	228.32	0.028097	0.7	2.06	37.09	0.94
Trib 2	Reach 1	717	Timmins	2.15	227.72	229.34		229.34	0.000001	0.03	77.08	73.64	0.01
Trib 2	Reach 1	717	2yr 24hr SCS	0.12	227.72	227.83	227.83	227.85	0.036978	0.61	0.2	5.36	1.01
Trib 2	Reach 1	717	5yr 24hr SCS	0.24	227.72	227.85	227.85	227.88	0.032516	0.66	0.37	8.04	0.98
Trib 2	Reach 1	717	10yr 24hr SCS	0.39	227.72	227.87	227.87	227.9	0.033041	0.7	0.56	11.22	1
Trib 2	Reach 1	717	25yr 24hr SCS	0.64	227.72	227.9	227.9	227.92	0.031742	0.72	0.89	16.75	0.99
Trib 2	Reach 1	717	50yr 24hr SCS	0.87	227.72	227.91	227.91	227.94	0.0331	0.78	1.12	19.19	1.03
Trib 2	Reach 1	717	100yr 24hr SCS	1.12	227.72	227.94		227.96	0.013263	0.63	1.77	21.01	0.69
Trib 2	Reach 1	717	200yr 24hr SCS	1.44	227.72	228.31		228.31	0.000068	0.11	13.56	44.71	0.06

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Trib 2	Reach 1	697	Timmins	2.15	225.77	229.34		229.34	0	0.02	97.09	66.1	0.01
Trib 2	Reach 1	697	2yr 24hr SCS	0.12	225.77	227.14		227.14	0.000015	0.04	3.12	13.18	0.03
Trib 2	Reach 1	697	5yr 24hr SCS	0.24	225.77	227.24		227.24	0.000021	0.05	4.75	17.44	0.03
Trib 2	Reach 1	697	10yr 24hr SCS	0.39	225.77	227.35		227.35	0.000019	0.06	6.76	19.11	0.03
Trib 2	Reach 1	697	25yr 24hr SCS	0.64	225.77	227.53		227.53	0.000013	0.06	10.31	19.61	0.03
Trib 2	Reach 1	697	50yr 24hr SCS	0.87	225.77	227.72		227.72	0.00001	0.06	13.97	20.11	0.02
Trib 2	Reach 1	697	100yr 24hr SCS	1.12	225.77	227.96		227.96	0.000009	0.06	20.03	34.38	0.02
Trib 2	Reach 1	697	200yr 24hr SCS	1.44	225.77	228.31		228.31	0.000003	0.04	34.71	50.81	0.02
Trib 2	Reach 1	689	Timmins	2.15	225.77	229.34	226.44	229.34	0.000001	0.04	50.17	70.73	0.01
Trib 2	Reach 1	689	2yr 24hr SCS	0.12	225.77	227.14	225.98	227.14	0.000001	0.02	6.88	15.02	0.01
Trib 2	Reach 1	689	5yr 24hr SCS	0.24	225.77	227.24	226.05	227.24	0.000003	0.03	8.64	18.74	0.01
Trib 2	Reach 1	689	10yr 24hr SCS	0.39	225.77	227.35	226.11	227.35	0.000004	0.04	10.75	20.29	0.02
Trib 2	Reach 1	689	25yr 24hr SCS	0.64	225.77	227.53	226.18	227.53	0.000004	0.04	14.38	20.71	0.02
Trib 2	Reach 1	689	50yr 24hr SCS	0.87	225.77	227.72	226.24	227.72	0.000003	0.05	18.03	21.14	0.02
Trib 2	Reach 1	689	100yr 24hr SCS	1.12	225.77	227.96	226.29	227.96	0.000003	0.05	22.72	26.31	0.01
Trib 2	Reach 1	689	200yr 24hr SCS	1.44	225.77	228.31	226.34	228.31	0.000002	0.05	29.67	54.84	0.01
Trib 2	Reach 1	671	Railway - North	Culvert									
Trib 2	Reach 1	661	Timmins	2.15	226.53	229.29	226.73	229.29	0.000001	0.07	32.84	86.85	0.01
Trib 2	Reach 1	661	2yr 24hr SCS	0.12	226.53	227.13	226.57	227.13	0.000001	0.02	6.52	13.77	0.01
Trib 2	Reach 1	661	5yr 24hr SCS	0.24	226.53	227.23	226.59	227.23	0.000002	0.03	7.77	14.52	0.01
Trib 2	Reach 1	661	10yr 24hr SCS	0.39	226.53	227.34	226.61	227.34	0.000003	0.04	9.02	15.12	0.02
Trib 2	Reach 1	661	25yr 24hr SCS	0.64	226.53	227.52	226.63	227.52	0.000005	0.06	11.2	16.05	0.02
Trib 2	Reach 1	661	50yr 24hr SCS	0.87	226.53	227.7	226.65	227.7	0.000005	0.06	13.42	17	0.02
Trib 2	Reach 1	661	100yr 24hr SCS	1.12	226.53	227.93	226.67	227.93	0.000004	0.07	16.31	49.95	0.02
Trib 2	Reach 1	661	200yr 24hr SCS	1.44	226.53	228.28	226.69	228.28	0.000003	0.07	20.55	63.33	0.02
Trib 2	Reach 1	657	Timmins	2.15	226.54	229.29		229.29	0	0.02	118.66	89.95	0.01
Trib 2	Reach 1	657	2yr 24hr SCS	0.12	226.54	227.13		227.13	0.000034	0.06	1.98	8.77	0.04
Trib 2	Reach 1	657	5yr 24hr SCS	0.24	226.54	227.23		227.23	0.000046	0.08	2.98	11.06	0.05
Trib 2	Reach 1	657	10yr 24hr SCS	0.39	226.54	227.34		227.34	0.000045	0.09	4.2	12.24	0.05
Trib 2	Reach 1	657	25yr 24hr SCS	0.64	226.54	227.52		227.52	0.000032	0.1	6.5	13.49	0.05
Trib 2	Reach 1	657	50yr 24hr SCS	0.87	226.54	227.7		227.7	0.000024	0.1	9.08	15.88	0.04
Trib 2	Reach 1	657	100yr 24hr SCS	1.12	226.54	227.93		227.93	0.000018	0.06	18.28	49.99	0.03
Trib 2	Reach 1	657	200yr 24hr SCS	1.44	226.54	228.28		228.28	0.000003	0.04	37.94	62.36	0.02
Trib 2	Reach 1	650	Timmins	2.15	226.54	229.29		229.29	0	0.02	136.37	108.68	0
Trib 2	Reach 1	650	2yr 24hr SCS	0.12	226.54	227.13		227.13	0.000029	0.05	2.34	11.06	0.04
Trib 2	Reach 1	650	5yr 24hr SCS	0.24	226.54	227.23		227.23	0.000035	0.07	3.6	13.68	0.04
Trib 2	Reach 1	650	10yr 24hr SCS	0.39	226.54	227.34		227.34	0.000035	0.08	5.15	16.11	0.04
Trib 2	Reach 1	650	25yr 24hr SCS	0.64	226.54	227.52		227.52	0.000022	0.08	8.12	17.17	0.04
Trib 2	Reach 1	650	50yr 24hr SCS	0.87	226.54	227.7		227.7	0.000021	0.08	11.47	24.53	0.04
Trib 2	Reach 1	650	100yr 24hr SCS	1.12	226.54	227.93		227.93	0.000013	0.06	20.36	51.59	0.03
Trib 2	Reach 1	650	200yr 24hr SCS	1.44	226.54	228.28		228.28	0.000003	0.03	41.51	69.37	0.01
Trib 2	Reach 1	644	Timmins	2.15	226.85	229.29		229.29	0	0.02	136.12	110.63	0
Trib 2	Reach 1	644	2yr 24hr SCS	0.12	226.85	227.13		227.13	0.002418	0.34	0.36	2.92	0.31
Trib 2	Reach 1	644	5yr 24hr SCS	0.24	226.85	227.23		227.23	0.001507	0.32	0.75	4.62	0.26
Trib 2	Reach 1	644	10yr 24hr SCS	0.39	226.85	227.33		227.34	0.000989	0.28	1.38	7.62	0.21
Trib 2	Reach 1	644	25yr 24hr SCS	0.64	226.85	227.51		227.52	0.000393	0.2	3.23	15.35	0.14
Trib 2	Reach 1	644	50yr 24hr SCS	0.87	226.85	227.7		227.7	0.000128	0.13	6.75	26.58	0.08
Trib 2	Reach 1	644	100yr 24hr SCS	1.12	226.85	227.93		227.93	0.000027	0.07	15.99	49.22	0.04
Trib 2	Reach 1	644	200yr 24hr SCS	1.44	226.85	228.28		228.28	0.000004	0.04	37.85	76.26	0.02
Trib 2	Reach 1	641	Timmins	2.15	226.5	229.29	227.05	229.29	0.000002	0.06	33.54	113.08	0.01
Trib 2	Reach 1	641	2yr 24hr SCS	0.12	226.5	227.13	226.63	227.13	0.000038	0.08	1.54	5.04	0.04
Trib 2	Reach 1	641	5yr 24hr SCS	0.24	226.5	227.23	226.69	227.23	0.000069	0.11	2.11	6.16	0.06
Trib 2	Reach 1	641	10yr 24hr SCS	0.39	226.5	227.33	226.74	227.33	0.000082	0.14	2.77	6.59	0.07
Trib 2	Reach 1	641	25yr 24hr SCS	0.64	226.5	227.51	226.81	227.51	0.000091	0.16	4.13	9.21	0.07
Trib 2	Reach 1	641	50yr 24hr SCS	0.87	226.5	227.7	226.86	227.7	0.000081	0.13	6.46	23.05	0.07
Trib 2	Reach 1	641	100yr 24hr SCS	1.12	226.5	227.93	226.9	227.93	0.000028	0.11	10.49	42.91	0.04
Trib 2	Reach 1	641	200yr 24hr SCS	1.44	226.5	228.28	226.95	228.28	0.00001	0.09	16.41	66.74	0.03
Trib 2	Reach 1	617	HWY 11 N - North	Culvert									
Trib 2	Reach 1	608	Timmins	2.15	226.34	228.5	226.94	228.5	0.000035	0.19	12.43	8.94	0.05
Trib 2	Reach 1	608	2yr 24hr SCS	0.12	226.34	227.12	226.47	227.12	0.000021	0.06	2.24	6.37	0.03
Trib 2	Reach 1	608	5yr 24hr SCS	0.24	226.34	227.22	226.53	227.22	0.000043	0.1	2.89	7.72	0.05
Trib 2	Reach 1	608	10yr 24hr SCS	0.39	226.34	227.3	226.59	227.3	0.00006	0.13	3.54	8.54	0.06
Trib 2	Reach 1	608	25yr 24hr SCS	0.64	226.34	227.44	226.66	227.44	0.000072	0.17	4.56	8.59	0.07
Trib 2	Reach 1	608	50yr 24hr SCS	0.87	226.34	227.57	226.71	227.57	0.000075	0.19	5.48	8.63	0.07
Trib 2	Reach 1	608	100yr 24hr SCS	1.12	226.34	227.72	226.75	227.72	0.000069	0.2	6.6	8.68	0.07
Trib 2	Reach 1	608	200yr 24hr SCS	1.44	226.34	227.93	226.83	227.93	0.000059	0.2	8.15	8.75	0.06

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Trib 2	Reach 1	606	Timmins	2.15	226.33	228.5		228.5	0.00003	0.1	22.86	50.97	0.04
Trib 2	Reach 1	606	2yr 24hr SCS	0.12	226.33	227.12		227.12	0.000015	0.05	2.24	6.35	0.03
Trib 2	Reach 1	606	5yr 24hr SCS	0.24	226.33	227.22		227.22	0.000034	0.08	2.9	7.7	0.04
Trib 2	Reach 1	606	10yr 24hr SCS	0.39	226.33	227.3		227.3	0.000049	0.11	3.62	8.53	0.05
Trib 2	Reach 1	606	25yr 24hr SCS	0.64	226.33	227.44		227.44	0.000053	0.13	4.81	8.6	0.06
Trib 2	Reach 1	606	50yr 24hr SCS	0.87	226.33	227.57		227.57	0.000052	0.15	5.89	8.66	0.06
Trib 2	Reach 1	606	100yr 24hr SCS	1.12	226.33	227.72		227.72	0.000046	0.16	7.21	8.73	0.05
Trib 2	Reach 1	606	200yr 24hr SCS	1.44	226.33	227.93		227.93	0.000038	0.16	9.03	8.83	0.05
Trib 2	Reach 1	603	Timmins	2.15	226.33	228.5		228.5	0.000006	0.07	45.31	74.66	0.02
Trib 2	Reach 1	603	2yr 24hr SCS	0.12	226.33	227.12		227.12	0.000018	0.06	1.98	4.91	0.03
Trib 2	Reach 1	603	5yr 24hr SCS	0.24	226.33	227.22		227.22	0.000049	0.1	2.53	6.9	0.05
Trib 2	Reach 1	603	10yr 24hr SCS	0.39	226.33	227.3		227.3	0.000075	0.12	3.21	8.34	0.06
Trib 2	Reach 1	603	25yr 24hr SCS	0.64	226.33	227.44		227.44	0.000094	0.14	4.53	11.35	0.07
Trib 2	Reach 1	603	50yr 24hr SCS	0.87	226.33	227.57		227.57	0.000078	0.14	6.03	12.71	0.07
Trib 2	Reach 1	603	100yr 24hr SCS	1.12	226.33	227.72		227.72	0.000057	0.14	8.07	14.37	0.06
Trib 2	Reach 1	603	200yr 24hr SCS	1.44	226.33	227.93		227.93	0.000036	0.13	11.63	26.62	0.05
Trib 2	Reach 1	601	Timmins	2.15	226.33	228.5	226.75	228.5	0.000012	0.13	16.78	72.28	0.03
Trib 2	Reach 1	601	2yr 24hr SCS	0.12	226.33	227.12	226.4	227.12	0.000008	0.04	2.77	6.2	0.02
Trib 2	Reach 1	601	5yr 24hr SCS	0.24	226.33	227.22	226.44	227.22	0.00002	0.07	3.41	7.55	0.03
Trib 2	Reach 1	601	10yr 24hr SCS	0.39	226.33	227.3	226.47	227.3	0.000034	0.09	4.13	8.96	0.04
Trib 2	Reach 1	601	25yr 24hr SCS	0.64	226.33	227.44	226.52	227.44	0.000044	0.12	5.52	10.93	0.05
Trib 2	Reach 1	601	50yr 24hr SCS	0.87	226.33	227.57	226.57	227.57	0.000039	0.13	6.85	12.29	0.05
Trib 2	Reach 1	601	100yr 24hr SCS	1.12	226.33	227.72	226.61	227.72	0.000032	0.13	8.47	15.15	0.05
Trib 2	Reach 1	601	200yr 24hr SCS	1.44	226.33	227.93	226.65	227.93	0.000024	0.13	10.69	34.82	0.04
Trib 2	Reach 1	586	HWY 11 S - North	Culvert									
Trib 2	Reach 1	562	Timmins	2.15	226.4	227.66	226.67	227.67	0.000067	0.26	8.18	12.16	0.08
Trib 2	Reach 1	562	2yr 24hr SCS	0.12	226.4	227.12	226.47	227.12	0.000002	0.03	4.49	8.83	0.01
Trib 2	Reach 1	562	5yr 24hr SCS	0.24	226.4	227.2	226.49	227.2	0.000004	0.05	5.06	9.1	0.02
Trib 2	Reach 1	562	10yr 24hr SCS	0.39	226.4	227.28	226.51	227.28	0.000008	0.07	5.55	9.33	0.02
Trib 2	Reach 1	562	25yr 24hr SCS	0.64	226.4	227.37	226.54	227.37	0.000015	0.1	6.16	9.62	0.03
Trib 2	Reach 1	562	50yr 24hr SCS	0.87	226.4	227.43	226.57	227.43	0.000023	0.13	6.6	9.82	0.04
Trib 2	Reach 1	562	100yr 24hr SCS	1.12	226.4	227.49	226.59	227.5	0.00003	0.16	7.03	10.02	0.05
Trib 2	Reach 1	562	200yr 24hr SCS	1.44	226.4	227.55	226.62	227.56	0.000042	0.19	7.43	10.21	0.06
Trib 2	Reach 1	559	Timmins	2.15	226.34	227.67		227.67	0.000136	0.18	11.66	27.59	0.09
Trib 2	Reach 1	559	2yr 24hr SCS	0.12	226.34	227.12		227.12	0.000046	0.07	1.67	6.84	0.05
Trib 2	Reach 1	559	5yr 24hr SCS	0.24	226.34	227.2		227.2	0.000087	0.1	2.52	11.21	0.06
Trib 2	Reach 1	559	10yr 24hr SCS	0.39	226.34	227.28		227.28	0.000105	0.12	3.37	12.97	0.07
Trib 2	Reach 1	559	25yr 24hr SCS	0.64	226.34	227.37		227.37	0.000121	0.14	4.63	15.28	0.08
Trib 2	Reach 1	559	50yr 24hr SCS	0.87	226.34	227.43		227.43	0.000149	0.15	5.76	19.65	0.09
Trib 2	Reach 1	559	100yr 24hr SCS	1.12	226.34	227.49		227.49	0.000158	0.16	7.19	24.51	0.09
Trib 2	Reach 1	559	200yr 24hr SCS	1.44	226.34	227.55		227.56	0.000145	0.17	8.7	25.46	0.09
Trib 2	Reach 1	538	Timmins	2.15	226.3	227.66		227.66	0.000452	0.3	7.11	19.2	0.16
Trib 2	Reach 1	538	2yr 24hr SCS	0.12	226.3	227.12		227.12	0.000047	0.1	1.18	2.54	0.05
Trib 2	Reach 1	538	5yr 24hr SCS	0.24	226.3	227.2		227.2	0.000215	0.16	1.47	5.4	0.1
Trib 2	Reach 1	538	10yr 24hr SCS	0.39	226.3	227.27		227.27	0.000319	0.2	1.91	6.83	0.12
Trib 2	Reach 1	538	25yr 24hr SCS	0.64	226.3	227.36		227.36	0.000431	0.25	2.61	9.04	0.15
Trib 2	Reach 1	538	50yr 24hr SCS	0.87	226.3	227.42		227.43	0.000486	0.27	3.24	10.8	0.16
Trib 2	Reach 1	538	100yr 24hr SCS	1.12	226.3	227.48		227.49	0.000592	0.28	4.04	15.21	0.17
Trib 2	Reach 1	538	200yr 24hr SCS	1.44	226.3	227.55		227.55	0.000566	0.29	5.04	17.56	0.17
Trib 2	Reach 1	511	Timmins	2.15	226.91	227.49		227.62	0.013127	1.56	1.38	4	0.84
Trib 2	Reach 1	511	2yr 24hr SCS	0.12	226.91	227.09	227.07	227.11	0.014861	0.7	0.17	1.84	0.74
Trib 2	Reach 1	511	5yr 24hr SCS	0.24	226.91	227.14	227.12	227.18	0.013419	0.84	0.29	2.2	0.74
Trib 2	Reach 1	511	10yr 24hr SCS	0.39	226.91	227.2	227.16	227.24	0.012481	0.95	0.41	2.47	0.74
Trib 2	Reach 1	511	25yr 24hr SCS	0.64	226.91	227.26		227.32	0.01283	1.1	0.58	2.85	0.77
Trib 2	Reach 1	511	50yr 24hr SCS	0.87	226.91	227.31		227.38	0.013071	1.19	0.73	3.23	0.79
Trib 2	Reach 1	511	100yr 24hr SCS	1.12	226.91	227.35		227.44	0.012985	1.28	0.88	3.42	0.81
Trib 2	Reach 1	511	200yr 24hr SCS	1.44	226.91	227.4		227.5	0.013015	1.39	1.04	3.58	0.82
Trib 2	Reach 1	488	Timmins	2.15	226.55	227.09	227.09	227.25	0.018983	1.81	1.19	3.63	1.01
Trib 2	Reach 1	488	2yr 24hr SCS	0.12	226.55	226.7	226.68	226.73	0.019032	0.79	0.15	1.68	0.83
Trib 2	Reach 1	488	5yr 24hr SCS	0.24	226.55	226.74	226.73	226.79	0.021717	1.01	0.24	2	0.93
Trib 2	Reach 1	488	10yr 24hr SCS	0.39	226.55	226.78	226.78	226.86	0.023247	1.2	0.32	2.18	0.99
Trib 2	Reach 1	488	25yr 24hr SCS	0.64	226.55	226.84	226.84	226.94	0.022355	1.38	0.46	2.43	1.01
Trib 2	Reach 1	488	50yr 24hr SCS	0.87	226.55	226.89	226.89	227	0.021375	1.49	0.58	2.63	1.01
Trib 2	Reach 1	488	100yr 24hr SCS	1.12	226.55	226.94	226.94	227.06	0.02072	1.59	0.71	2.82	1.01
Trib 2	Reach 1	488	200yr 24hr SCS	1.44	226.55	226.99	226.99	227.13	0.019891	1.67	0.86	3.09	1.01
Trib 2	Reach 1	457	Timmins	2.15	225.88	226.23	226.23	226.32	0.022528	1.33	1.61	9.26	1.02
Trib 2	Reach 1	457	2yr 24hr SCS	0.12	225.88	225.96	225.96	225.99	0.030602	0.78	0.15	2.52	1
Trib 2	Reach 1	457	5yr 24hr SCS	0.24	225.88	226	226	226.05	0.027504	0.91	0.26	3.08	1
Trib 2	Reach 1	457	10yr 24hr SCS	0.39	225.88	226.04	226.04	226.09	0.026476	0.99	0.39	3.94	1.01
Trib 2	Reach 1	457	25yr 24hr SCS	0.64	225.88	226.09	226.09	226.14	0.025298	1.06	0.6	5.34	1.01
Trib 2	Reach 1	457	50yr 24hr SCS	0.87	225.88	226.12	226.12	226.18	0.024763	1.11	0.78	6.3	1.01
Trib 2	Reach 1	457	100yr 24hr SCS	1.12	225.88	226.14	226.14	226.21	0.02324	1.17	0.96	6.84	1
Trib 2	Reach 1	457	200yr 24hr SCS	1.44	225.88	226.17	226.17	226.25	0.022434	1.24	1.16	7.42	1

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Trib 2	Reach 1	406	Timmins	2.15	224.17	224.58	224.58	224.65	0.023656	1.19	1.81	12.74	1.01
Trib 2	Reach 1	406	2yr 24hr SCS	0.12	224.17	224.29	224.29	224.33	0.031149	0.8	0.15	2.38	1.01
Trib 2	Reach 1	406	5yr 24hr SCS	0.24	224.17	224.33	224.33	224.38	0.028166	0.94	0.25	2.88	1.02
Trib 2	Reach 1	406	10yr 24hr SCS	0.39	224.17	224.37	224.37	224.43	0.025863	1.07	0.37	3.25	1.01
Trib 2	Reach 1	406	25yr 24hr SCS	0.64	224.17	224.42	224.42	224.49	0.02341	1.19	0.54	3.73	1
Trib 2	Reach 1	406	50yr 24hr SCS	0.87	224.17	224.46	224.46	224.54	0.022961	1.21	0.72	4.82	1
Trib 2	Reach 1	406	100yr 24hr SCS	1.12	224.17	224.52	224.52	224.57	0.025454	1.04	1.08	9.86	1
Trib 2	Reach 1	406	200yr 24hr SCS	1.44	224.17	224.54	224.54	224.6	0.023551	1.06	1.36	11.41	0.98
Trib 2	Reach 1	369	Timmins	2.15	222.71	223.26	223.26	223.41	0.020374	1.69	1.27	4.59	1.02
Trib 2	Reach 1	369	2yr 24hr SCS	0.12	222.71	222.88	222.88	222.93	0.028907	0.95	0.13	1.41	1.01
Trib 2	Reach 1	369	5yr 24hr SCS	0.24	222.71	222.94	222.94	223	0.026373	1.1	0.22	1.8	1.01
Trib 2	Reach 1	369	10yr 24hr SCS	0.39	222.71	223	223	223.07	0.025343	1.15	0.34	2.55	1.01
Trib 2	Reach 1	369	25yr 24hr SCS	0.64	222.71	223.05	223.05	223.14	0.02364	1.31	0.49	2.87	1.02
Trib 2	Reach 1	369	50yr 24hr SCS	0.87	222.71	223.1	223.1	223.2	0.0229	1.41	0.62	3.2	1.02
Trib 2	Reach 1	369	100yr 24hr SCS	1.12	222.71	223.14	223.14	223.25	0.021759	1.43	0.78	3.82	1.01
Trib 2	Reach 1	369	200yr 24hr SCS	1.44	222.71	223.18	223.18	223.3	0.021406	1.53	0.94	4.08	1.02
Trib 2	Reach 1	318	Timmins	2.15	220.08	220.45	220.45	220.53	0.023552	1.28	1.68	10.55	1.03
Trib 2	Reach 1	318	2yr 24hr SCS	0.12	220.08	220.26	220.25	220.28	0.030652	0.74	0.16	2.84	0.98
Trib 2	Reach 1	318	5yr 24hr SCS	0.24	220.08	220.29	220.29	220.32	0.028761	0.75	0.32	5.12	0.97
Trib 2	Reach 1	318	10yr 24hr SCS	0.39	220.08	220.32	220.32	220.35	0.02885	0.78	0.5	7.74	0.98
Trib 2	Reach 1	318	25yr 24hr SCS	0.64	220.08	220.35	220.35	220.39	0.029677	0.92	0.69	8.5	1.03
Trib 2	Reach 1	318	50yr 24hr SCS	0.87	220.08	220.37	220.37	220.42	0.029119	1.01	0.86	9.12	1.05
Trib 2	Reach 1	318	100yr 24hr SCS	1.12	220.08	220.39	220.39	220.44	0.026407	1.06	1.05	9.57	1.02
Trib 2	Reach 1	318	200yr 24hr SCS	1.44	220.08	220.41	220.41	220.47	0.022144	1.09	1.32	10.1	0.96
Trib 2	Reach 1	251	Timmins	2.15	218.08	218.5	218.5	218.57	0.02405	1.21	1.77	12.22	1.02
Trib 2	Reach 1	251	2yr 24hr SCS	0.12	218.08	218.23	218.23	218.27	0.028947	0.93	0.13	1.47	1.01
Trib 2	Reach 1	251	5yr 24hr SCS	0.24	218.08	218.29	218.29	218.33	0.029044	0.9	0.27	3.26	1.01
Trib 2	Reach 1	251	10yr 24hr SCS	0.39	218.08	218.33	218.33	218.38	0.028811	0.95	0.41	4.59	1.02
Trib 2	Reach 1	251	25yr 24hr SCS	0.64	218.08	218.37	218.37	218.42	0.023419	1	0.64	5.79	0.96
Trib 2	Reach 1	251	50yr 24hr SCS	0.87	218.08	218.4	218.4	218.46	0.026259	1.13	0.77	6.33	1.03
Trib 2	Reach 1	251	100yr 24hr SCS	1.12	218.08	218.43	218.43	218.49	0.026839	1.1	1.02	8.83	1.03
Trib 2	Reach 1	251	200yr 24hr SCS	1.44	218.08	218.46	218.46	218.52	0.02426	1.1	1.31	10.57	0.99
Trib 2	Reach 1	180	Timmins	2.15	216.94	217.36	217.27	217.39	0.005018	0.78	2.75	11.32	0.51
Trib 2	Reach 1	180	2yr 24hr SCS	0.12	216.94	217.1	217.04	217.11	0.003885	0.33	0.36	4.43	0.37
Trib 2	Reach 1	180	5yr 24hr SCS	0.24	216.94	217.16		217.16	0.003957	0.36	0.67	7.52	0.38
Trib 2	Reach 1	180	10yr 24hr SCS	0.39	216.94	217.19	217.12	217.2	0.00413	0.42	0.93	8.54	0.4
Trib 2	Reach 1	180	25yr 24hr SCS	0.64	216.94	217.23	217.16	217.24	0.004369	0.49	1.32	10.06	0.43
Trib 2	Reach 1	180	50yr 24hr SCS	0.87	216.94	217.26	217.18	217.28	0.004314	0.54	1.62	10.53	0.44
Trib 2	Reach 1	180	100yr 24hr SCS	1.12	216.94	217.29	217.2	217.3	0.004462	0.59	1.89	10.79	0.45
Trib 2	Reach 1	180	200yr 24hr SCS	1.44	216.94	217.31	217.23	217.33	0.004675	0.66	2.18	10.98	0.47
Trib 2	Reach 1	94	Timmins	2.15	216.3	216.51	216.51	216.57	0.024801	1.04	2.07	18.56	1
Trib 2	Reach 1	94	2yr 24hr SCS	0.12	216.3	216.37	216.37	216.38	0.030703	0.53	0.23	6.68	0.91
Trib 2	Reach 1	94	5yr 24hr SCS	0.24	216.3	216.38	216.38	216.41	0.032988	0.68	0.35	7.52	1
Trib 2	Reach 1	94	10yr 24hr SCS	0.39	216.3	216.4	216.4	216.43	0.030949	0.76	0.51	8.8	1
Trib 2	Reach 1	94	25yr 24hr SCS	0.64	216.3	216.43	216.43	216.47	0.028338	0.85	0.76	10.2	0.99
Trib 2	Reach 1	94	50yr 24hr SCS	0.87	216.3	216.45	216.45	216.49	0.030145	0.85	1.03	14.6	1.02
Trib 2	Reach 1	94	100yr 24hr SCS	1.12	216.3	216.47	216.47	216.51	0.028857	0.9	1.25	15.78	1.02
Trib 2	Reach 1	94	200yr 24hr SCS	1.44	216.3	216.48	216.48	216.53	0.026919	0.94	1.53	17.13	1
Trib 2	Reach 1	34	Timmins	2.15	214.57	215.44		215.46	0.001626	0.56	3.85	11.12	0.3
Trib 2	Reach 1	34	2yr 24hr SCS	0.12	214.57	214.77		214.79	0.010327	0.68	0.18	1.48	0.63
Trib 2	Reach 1	34	5yr 24hr SCS	0.24	214.57	214.89		214.91	0.004882	0.62	0.39	2.13	0.46
Trib 2	Reach 1	34	10yr 24hr SCS	0.39	214.57	214.99		215.01	0.003546	0.62	0.63	2.77	0.41
Trib 2	Reach 1	34	25yr 24hr SCS	0.64	214.57	215.19		215.2	0.002329	0.46	1.39	6.96	0.33
Trib 2	Reach 1	34	50yr 24hr SCS	0.87	214.57	215.26		215.27	0.002016	0.45	1.95	9.29	0.31
Trib 2	Reach 1	34	100yr 24hr SCS	1.12	214.57	215.32		215.33	0.001645	0.45	2.48	10.01	0.29
Trib 2	Reach 1	34	200yr 24hr SCS	1.44	214.57	215.38		215.39	0.001386	0.46	3.12	10.69	0.27
Trib 1	Reach 2	1150	Timmins	2.29	239.91	240.07	240.07	240.11	0.0297	0.85	2.69	37.41	1.01
Trib 1	Reach 2	1150	2yr 24hr SCS	0.16	239.91	240	240	240.01	0.035532	0.41	0.39	18.85	0.9
Trib 1	Reach 2	1150	5yr 24hr SCS	0.23	239.91	240	240	240.01	0.041905	0.46	0.5	22.38	0.99
Trib 1	Reach 2	1150	10yr 24hr SCS	0.34	239.91	240.01	240.01	240.02	0.041868	0.53	0.65	23.85	1.02
Trib 1	Reach 2	1150	25yr 24hr SCS	0.57	239.91	240.02	240.02	240.04	0.038119	0.61	0.94	26.14	1.02
Trib 1	Reach 2	1150	50yr 24hr SCS	0.79	239.91	240.03	240.03	240.05	0.028124	0.6	1.31	29.1	0.91
Trib 1	Reach 2	1150	100yr 24hr SCS	1.05	239.91	240.04	240.04	240.07	0.032676	0.69	1.52	31.14	1
Trib 1	Reach 2	1150	200yr 24hr SCS	1.39	239.91	240.06	240.06	240.08	0.026273	0.7	2	34.31	0.92
Trib 1	Reach 2	1118	Timmins	2.29	238.68	238.87	238.86	238.91	0.022309	0.97	2.35	21.52	0.94
Trib 1	Reach 2	1118	2yr 24hr SCS	0.16	238.68	238.75	238.75	238.76	0.020606	0.42	0.39	11.93	0.74
Trib 1	Reach 2	1118	5yr 24hr SCS	0.23	238.68	238.77	238.76	238.78	0.01696	0.43	0.53	13.41	0.69
Trib 1	Reach 2	1118	10yr 24hr SCS	0.34	238.68	238.78	238.77	238.79	0.018733	0.5	0.68	14.88	0.75
Trib 1	Reach 2	1118	25yr 24hr SCS	0.57	238.68	238.8	238.79	238.81	0.01803	0.57	0.99	17.1	0.76
Trib 1	Reach 2	1118	50yr 24hr SCS	0.79	238.68	238.81	238.8	238.83	0.020692	0.67	1.18	17.9	0.83
Trib 1	Reach 2	1118	100yr 24hr SCS	1.05	238.68	238.82	238.81	238.85	0.018401	0.71	1.48	18.91	0.81
Trib 1	Reach 2	1118	200yr 24hr SCS	1.39	238.68	238.84	238.83	238.87	0.020635	0.81	1.72	19.66	0.87

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Trib 1	Reach 2	1091	Timmins	2.29	237.95	238.21	238.21	238.27	0.025982	1.05	2.22	21.19	1.02
Trib 1	Reach 2	1091	2yr 24hr SCS	0.16	237.95	238.1	238.09	238.12	0.028747	0.63	0.27	6.63	0.93
Trib 1	Reach 2	1091	5yr 24hr SCS	0.23	237.95	238.11	238.11	238.13	0.036921	0.59	0.39	11.5	1
Trib 1	Reach 2	1091	10yr 24hr SCS	0.34	237.95	238.12	238.12	238.14	0.031674	0.6	0.56	13.97	0.95
Trib 1	Reach 2	1091	25yr 24hr SCS	0.57	237.95	238.14	238.14	238.17	0.033912	0.69	0.82	17.16	1.01
Trib 1	Reach 2	1091	50yr 24hr SCS	0.79	237.95	238.16	238.16	238.18	0.028518	0.71	1.09	19.23	0.95
Trib 1	Reach 2	1091	100yr 24hr SCS	1.05	237.95	238.16	238.16	238.2	0.032994	0.83	1.25	19.71	1.05
Trib 1	Reach 2	1091	200yr 24hr SCS	1.39	237.95	238.18	238.18	238.22	0.028634	0.89	1.57	20.62	1.01
Trib 1	Reach 2	1058	Timmins	2.29	237.1	237.36	237.35	237.39	0.022686	0.85	2.69	30.58	0.91
Trib 1	Reach 2	1058	2yr 24hr SCS	0.16	237.1	237.23	237.23	237.24	0.024386	0.47	0.34	9.99	0.81
Trib 1	Reach 2	1058	5yr 24hr SCS	0.23	237.1	237.25	237.24	237.26	0.020374	0.48	0.48	12.09	0.76
Trib 1	Reach 2	1058	10yr 24hr SCS	0.34	237.1	237.26	237.25	237.27	0.020217	0.53	0.65	13.81	0.78
Trib 1	Reach 2	1058	25yr 24hr SCS	0.57	237.1	237.28	237.27	237.3	0.021882	0.62	0.91	16.04	0.84
Trib 1	Reach 2	1058	50yr 24hr SCS	0.79	237.1	237.29	237.28	237.32	0.021476	0.67	1.17	18.18	0.85
Trib 1	Reach 2	1058	100yr 24hr SCS	1.05	237.1	237.31	237.3	237.33	0.020309	0.7	1.49	20.63	0.84
Trib 1	Reach 2	1058	200yr 24hr SCS	1.39	237.1	237.32	237.32	237.35	0.022433	0.79	1.76	22.11	0.89
Trib 1	Reach 2	1035	Timmins	2.29	236.48	236.74	236.74	236.79	0.031749	0.93	2.46	31.37	1.06
Trib 1	Reach 2	1035	2yr 24hr SCS	0.16	236.48	236.63	236.63	236.65	0.028155	0.58	0.27	6.39	0.9
Trib 1	Reach 2	1035	5yr 24hr SCS	0.23	236.48	236.64	236.64	236.66	0.035004	0.69	0.33	7.24	1.02
Trib 1	Reach 2	1035	10yr 24hr SCS	0.34	236.48	236.66	236.66	236.68	0.034297	0.7	0.49	10.23	1.02
Trib 1	Reach 2	1035	25yr 24hr SCS	0.57	236.48	236.68	236.68	236.7	0.031098	0.69	0.83	16.38	0.98
Trib 1	Reach 2	1035	50yr 24hr SCS	0.79	236.48	236.69	236.69	236.72	0.032078	0.73	1.09	20.35	1
Trib 1	Reach 2	1035	100yr 24hr SCS	1.05	236.48	236.71	236.71	236.74	0.034834	0.75	1.39	26.11	1.04
Trib 1	Reach 2	1035	200yr 24hr SCS	1.39	236.48	236.72	236.72	236.75	0.031142	0.77	1.8	30.09	1.01
Trib 1	Reach 2	1021	Timmins	2.29	235.93	236.21	236.21	236.27	0.031431	1.18	2.39	22.67	1.12
Trib 1	Reach 2	1021	2yr 24hr SCS	0.16	235.93	236	236	236.02	0.047281	0.77	0.23	4.52	1.18
Trib 1	Reach 2	1021	5yr 24hr SCS	0.23	235.93	236.01	236.01	236.05	0.043921	0.85	0.3	5.09	1.17
Trib 1	Reach 2	1021	10yr 24hr SCS	0.34	235.93	236.04	236.04	236.07	0.040356	0.94	0.41	5.79	1.16
Trib 1	Reach 2	1021	25yr 24hr SCS	0.57	235.93	236.07	236.07	236.11	0.036909	1.07	0.62	6.98	1.16
Trib 1	Reach 2	1021	50yr 24hr SCS	0.79	235.93	236.09	236.09	236.15	0.033866	1.14	0.82	7.93	1.14
Trib 1	Reach 2	1021	100yr 24hr SCS	1.05	235.93	236.12	236.12	236.18	0.032229	1.21	1.02	8.84	1.14
Trib 1	Reach 2	1021	200yr 24hr SCS	1.39	235.93	236.15	236.15	236.21	0.027926	1.21	1.36	11.07	1.08
Trib 1	Reach 2	1003	Timmins	2.29	233.54	233.85	233.85	233.94	0.021655	1.31	1.75	10	1
Trib 1	Reach 2	1003	2yr 24hr SCS	0.16	233.54	233.64	233.64	233.68	0.030479	0.86	0.19	2.58	1.02
Trib 1	Reach 2	1003	5yr 24hr SCS	0.23	233.54	233.67	233.67	233.71	0.029599	0.82	0.28	4.11	1
Trib 1	Reach 2	1003	10yr 24hr SCS	0.34	233.54	233.7	233.7	233.73	0.027659	0.81	0.42	5.86	0.97
Trib 1	Reach 2	1003	25yr 24hr SCS	0.57	233.54	233.73	233.73	233.77	0.028963	0.89	0.64	8.04	1.02
Trib 1	Reach 2	1003	50yr 24hr SCS	0.79	233.54	233.75	233.75	233.8	0.027815	0.99	0.8	8.36	1.03
Trib 1	Reach 2	1003	100yr 24hr SCS	1.05	233.54	233.77	233.77	233.83	0.026014	1.07	0.98	8.7	1.02
Trib 1	Reach 2	1003	200yr 24hr SCS	1.39	233.54	233.8	233.8	233.87	0.024665	1.16	1.2	9.1	1.02
Trib 1	Reach 2	982	Timmins	2.29	231.6	231.9	231.9	231.99	0.022349	1.31	1.75	10.24	1.01
Trib 1	Reach 2	982	2yr 24hr SCS	0.16	231.6	231.71	231.71	231.74	0.032684	0.76	0.21	3.7	1.02
Trib 1	Reach 2	982	5yr 24hr SCS	0.23	231.6	231.73	231.73	231.76	0.033122	0.8	0.29	4.7	1.04
Trib 1	Reach 2	982	10yr 24hr SCS	0.34	231.6	231.75	231.75	231.78	0.029362	0.8	0.43	6.45	0.99
Trib 1	Reach 2	982	25yr 24hr SCS	0.57	231.6	231.78	231.78	231.82	0.025787	0.89	0.64	7.53	0.97
Trib 1	Reach 2	982	50yr 24hr SCS	0.79	231.6	231.8	231.8	231.85	0.027485	0.97	0.81	8.69	1.02
Trib 1	Reach 2	982	100yr 24hr SCS	1.05	231.6	231.82	231.82	231.88	0.026137	1.06	0.99	9	1.02
Trib 1	Reach 2	982	200yr 24hr SCS	1.39	231.6	231.85	231.85	231.91	0.024714	1.15	1.21	9.35	1.02
Trib 1	Reach 2	961	Timmins	2.29	230.69	230.96	230.96	231.02	0.024223	1.16	1.97	14.78	1.01
Trib 1	Reach 2	961	2yr 24hr SCS	0.16	230.69	230.81	230.81	230.83	0.037697	0.64	0.25	6.44	1.03
Trib 1	Reach 2	961	5yr 24hr SCS	0.23	230.69	230.82	230.82	230.84	0.040984	0.66	0.35	9.06	1.07
Trib 1	Reach 2	961	10yr 24hr SCS	0.34	230.69	230.84	230.84	230.86	0.036447	0.71	0.48	10.23	1.04
Trib 1	Reach 2	961	25yr 24hr SCS	0.57	230.69	230.86	230.86	230.89	0.029937	0.8	0.71	10.91	1
Trib 1	Reach 2	961	50yr 24hr SCS	0.79	230.69	230.87	230.87	230.91	0.027904	0.88	0.9	11.4	1
Trib 1	Reach 2	961	100yr 24hr SCS	1.05	230.69	230.9	230.9	230.94	0.023325	0.89	1.18	12.75	0.94
Trib 1	Reach 2	961	200yr 24hr SCS	1.39	230.69	230.91	230.91	230.96	0.025778	1.01	1.37	13.22	1
Trib 1	Reach 2	939	Timmins	2.29	229.14	230.52		230.52	0.000025	0.1	23.93	43.65	0.04
Trib 1	Reach 2	939	2yr 24hr SCS	0.16	229.14	229.54		229.54	0.002835	0.3	0.53	5.04	0.3
Trib 1	Reach 2	939	5yr 24hr SCS	0.23	229.14	229.62		229.63	0.000997	0.21	1.07	8.12	0.19
Trib 1	Reach 2	939	10yr 24hr SCS	0.34	229.14	229.74		229.74	0.00028	0.14	2.35	12.44	0.11
Trib 1	Reach 2	939	25yr 24hr SCS	0.57	229.14	229.95		229.95	0.000071	0.1	5.52	17.45	0.06
Trib 1	Reach 2	939	50yr 24hr SCS	0.79	229.14	230.14		230.14	0.00004	0.08	9.38	26.97	0.05
Trib 1	Reach 2	939	100yr 24hr SCS	1.05	229.14	230.37		230.37	0.000014	0.06	17.38	39.71	0.03
Trib 1	Reach 2	939	200yr 24hr SCS	1.39	229.14	230.46		230.46	0.000013	0.07	21.2	42.33	0.03
Trib 1	Reach 2	931	Timmins	2.29	229.12	230.52	229.63	230.52	0.00003	0.12	24.38	55.43	0.04
Trib 1	Reach 2	931	2yr 24hr SCS	0.16	229.12	229.54	229.24	229.54	0.000207	0.17	0.93	3.14	0.1
Trib 1	Reach 2	931	5yr 24hr SCS	0.23	229.12	229.62	229.26	229.62	0.000211	0.19	1.21	3.5	0.1
Trib 1	Reach 2	931	10yr 24hr SCS	0.34	229.12	229.74	229.29	229.74	0.000228	0.18	1.94	14.48	0.12
Trib 1	Reach 2	931	25yr 24hr SCS	0.57	229.12	229.95	229.35	229.95	0.000095	0.14	4.15	20.77	0.07
Trib 1	Reach 2	931	50yr 24hr SCS	0.79	229.12	230.14	229.39	230.14	0.000051	0.13	6.18	27.08	0.05
Trib 1	Reach 2	931	100yr 24hr SCS	1.05	229.12	230.37	229.44	230.37	0.00003	0.12	8.61	35.11	0.04
Trib 1	Reach 2	931	200yr 24hr SCS	1.39	229.12	230.46	229.51	230.46	0.00003	0.13	13.39	48.22	0.04
Trib 1	Reach 2	914 Derland Rd		Culvert									

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Trib 1	Reach 2	895	Timmins	2.29	228.73	229.55	229.55	229.67	0.022593	1.57	1.48	17.24	0.98
Trib 1	Reach 2	895	2yr 24hr SCS	0.16	228.73	229.06	228.94	229.08	0.005175	0.66	0.24	1.03	0.43
Trib 1	Reach 2	895	5yr 24hr SCS	0.23	228.73	229.09	228.98	229.13	0.007648	0.84	0.27	1.09	0.53
Trib 1	Reach 2	895	10yr 24hr SCS	0.34	228.73	229.13	229.05	229.19	0.011542	1.08	0.32	1.16	0.66
Trib 1	Reach 2	895	25yr 24hr SCS	0.57	228.73	229.18	229.15	229.3	0.019739	1.5	0.38	1.27	0.87
Trib 1	Reach 2	895	50yr 24hr SCS	0.79	228.73	229.23	229.23	229.39	0.025822	1.79	0.44	1.93	1.01
Trib 1	Reach 2	895	100yr 24hr SCS	1.05	228.73	229.32	229.32	229.49	0.025068	1.82	0.58	8.02	1
Trib 1	Reach 2	895	200yr 24hr SCS	1.39	228.73	229.44	229.44	229.55	0.024775	1.51	0.92	14.77	1
Trib 1	Reach 2	888	Timmins	2.29	228.93	229.2	229.2	229.29	0.023703	1.37	1.74	9.45	1.03
Trib 1	Reach 2	888	2yr 24hr SCS	0.16	228.93	228.99	228.99	229.01	0.044452	0.68	0.23	5.21	1.11
Trib 1	Reach 2	888	5yr 24hr SCS	0.23	228.93	229	229	229.03	0.038392	0.77	0.3	5.31	1.08
Trib 1	Reach 2	888	10yr 24hr SCS	0.34	228.93	229.02	229.02	229.05	0.035573	0.88	0.4	5.42	1.09
Trib 1	Reach 2	888	25yr 24hr SCS	0.57	228.93	229.05	229.05	229.1	0.032898	1.02	0.58	6.16	1.09
Trib 1	Reach 2	888	50yr 24hr SCS	0.79	228.93	229.08	229.08	229.13	0.027025	1.05	0.78	6.93	1.02
Trib 1	Reach 2	888	100yr 24hr SCS	1.05	228.93	229.1	229.1	229.17	0.02589	1.13	0.96	7.36	1.02
Trib 1	Reach 2	888	200yr 24hr SCS	1.39	228.93	229.13	229.13	229.21	0.024435	1.21	1.19	7.96	1.01
Trib 1	Reach 1	835	Timmins	5.77	227.8	228.24		228.29	0.012929	1	5.75	33.43	0.77
Trib 1	Reach 1	835	2yr 24hr SCS	0.41	227.8	228.02		228.03	0.012036	0.55	0.75	10.15	0.65
Trib 1	Reach 1	835	5yr 24hr SCS	0.87	227.8	228.07		228.09	0.01349	0.64	1.36	16.05	0.7
Trib 1	Reach 1	835	10yr 24hr SCS	1.36	227.8	228.11		228.13	0.011251	0.65	2.11	21.37	0.66
Trib 1	Reach 1	835	25yr 24hr SCS	2.15	227.8	228.15		228.17	0.009964	0.7	3.07	25.19	0.64
Trib 1	Reach 1	835	50yr 24hr SCS	2.85	227.8	228.17		228.2	0.010315	0.76	3.75	27.9	0.66
Trib 1	Reach 1	835	100yr 24hr SCS	3.62	227.8	228.2		228.23	0.010357	0.81	4.45	30.05	0.67
Trib 1	Reach 1	835	200yr 24hr SCS	4.58	227.8	228.22		228.26	0.011797	0.9	5.06	32.11	0.73
Trib 1	Reach 1	784	Timmins	5.77	227.62	227.97	227.88	227.98	0.003284	0.5	11.47	67.21	0.39
Trib 1	Reach 1	784	2yr 24hr SCS	0.41	227.62	227.81	227.76	227.81	0.00218	0.19	2.13	38.74	0.26
Trib 1	Reach 1	784	5yr 24hr SCS	0.87	227.62	227.84	227.78	227.84	0.002333	0.24	3.65	50.78	0.28
Trib 1	Reach 1	784	10yr 24hr SCS	1.36	227.62	227.86	227.8	227.86	0.002864	0.29	4.66	55.77	0.32
Trib 1	Reach 1	784	25yr 24hr SCS	2.15	227.62	227.88	227.82	227.89	0.003434	0.36	6.05	61.86	0.36
Trib 1	Reach 1	784	50yr 24hr SCS	2.85	227.62	227.9	227.83	227.91	0.003513	0.4	7.15	62.52	0.38
Trib 1	Reach 1	784	100yr 24hr SCS	3.62	227.62	227.92	227.85	227.93	0.00371	0.44	8.16	63.18	0.39
Trib 1	Reach 1	784	200yr 24hr SCS	4.58	227.62	227.94	227.86	227.95	0.0034	0.47	9.71	64.36	0.39
Trib 1	Reach 1	723	Timmins	5.77	227.35	227.57		227.6	0.015325	0.79	7.27	68.32	0.78
Trib 1	Reach 1	723	2yr 24hr SCS	0.41	227.35	227.44	227.44	227.46	0.037912	0.55	0.75	24.35	0.99
Trib 1	Reach 1	723	5yr 24hr SCS	0.87	227.35	227.47	227.47	227.49	0.032101	0.61	1.42	34.52	0.96
Trib 1	Reach 1	723	10yr 24hr SCS	1.36	227.35	227.5	227.48	227.51	0.016786	0.52	2.62	49.71	0.72
Trib 1	Reach 1	723	25yr 24hr SCS	2.15	227.35	227.52	227.5	227.54	0.011558	0.52	4.13	59.07	0.63
Trib 1	Reach 1	723	50yr 24hr SCS	2.85	227.35	227.54		227.56	0.010848	0.55	5.16	64.54	0.62
Trib 1	Reach 1	723	100yr 24hr SCS	3.62	227.35	227.56		227.57	0.009929	0.59	6.19	66.3	0.61
Trib 1	Reach 1	723	200yr 24hr SCS	4.58	227.35	227.56		227.59	0.012775	0.69	6.64	67.13	0.7
Trib 1	Reach 1	583	Timmins	5.77	226.47	227.08		227.09	0.001605	0.35	16.32	94.81	0.27
Trib 1	Reach 1	583	2yr 24hr SCS	0.41	226.47	226.78		226.79	0.000982	0.27	1.5	8.8	0.21
Trib 1	Reach 1	583	5yr 24hr SCS	0.87	226.47	226.89		226.9	0.001561	0.26	3.33	29.86	0.25
Trib 1	Reach 1	583	10yr 24hr SCS	1.36	226.47	226.94		226.94	0.001787	0.25	5.37	55.93	0.26
Trib 1	Reach 1	583	25yr 24hr SCS	2.15	226.47	226.97		226.97	0.002021	0.29	7.32	66.84	0.28
Trib 1	Reach 1	583	50yr 24hr SCS	2.85	226.47	226.99		227	0.002036	0.32	8.93	72.37	0.29
Trib 1	Reach 1	583	100yr 24hr SCS	3.62	226.47	227.01		227.02	0.002109	0.34	10.57	79.18	0.3
Trib 1	Reach 1	583	200yr 24hr SCS	4.58	226.47	227.05		227.05	0.001795	0.35	13.15	85.02	0.28
Trib 1	Reach 1	529	Timmins	5.77	226.4	227		227.01	0.001382	0.37	15.4	73.37	0.26
Trib 1	Reach 1	529	2yr 24hr SCS	0.41	226.4	226.59	226.59	226.63	0.031062	0.84	0.49	7.16	1.03
Trib 1	Reach 1	529	5yr 24hr SCS	0.87	226.4	226.66		226.69	0.016772	0.75	1.16	12.78	0.79
Trib 1	Reach 1	529	10yr 24hr SCS	1.36	226.4	226.73		226.75	0.01048	0.59	2.29	24.97	0.63
Trib 1	Reach 1	529	25yr 24hr SCS	2.15	226.4	226.79		226.8	0.005775	0.53	4.08	34.07	0.49
Trib 1	Reach 1	529	50yr 24hr SCS	2.85	226.4	226.83		226.84	0.004305	0.49	5.78	42.77	0.43
Trib 1	Reach 1	529	100yr 24hr SCS	3.62	226.4	226.87		226.88	0.003184	0.48	7.5	45.74	0.38
Trib 1	Reach 1	529	200yr 24hr SCS	4.58	226.4	226.94		226.95	0.001967	0.4	11.44	64.24	0.3
Trib 1	Reach 1	501	Timmins	5.77	226.23	226.93	226.68	226.95	0.002975	0.66	8.74	31.59	0.4
Trib 1	Reach 1	501	2yr 24hr SCS	0.41	226.23	226.48		226.49	0.001531	0.31	1.34	9.35	0.26
Trib 1	Reach 1	501	5yr 24hr SCS	0.87	226.23	226.56		226.57	0.001844	0.41	2.13	11.09	0.3
Trib 1	Reach 1	501	10yr 24hr SCS	1.36	226.23	226.62		226.63	0.002078	0.47	2.88	13.18	0.32
Trib 1	Reach 1	501	25yr 24hr SCS	2.15	226.23	226.67		226.69	0.002847	0.6	3.59	14.54	0.38
Trib 1	Reach 1	501	50yr 24hr SCS	2.85	226.23	226.72		226.74	0.003052	0.66	4.31	15.85	0.4
Trib 1	Reach 1	501	100yr 24hr SCS	3.62	226.23	226.77		226.8	0.003071	0.71	5.1	16.96	0.41
Trib 1	Reach 1	501	200yr 24hr SCS	4.58	226.23	226.86	226.63	226.88	0.002798	0.66	6.94	23.95	0.39
Trib 1	Reach 1	461	Timmins	5.77	226.18	226.56	226.56	226.7	0.018986	1.66	3.48	12.61	1.01
Trib 1	Reach 1	461	2yr 24hr SCS	0.41	226.18	226.3	226.3	226.33	0.02571	0.72	0.57	9.04	0.92
Trib 1	Reach 1	461	5yr 24hr SCS	0.87	226.18	226.34	226.34	226.38	0.026967	0.95	0.92	10.01	1
Trib 1	Reach 1	461	10yr 24hr SCS	1.36	226.18	226.37	226.37	226.43	0.025135	1.09	1.24	10.47	1.01
Trib 1	Reach 1	461	25yr 24hr SCS	2.15	226.18	226.48	226.41	226.51	0.007905	0.88	2.45	12.02	0.62
Trib 1	Reach 1	461	50yr 24hr SCS	2.85	226.18	226.53	226.45	226.57	0.006542	0.92	3.11	12.38	0.58
Trib 1	Reach 1	461	100yr 24hr SCS	3.62	226.18	226.56	226.48	226.62	0.007151	1.03	3.53	12.64	0.62
Trib 1	Reach 1	461	200yr 24hr SCS	4.58	226.18	226.52	226.52	226.64	0.020086	1.55	2.95	12.32	1.02

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Trib 1	Reach 1	385	Timmins	5.77	225.46	226.41		226.42	0.000035	0.14	40.82	52.98	0.05
Trib 1	Reach 1	385	2yr 24hr SCS	0.41	225.46	225.57		225.57	0.00517	0.28	1.49	30.38	0.4
Trib 1	Reach 1	385	5yr 24hr SCS	0.87	225.46	225.6	225.56	225.6	0.00521	0.35	2.48	35.46	0.42
Trib 1	Reach 1	385	10yr 24hr SCS	1.36	225.46	225.62		225.63	0.004936	0.41	3.33	36.23	0.43
Trib 1	Reach 1	385	25yr 24hr SCS	2.15	225.46	225.61		225.64	0.018135	0.73	2.96	35.92	0.81
Trib 1	Reach 1	385	50yr 24hr SCS	2.85	225.46	225.61	225.61	225.66	0.028968	0.94	3.04	35.99	1.03
Trib 1	Reach 1	385	100yr 24hr SCS	3.62	225.46	225.63	225.63	225.68	0.025768	0.98	3.68	36.97	1
Trib 1	Reach 1	385	200yr 24hr SCS	4.58	225.46	225.95		225.95	0.000329	0.27	17.12	46.03	0.14
Trib 1	Reach 1	327	Timmins	5.77	224.78	226.41		226.41	0.000012	0.09	61.04	65.81	0.03
Trib 1	Reach 1	327	2yr 24hr SCS	0.41	224.78	224.93	224.93	224.96	0.029901	0.79	0.52	8.02	1
Trib 1	Reach 1	327	5yr 24hr SCS	0.87	224.78	224.97	224.97	225.01	0.0267	0.83	1.05	14.08	0.97
Trib 1	Reach 1	327	10yr 24hr SCS	1.36	224.78	225	225	225.05	0.028033	0.99	1.37	14.6	1.03
Trib 1	Reach 1	327	25yr 24hr SCS	2.15	224.78	225.13		225.15	0.004745	0.57	3.75	23.8	0.46
Trib 1	Reach 1	327	50yr 24hr SCS	2.85	224.78	225.37		225.37	0.000402	0.27	10.36	31.13	0.15
Trib 1	Reach 1	327	100yr 24hr SCS	3.62	224.78	225.61		225.61	0.000115	0.19	19.45	40.92	0.09
Trib 1	Reach 1	327	200yr 24hr SCS	4.58	224.78	225.94		225.94	0.000035	0.13	34.73	49.9	0.05
Trib 1	Reach 1	284	Timmins	5.77	223.57	226.41		226.41	0.000002	0.04	146.53	125.6	0.01
Trib 1	Reach 1	284	2yr 24hr SCS	0.41	223.57	224.39		224.39	0.000011	0.05	7.49	16.89	0.03
Trib 1	Reach 1	284	5yr 24hr SCS	0.87	223.57	224.64		224.64	0.000016	0.07	12.52	25.35	0.03
Trib 1	Reach 1	284	10yr 24hr SCS	1.36	223.57	224.85		224.85	0.000016	0.07	19.15	37.42	0.03
Trib 1	Reach 1	284	25yr 24hr SCS	2.15	223.57	225.14		225.14	0.000011	0.07	32.24	53.65	0.03
Trib 1	Reach 1	284	50yr 24hr SCS	2.85	223.57	225.37		225.37	0.000008	0.06	45.95	66.52	0.02
Trib 1	Reach 1	284	100yr 24hr SCS	3.62	223.57	225.61		225.61	0.000005	0.06	63.95	80.35	0.02
Trib 1	Reach 1	284	200yr 24hr SCS	4.58	223.57	225.94		225.94	0.000003	0.05	93.57	98.99	0.02
Trib 1	Reach 1	269	Timmins	5.77	223.89	226.41	224.67	226.41	0.000025	0.17	34.37	144.05	0.05
Trib 1	Reach 1	269	2yr 24hr SCS	0.41	223.89	224.38	224.03	224.39	0.000417	0.3	1.35	3.03	0.15
Trib 1	Reach 1	269	5yr 24hr SCS	0.87	223.89	224.63	224.12	224.64	0.000498	0.41	2.14	3.36	0.16
Trib 1	Reach 1	269	10yr 24hr SCS	1.36	223.89	224.84	224.2	224.85	0.000535	0.47	2.86	3.66	0.17
Trib 1	Reach 1	269	25yr 24hr SCS	2.15	223.89	225.12	224.3	225.14	0.00109	0.5	4.34	10.33	0.24
Trib 1	Reach 1	269	50yr 24hr SCS	2.85	223.89	225.36	224.39	225.37	0.000518	0.34	8.26	33.04	0.17
Trib 1	Reach 1	269	100yr 24hr SCS	3.62	223.89	225.61	224.47	225.61	0.0002	0.26	13.74	61.26	0.11
Trib 1	Reach 1	269	200yr 24hr SCS	4.58	223.89	225.94	224.56	225.94	0.000069	0.21	22.17	115.02	0.07
Trib 1	Reach 1	253	Railway South Cr	Culvert									
Trib 1	Reach 1	238	Timmins	5.77	223.72	225.85	224.33	225.86	0.000077	0.37	15.59	57.81	0.09
Trib 1	Reach 1	238	2yr 24hr SCS	0.41	223.72	224.34	223.88	224.34	0.000077	0.14	2.9	7.75	0.07
Trib 1	Reach 1	238	5yr 24hr SCS	0.87	223.72	224.56	223.96	224.56	0.0001	0.19	4.63	13.77	0.08
Trib 1	Reach 1	238	10yr 24hr SCS	1.36	223.72	224.74	224.02	224.74	0.000093	0.22	6.18	19.49	0.08
Trib 1	Reach 1	238	25yr 24hr SCS	2.15	223.72	224.98	224.1	224.99	0.000089	0.26	8.24	27.12	0.08
Trib 1	Reach 1	238	50yr 24hr SCS	2.85	223.72	225.17	224.16	225.18	0.000087	0.29	9.84	33.04	0.09
Trib 1	Reach 1	238	100yr 24hr SCS	3.62	223.72	225.36	224.21	225.37	0.000084	0.32	11.46	39.02	0.09
Trib 1	Reach 1	238	200yr 24hr SCS	4.58	223.72	225.59	224.26	225.59	0.000081	0.34	13.35	46.01	0.09
Trib 1	Reach 1	235	Timmins	5.77	223.79	225.86		225.86	0.000005	0.08	81.67	102.71	0.02
Trib 1	Reach 1	235	2yr 24hr SCS	0.41	223.79	224.34		224.34	0.00021	0.15	2.72	11.99	0.1
Trib 1	Reach 1	235	5yr 24hr SCS	0.87	223.79	224.56		224.56	0.000112	0.13	6.53	21.79	0.08
Trib 1	Reach 1	235	10yr 24hr SCS	1.36	223.79	224.74		224.74	0.000079	0.11	12.39	43.01	0.07
Trib 1	Reach 1	235	25yr 24hr SCS	2.15	223.79	224.99		224.99	0.000027	0.09	23.62	48.93	0.04
Trib 1	Reach 1	235	50yr 24hr SCS	2.85	223.79	225.18		225.18	0.000016	0.09	33.89	56.71	0.03
Trib 1	Reach 1	235	100yr 24hr SCS	3.62	223.79	225.37		225.37	0.000011	0.08	45.04	60.41	0.03
Trib 1	Reach 1	235	200yr 24hr SCS	4.58	223.79	225.59		225.59	0.000008	0.08	59.44	69.72	0.03
Trib 1	Reach 1	222	Timmins	5.77	223.78	225.85		225.86	0.000109	0.22	26.3	41.72	0.09
Trib 1	Reach 1	222	2yr 24hr SCS	0.41	223.78	224.33		224.33	0.000326	0.27	1.54	3.83	0.13
Trib 1	Reach 1	222	5yr 24hr SCS	0.87	223.78	224.55		224.56	0.000422	0.35	2.49	5.03	0.16
Trib 1	Reach 1	222	10yr 24hr SCS	1.36	223.78	224.73		224.74	0.000434	0.39	3.52	6.27	0.16
Trib 1	Reach 1	222	25yr 24hr SCS	2.15	223.78	224.98		224.98	0.000385	0.41	5.25	7.88	0.16
Trib 1	Reach 1	222	50yr 24hr SCS	2.85	223.78	225.17		225.17	0.00047	0.41	7.04	12.71	0.17
Trib 1	Reach 1	222	100yr 24hr SCS	3.62	223.78	225.36		225.37	0.000411	0.35	10.35	21.42	0.16
Trib 1	Reach 1	222	200yr 24hr SCS	4.58	223.78	225.59		225.59	0.000237	0.28	16.33	31.43	0.12
Trib 1	Reach 1	220	Timmins	5.77	223.78	225.85	224.57	225.86	0.000105	0.27	21.27	41.79	0.09
Trib 1	Reach 1	220	2yr 24hr SCS	0.41	223.78	224.33	224	224.33	0.000329	0.27	1.53	3.82	0.13
Trib 1	Reach 1	220	5yr 24hr SCS	0.87	223.78	224.55	224.07	224.56	0.000427	0.35	2.48	5.01	0.16
Trib 1	Reach 1	220	10yr 24hr SCS	1.36	223.78	224.73	224.15	224.74	0.000438	0.39	3.51	6.26	0.17
Trib 1	Reach 1	220	25yr 24hr SCS	2.15	223.78	224.98	224.24	224.98	0.000388	0.41	5.24	7.86	0.16
Trib 1	Reach 1	220	50yr 24hr SCS	2.85	223.78	225.17	224.31	225.17	0.000482	0.41	7.02	12.9	0.18
Trib 1	Reach 1	220	100yr 24hr SCS	3.62	223.78	225.36	224.38	225.37	0.000391	0.35	10.41	22.14	0.16
Trib 1	Reach 1	220	200yr 24hr SCS	4.58	223.78	225.59	224.47	225.59	0.000186	0.3	15.25	32.69	0.12
Trib 1	Reach 1	175	HWY 11 n&s - Sou	Culvert									
Trib 1	Reach 1	153	Timmins	5.77	221.16	221.88	221.88	222.02	0.020155	1.63	3.54	39.14	1.01
Trib 1	Reach 1	153	2yr 24hr SCS	0.41	221.16	221.4	221.4	221.49	0.024081	1.33	0.31	2.01	1
Trib 1	Reach 1	153	5yr 24hr SCS	0.87	221.16	221.56	221.56	221.64	0.024276	1.28	0.68	12.76	1
Trib 1	Reach 1	153	10yr 24hr SCS	1.36	221.16	221.63	221.63	221.72	0.023296	1.34	1.02	19.17	1
Trib 1	Reach 1	153	25yr 24hr SCS	2.15	221.16	221.72	221.72	221.81	0.022422	1.33	1.62	31.5	0.99
Trib 1	Reach 1	153	50yr 24hr SCS	2.85	221.16	221.77	221.77	221.86	0.022326	1.34	2.13	35.78	1
Trib 1	Reach 1	153	100yr 24hr SCS	3.62	221.16	221.8	221.8	221.91	0.021434	1.43	2.54	36.85	1
Trib 1	Reach 1	153	200yr 24hr SCS	4.58	221.16	221.84	221.84	221.96	0.020648	1.52	3.01	38.23	1

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Trib 1	Reach 1	151	Timmins	5.77	220.9	221.38	221.38	221.47	0.023441	1.35	4.27	24.51	1.03
Trib 1	Reach 1	151	2yr 24hr SCS	0.41	220.9	221.08	221.08	221.14	0.02581	1.03	0.4	3.7	1
Trib 1	Reach 1	151	5yr 24hr SCS	0.87	220.9	221.16	221.16	221.22	0.027244	1.08	0.81	7.22	1.03
Trib 1	Reach 1	151	10yr 24hr SCS	1.36	220.9	221.22	221.22	221.27	0.023915	0.97	1.4	13.5	0.96
Trib 1	Reach 1	151	25yr 24hr SCS	2.15	220.9	221.25	221.25	221.32	0.026576	1.13	1.9	15.6	1.04
Trib 1	Reach 1	151	50yr 24hr SCS	2.85	220.9	221.29	221.29	221.36	0.022881	1.17	2.44	17.06	0.99
Trib 1	Reach 1	151	100yr 24hr SCS	3.62	220.9	221.31	221.31	221.39	0.023626	1.27	2.85	18.03	1.02
Trib 1	Reach 1	151	200yr 24hr SCS	4.58	220.9	221.35	221.35	221.43	0.022878	1.27	3.62	22.5	1.01
Trib 1	Reach 1	135	Timmins	5.77	220.29	220.65	220.65	220.74	0.022929	1.31	4.39	25.96	1.02
Trib 1	Reach 1	135	2yr 24hr SCS	0.41	220.29	220.43	220.43	220.47	0.030332	0.83	0.49	7.11	1.01
Trib 1	Reach 1	135	5yr 24hr SCS	0.87	220.29	220.48	220.48	220.53	0.029041	0.95	0.91	10.44	1.03
Trib 1	Reach 1	135	10yr 24hr SCS	1.36	220.29	220.53	220.53	220.57	0.027492	0.93	1.47	16.89	1
Trib 1	Reach 1	135	25yr 24hr SCS	2.15	220.29	220.56	220.56	220.61	0.023862	0.97	2.23	21.59	0.96
Trib 1	Reach 1	135	50yr 24hr SCS	2.85	220.29	220.58	220.58	220.64	0.026372	1.09	2.6	22.56	1.03
Trib 1	Reach 1	135	100yr 24hr SCS	3.62	220.29	220.6	220.6	220.67	0.02519	1.16	3.11	23.71	1.03
Trib 1	Reach 1	135	200yr 24hr SCS	4.58	220.29	220.63	220.63	220.7	0.024149	1.24	3.7	24.83	1.03
Trib 1	Reach 1	78	Timmins	5.77	217.51	218.33	218.33	218.52	0.017625	1.93	2.98	8	1.01
Trib 1	Reach 1	78	2yr 24hr SCS	0.41	217.51	217.76	217.76	217.84	0.023981	1.23	0.33	2.22	1.01
Trib 1	Reach 1	78	5yr 24hr SCS	0.87	217.51	217.87	217.87	217.97	0.021122	1.45	0.6	2.82	1
Trib 1	Reach 1	78	10yr 24hr SCS	1.36	217.51	217.95	217.95	218.08	0.020096	1.6	0.85	3.32	1.01
Trib 1	Reach 1	78	25yr 24hr SCS	2.15	217.51	218.06	218.06	218.2	0.019487	1.68	1.28	4.55	1.01
Trib 1	Reach 1	78	50yr 24hr SCS	2.85	217.51	218.13	218.13	218.28	0.018988	1.71	1.66	5.63	1.01
Trib 1	Reach 1	78	100yr 24hr SCS	3.62	217.51	218.19	218.19	218.36	0.018844	1.78	2.03	6.45	1.02
Trib 1	Reach 1	78	200yr 24hr SCS	4.58	217.51	218.26	218.26	218.43	0.018322	1.86	2.46	7.19	1.02
Trib 1	Reach 1	33	Timmins	5.77	215.53	216.17	216.17	216.33	0.018308	1.8	3.2	9.94	1.01
Trib 1	Reach 1	33	2yr 24hr SCS	0.41	215.53	215.75	215.75	215.81	0.023549	1.09	0.38	2.99	0.98
Trib 1	Reach 1	33	5yr 24hr SCS	0.87	215.53	215.84	215.84	215.93	0.021831	1.3	0.67	3.87	1
Trib 1	Reach 1	33	10yr 24hr SCS	1.36	215.53	215.91	215.91	216	0.023541	1.27	1.07	6.73	1.02
Trib 1	Reach 1	33	25yr 24hr SCS	2.15	215.53	215.97	215.97	216.08	0.021827	1.43	1.51	7.6	1.02
Trib 1	Reach 1	33	50yr 24hr SCS	2.85	215.53	216.02	216.02	216.14	0.020755	1.52	1.87	8.22	1.02
Trib 1	Reach 1	33	100yr 24hr SCS	3.62	215.53	216.06	216.06	216.2	0.019995	1.62	2.23	8.64	1.02
Trib 1	Reach 1	33	200yr 24hr SCS	4.58	215.53	216.11	216.11	216.26	0.018753	1.71	2.67	9.12	1.01
Trib 1	Reach 1	22	Timmins	5.77	215.31	215.73	215.73	215.82	0.015086	1.56	5.21	29.02	0.91
Trib 1	Reach 1	22	2yr 24hr SCS	0.41	215.31	215.47	215.47	215.51	0.028984	0.83	0.5	7.15	1
Trib 1	Reach 1	22	5yr 24hr SCS	0.87	215.31	215.52	215.52	215.57	0.024841	1	0.92	10.29	0.99
Trib 1	Reach 1	22	10yr 24hr SCS	1.36	215.31	215.56	215.56	215.62	0.020295	1.09	1.38	13.56	0.93
Trib 1	Reach 1	22	25yr 24hr SCS	2.15	215.31	215.6	215.6	215.67	0.019277	1.23	2.08	20.41	0.94
Trib 1	Reach 1	22	50yr 24hr SCS	2.85	215.31	215.64	215.64	215.71	0.015368	1.26	2.95	23.69	0.87
Trib 1	Reach 1	22	100yr 24hr SCS	3.62	215.31	215.67	215.67	215.74	0.014286	1.32	3.67	25.36	0.86
Trib 1	Reach 1	22	200yr 24hr SCS	4.58	215.31	215.69	215.69	215.78	0.016105	1.48	4.21	26.2	0.92
Lansdowne	Reach 1-Low	1520	Timmins	7.93	214.1	215.11		215.23	0.011255	1.53	5.17	14.12	0.81
Lansdowne	Reach 1-Low	1520	2yr 24hr SCS	0.53	214.1	214.37	214.32	214.42	0.010237	0.97	0.55	2.74	0.69
Lansdowne	Reach 1-Low	1520	5yr 24hr SCS	1.09	214.1	214.49	214.43	214.56	0.011234	1.22	0.89	3.36	0.75
Lansdowne	Reach 1-Low	1520	10yr 24hr SCS	1.71	214.1	214.58	214.52	214.68	0.011934	1.39	1.23	3.98	0.8
Lansdowne	Reach 1-Low	1520	25yr 24hr SCS	2.73	214.1	214.64	214.64	214.81	0.018569	1.82	1.5	4.53	1.01
Lansdowne	Reach 1-Low	1520	50yr 24hr SCS	3.64	214.1	214.73	214.73	214.91	0.018075	1.89	1.93	5.39	1.01
Lansdowne	Reach 1-Low	1520	100yr 24hr SCS	4.65	214.1	214.81	214.81	215	0.017709	1.93	2.4	6.4	1.01
Lansdowne	Reach 1-Low	1520	200yr 24hr SCS	5.9	214.1	214.89	214.89	215.09	0.017114	1.97	2.99	7.56	1
Lansdowne	Reach 1-Low	1488	Timmins	7.93	213.64	215.08		215.11	0.001291	0.66	12.1	23.26	0.29
Lansdowne	Reach 1-Low	1488	2yr 24hr SCS	0.53	213.64	213.87	213.87	213.94	0.023369	1.24	0.43	2.73	1
Lansdowne	Reach 1-Low	1488	5yr 24hr SCS	1.09	213.64	213.97	213.97	214.08	0.021297	1.48	0.73	3.33	1.01
Lansdowne	Reach 1-Low	1488	10yr 24hr SCS	1.71	213.64	214.05	214.05	214.19	0.01978	1.64	1.04	3.84	1
Lansdowne	Reach 1-Low	1488	25yr 24hr SCS	2.73	213.64	214.28		214.35	0.007609	1.19	2.3	6.72	0.65
Lansdowne	Reach 1-Low	1488	50yr 24hr SCS	3.64	213.64	214.44		214.5	0.004197	1.05	3.46	7.78	0.5
Lansdowne	Reach 1-Low	1488	100yr 24hr SCS	4.65	213.64	214.61		214.65	0.002939	0.93	4.98	10.3	0.43
Lansdowne	Reach 1-Low	1488	200yr 24hr SCS	5.9	213.64	214.82		214.85	0.001694	0.79	7.46	13.14	0.34
Lansdowne	Reach 1-Low	1433	Timmins	7.93	212.43	215.1		215.1	0.00001	0.09	130.25	180.79	0.03
Lansdowne	Reach 1-Low	1433	2yr 24hr SCS	0.53	212.43	213.53		213.53	0.000122	0.17	3.19	7.55	0.08
Lansdowne	Reach 1-Low	1433	5yr 24hr SCS	1.09	212.43	213.59		213.6	0.000364	0.3	3.67	8.35	0.14
Lansdowne	Reach 1-Low	1433	10yr 24hr SCS	1.71	212.43	213.96		213.96	0.000146	0.24	7.22	11.79	0.1
Lansdowne	Reach 1-Low	1433	25yr 24hr SCS	2.73	212.43	214.31		214.31	0.000089	0.2	16.6	54.58	0.08
Lansdowne	Reach 1-Low	1433	50yr 24hr SCS	3.64	212.43	214.47		214.47	0.000077	0.18	28.77	108.11	0.07
Lansdowne	Reach 1-Low	1433	100yr 24hr SCS	4.65	212.43	214.63		214.63	0.000049	0.14	50.3	151.6	0.06
Lansdowne	Reach 1-Low	1433	200yr 24hr SCS	5.9	212.43	214.84		214.84	0.00002	0.11	84.84	168.72	0.04
Lansdowne	Reach 1-Low	1403	Timmins	7.93	213.08	215.1		215.1	0.000003	0.07	230.17	245	0.02
Lansdowne	Reach 1-Low	1403	2yr 24hr SCS	0.53	213.08	213.53		213.53	0.000124	0.13	3.96	14.5	0.08
Lansdowne	Reach 1-Low	1403	5yr 24hr SCS	1.09	213.08	213.58		213.59	0.000296	0.23	4.84	16.27	0.13
Lansdowne	Reach 1-Low	1403	10yr 24hr SCS	1.71	213.08	213.96		213.96	0.000033	0.13	21.3	90.51	0.05
Lansdowne	Reach 1-Low	1403	25yr 24hr SCS	2.73	213.08	214.31		214.31	0.000008	0.08	66.97	154.57	0.03
Lansdowne	Reach 1-Low	1403	50yr 24hr SCS	3.64	213.08	214.47		214.47	0.000006	0.08	92.07	176.6	0.02
Lansdowne	Reach 1-Low	1403	100yr 24hr SCS	4.65	213.08	214.63		214.63	0.000004	0.07	123.15	210.81	0.02
Lansdowne	Reach 1-Low	1403	200yr 24hr SCS	5.9	213.08	214.84		214.84	0.000003	0.07	169.46	224.82	0.02

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Lansdowne	Reach 1-Low	1358	Timmins	7.93	213.36	215.1		215.1	0.000002	0.06	220.72	196.53	0.01
Lansdowne	Reach 1-Low	1358	2yr 24hr SCS	0.53	213.36	213.5		213.51	0.007188	0.43	1.29	17.5	0.5
Lansdowne	Reach 1-Low	1358	5yr 24hr SCS	1.09	213.36	213.5	213.5	213.54	0.030487	0.88	1.29	17.5	1.03
Lansdowne	Reach 1-Low	1358	10yr 24hr SCS	1.71	213.36	213.95		213.95	0.000026	0.08	30.33	131.56	0.04
Lansdowne	Reach 1-Low	1358	25yr 24hr SCS	2.73	213.36	214.31		214.31	0.000004	0.05	83.25	161.25	0.02
Lansdowne	Reach 1-Low	1358	50yr 24hr SCS	3.64	213.36	214.47		214.47	0.000004	0.05	108.78	169.34	0.02
Lansdowne	Reach 1-Low	1358	100yr 24hr SCS	4.65	213.36	214.63		214.63	0.000003	0.05	136.34	170.92	0.02
Lansdowne	Reach 1-Low	1358	200yr 24hr SCS	5.9	213.36	214.84		214.84	0.000002	0.05	172.64	174.4	0.01
Lansdowne	Reach 1-Low	1332	Timmins	7.93	212.96	215.1		215.1	0.000003	0.06	188.99	141.8	0.02
Lansdowne	Reach 1-Low	1332	2yr 24hr SCS	0.53	212.96	213.21	213.21	213.25	0.017736	0.99	0.76	10.81	0.86
Lansdowne	Reach 1-Low	1332	5yr 24hr SCS	1.09	212.96	213.36		213.37	0.003132	0.41	3.15	22.41	0.36
Lansdowne	Reach 1-Low	1332	10yr 24hr SCS	1.71	212.96	213.95		213.95	0.000011	0.06	42.63	113.05	0.03
Lansdowne	Reach 1-Low	1332	25yr 24hr SCS	2.73	212.96	214.31		214.31	0.000003	0.05	84.86	120.83	0.02
Lansdowne	Reach 1-Low	1332	50yr 24hr SCS	3.64	212.96	214.47		214.47	0.000003	0.05	103.65	123.98	0.02
Lansdowne	Reach 1-Low	1332	100yr 24hr SCS	4.65	212.96	214.63		214.63	0.000003	0.06	124.24	130.72	0.02
Lansdowne	Reach 1-Low	1332	200yr 24hr SCS	5.9	212.96	214.84		214.84	0.000003	0.06	153.04	138.36	0.02
Lansdowne	Reach 1-Low	1308	Timmins	7.93	212.17	215.1		215.1	0.000003	0.08	132.61	77.75	0.02
Lansdowne	Reach 1-Low	1308	2yr 24hr SCS	0.53	212.17	213.03		213.04	0.000272	0.24	2.23	5.33	0.12
Lansdowne	Reach 1-Low	1308	5yr 24hr SCS	1.09	212.17	213.35		213.36	0.000161	0.18	7.23	39.97	0.09
Lansdowne	Reach 1-Low	1308	10yr 24hr SCS	1.71	212.17	213.95		213.95	0.000004	0.05	46.83	70.54	0.02
Lansdowne	Reach 1-Low	1308	25yr 24hr SCS	2.73	212.17	214.31		214.31	0.000003	0.05	72.81	74.4	0.02
Lansdowne	Reach 1-Low	1308	50yr 24hr SCS	3.64	212.17	214.47		214.47	0.000003	0.06	84.3	74.82	0.02
Lansdowne	Reach 1-Low	1308	100yr 24hr SCS	4.65	212.17	214.63		214.63	0.000003	0.07	96.51	75.98	0.02
Lansdowne	Reach 1-Low	1308	200yr 24hr SCS	5.9	212.17	214.84		214.84	0.000003	0.07	112.67	77.1	0.02
Lansdowne	Reach 1-Low	1305	Timmins	7.93	212.15	215.1	213.22	215.1	0.000003	0.07	142.14	75.76	0.02
Lansdowne	Reach 1-Low	1305	2yr 24hr SCS	0.53	212.15	213.03	212.39	213.03	0.000458	0.24	2.23	14.53	0.15
Lansdowne	Reach 1-Low	1305	5yr 24hr SCS	1.09	212.15	213.35	212.5	213.36	0.000121	0.19	5.88	66.11	0.08
Lansdowne	Reach 1-Low	1305	10yr 24hr SCS	1.71	212.15	213.95	212.61	213.95	0.000021	0.13	13.5	68.2	0.04
Lansdowne	Reach 1-Low	1305	25yr 24hr SCS	2.73	212.15	214.31	212.75	214.31	0.00002	0.15	18.81	69.07	0.04
Lansdowne	Reach 1-Low	1305	50yr 24hr SCS	3.64	212.15	214.46	212.86	214.47	0.000024	0.18	21.35	72.35	0.05
Lansdowne	Reach 1-Low	1305	100yr 24hr SCS	4.65	212.15	214.63	213.1	214.63	0.000028	0.2	24.4	73.72	0.05
Lansdowne	Reach 1-Low	1305	200yr 24hr SCS	5.9	212.15	214.84	213.15	214.84	0.000029	0.23	28.62	74.51	0.05
Lansdowne	Reach 1-Low	1298	HWY 94	Bridge									
Lansdowne	Reach 1-Low	1280	Timmins	7.93	212.23	214.57	213.39	214.6	0.000392	0.78	10.18	75.48	0.19
Lansdowne	Reach 1-Low	1280	2yr 24hr SCS	0.53	212.23	213	212.75	213.01	0.001291	0.43	1.24	4.19	0.25
Lansdowne	Reach 1-Low	1280	5yr 24hr SCS	1.09	212.23	213.32	212.87	213.33	0.000473	0.37	2.92	27.65	0.17
Lansdowne	Reach 1-Low	1280	10yr 24hr SCS	1.71	212.23	213.92	212.96	213.93	0.000085	0.27	6.41	72.44	0.08
Lansdowne	Reach 1-Low	1280	25yr 24hr SCS	2.73	212.23	214.23	213.06	214.24	0.000095	0.33	8.22	74.09	0.09
Lansdowne	Reach 1-Low	1280	50yr 24hr SCS	3.64	212.23	214.33	213.16	214.33	0.000136	0.42	8.76	74.38	0.11
Lansdowne	Reach 1-Low	1280	100yr 24hr SCS	4.65	212.23	214.4	213.22	214.41	0.000189	0.51	9.19	74.71	0.13
Lansdowne	Reach 1-Low	1280	200yr 24hr SCS	5.9	212.23	214.47	213.29	214.49	0.000262	0.61	9.62	74.98	0.15
Lansdowne	Reach 1-Low	1279	Timmins	7.93	212.34	214.58		214.59	0.000005	0.09	117.34	78.05	0.02
Lansdowne	Reach 1-Low	1279	2yr 24hr SCS	0.53	212.34	213.01		213.01	0.000059	0.08	8.17	42.55	0.05
Lansdowne	Reach 1-Low	1279	5yr 24hr SCS	1.09	212.34	213.33		213.33	0.000011	0.06	25.25	60.06	0.03
Lansdowne	Reach 1-Low	1279	10yr 24hr SCS	1.71	212.34	213.92		213.92	0.000001	0.04	66.8	74.79	0.01
Lansdowne	Reach 1-Low	1279	25yr 24hr SCS	2.73	212.34	214.24		214.24	0.000001	0.04	90.38	76.36	0.01
Lansdowne	Reach 1-Low	1279	50yr 24hr SCS	3.64	212.34	214.33		214.33	0.000002	0.05	97.61	76.77	0.01
Lansdowne	Reach 1-Low	1279	100yr 24hr SCS	4.65	212.34	214.41		214.41	0.000003	0.06	103.48	77.09	0.02
Lansdowne	Reach 1-Low	1279	200yr 24hr SCS	5.9	212.34	214.48		214.48	0.000004	0.07	109.39	77.43	0.02
Lansdowne	Reach 1-Low	1267	Timmins	7.93	212.56	214.57		214.58	0.000254	0.56	22.77	43.21	0.15
Lansdowne	Reach 1-Low	1267	2yr 24hr SCS	0.53	212.56	212.9	212.9	213	0.023744	1.34	0.4	2.24	1.02
Lansdowne	Reach 1-Low	1267	5yr 24hr SCS	1.09	212.56	213.31		213.32	0.001696	0.59	1.85	4.97	0.31
Lansdowne	Reach 1-Low	1267	10yr 24hr SCS	1.71	212.56	213.92		213.92	0.00015	0.29	6.21	12.44	0.1
Lansdowne	Reach 1-Low	1267	25yr 24hr SCS	2.73	212.56	214.23		214.23	0.000102	0.3	11.76	22.78	0.09
Lansdowne	Reach 1-Low	1267	50yr 24hr SCS	3.64	212.56	214.32		214.33	0.000126	0.35	14.16	27.97	0.1
Lansdowne	Reach 1-Low	1267	100yr 24hr SCS	4.65	212.56	214.4		214.41	0.000158	0.4	16.31	29.6	0.12
Lansdowne	Reach 1-Low	1267	200yr 24hr SCS	5.9	212.56	214.47		214.48	0.000191	0.46	18.83	37.52	0.13
Lansdowne	Reach 1-Low	1264	Timmins	9.73	212.31	214.56		214.58	0.000628	0.75	16.45	22.21	0.22
Lansdowne	Reach 1-Low	1264	2yr 24hr SCS	0.69	212.31	212.86		212.92	0.009504	1.13	0.61	1.99	0.65
Lansdowne	Reach 1-Low	1264	5yr 24hr SCS	1.38	212.31	213.29		213.32	0.00223	0.77	1.79	3.52	0.35
Lansdowne	Reach 1-Low	1264	10yr 24hr SCS	2.15	212.31	213.91		213.92	0.000462	0.43	5.01	7.7	0.17
Lansdowne	Reach 1-Low	1264	25yr 24hr SCS	3.4	212.31	214.23		214.23	0.000298	0.42	9.44	19.9	0.14
Lansdowne	Reach 1-Low	1264	50yr 24hr SCS	4.51	212.31	214.32		214.33	0.000346	0.48	11.31	20.86	0.16
Lansdowne	Reach 1-Low	1264	100yr 24hr SCS	5.73	212.31	214.39		214.4	0.00041	0.55	12.85	21.25	0.17
Lansdowne	Reach 1-Low	1264	200yr 24hr SCS	7.24	212.31	214.46		214.48	0.000492	0.63	14.39	21.64	0.19
Lansdowne	Reach 1-Low	1263	Timmins	9.73	212.23	214.56	213.59	214.58	0.000568	0.69	16.85	21.95	0.21
Lansdowne	Reach 1-Low	1263	2yr 24hr SCS	0.69	212.23	212.88	212.54	212.9	0.001603	0.61	1.14	2.41	0.28
Lansdowne	Reach 1-Low	1263	5yr 24hr SCS	1.38	212.23	213.29	212.69	213.31	0.000938	0.58	2.38	3.58	0.23
Lansdowne	Reach 1-Low	1263	10yr 24hr SCS	2.15	212.23	213.91	212.83	213.92	0.000333	0.39	5.58	7.71	0.14
Lansdowne	Reach 1-Low	1263	25yr 24hr SCS	3.4	212.23	214.23	213.01	214.23	0.000269	0.38	9.91	20.15	0.14
Lansdowne	Reach 1-Low	1263	50yr 24hr SCS	4.51	212.23	214.32	213.14	214.33	0.000313	0.44	11.78	20.62	0.15
Lansdowne	Reach 1-Low	1263	100yr 24hr SCS	5.73	212.23	214.39	213.26	214.4	0.00037	0.5	13.3	20.95	0.16
Lansdowne	Reach 1-Low	1263	200yr 24hr SCS	7.24	212.23	214.46	213.39	214.48	0.000444	0.58	14.82	21.3	0.18
Lansdowne	Reach 1-Low	1257	Driveway 1	Culvert									

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Lansdowne	Reach 1-Low	1242	Timmins	9.73	211.86	214.21	213.15	214.24	0.000696	0.79	12.45	11.38	0.23
Lansdowne	Reach 1-Low	1242	2yr 24hr SCS	0.69	211.86	212.82	212.19	212.82	0.000281	0.31	2.24	3.7	0.13
Lansdowne	Reach 1-Low	1242	5yr 24hr SCS	1.38	211.86	213.06	212.33	213.07	0.000435	0.43	3.22	4.53	0.16
Lansdowne	Reach 1-Low	1242	10yr 24hr SCS	2.15	211.86	213.77	212.45	213.78	0.000103	0.27	8.06	8.81	0.09
Lansdowne	Reach 1-Low	1242	25yr 24hr SCS	3.4	211.86	213.93	212.61	213.93	0.000159	0.37	9.31	9.59	0.11
Lansdowne	Reach 1-Low	1242	50yr 24hr SCS	4.51	211.86	213.99	212.73	214	0.000231	0.46	9.86	9.94	0.13
Lansdowne	Reach 1-Low	1242	100yr 24hr SCS	5.73	211.86	214.05	212.84	214.07	0.000316	0.55	10.37	10.27	0.16
Lansdowne	Reach 1-Low	1242	200yr 24hr SCS	7.24	211.86	214.12	212.97	214.14	0.000482	0.63	11.48	10.64	0.19
Lansdowne	Reach 1-Low	1240	Timmins	9.73	212.17	214.21		214.24	0.000811	0.79	12.36	12.41	0.25
Lansdowne	Reach 1-Low	1240	2yr 24hr SCS	0.69	212.17	212.78		212.81	0.005854	0.8	0.86	3.59	0.52
Lansdowne	Reach 1-Low	1240	5yr 24hr SCS	1.38	212.17	213.04		213.06	0.002174	0.66	2.08	5.5	0.35
Lansdowne	Reach 1-Low	1240	10yr 24hr SCS	2.15	212.17	213.77		213.78	0.000147	0.28	7.58	9.53	0.1
Lansdowne	Reach 1-Low	1240	25yr 24hr SCS	3.4	212.17	213.92		213.93	0.000224	0.37	9.1	10.42	0.13
Lansdowne	Reach 1-Low	1240	50yr 24hr SCS	4.51	212.17	213.99		214	0.000331	0.46	9.82	11.09	0.16
Lansdowne	Reach 1-Low	1240	100yr 24hr SCS	5.73	212.17	214.05		214.07	0.000444	0.54	10.52	11.47	0.18
Lansdowne	Reach 1-Low	1240	200yr 24hr SCS	7.24	212.17	214.12		214.14	0.000588	0.64	11.27	11.86	0.21
Lansdowne	Reach 1-Low	1223	Timmins	9.73	212.18	214.19		214.23	0.000683	0.85	13.56	15.02	0.24
Lansdowne	Reach 1-Low	1223	2yr 24hr SCS	0.69	212.18	212.62	212.55	212.68	0.010297	1.1	0.63	2.55	0.7
Lansdowne	Reach 1-Low	1223	5yr 24hr SCS	1.38	212.18	213.01		213.03	0.001751	0.67	2.06	4.59	0.32
Lansdowne	Reach 1-Low	1223	10yr 24hr SCS	2.15	212.18	213.77		213.77	0.000142	0.3	7.83	12.14	0.1
Lansdowne	Reach 1-Low	1223	25yr 24hr SCS	3.4	212.18	213.92		213.93	0.000203	0.39	9.73	13.03	0.12
Lansdowne	Reach 1-Low	1223	50yr 24hr SCS	4.51	212.18	213.99		214	0.000283	0.49	10.61	13.49	0.15
Lansdowne	Reach 1-Low	1223	100yr 24hr SCS	5.73	212.18	214.05		214.06	0.000373	0.58	11.43	13.94	0.17
Lansdowne	Reach 1-Low	1223	200yr 24hr SCS	7.24	212.18	214.11		214.13	0.000489	0.69	12.31	14.39	0.2
Lansdowne	Reach 1-Low	1214	Timmins	9.73	212.18	214.19		214.22	0.000418	0.77	19.02	29.78	0.19
Lansdowne	Reach 1-Low	1214	2yr 24hr SCS	0.69	212.18	212.45	212.45	212.54	0.022776	1.32	0.52	3.01	1.01
Lansdowne	Reach 1-Low	1214	5yr 24hr SCS	1.38	212.18	213		213.02	0.000776	0.5	2.77	5.21	0.22
Lansdowne	Reach 1-Low	1214	10yr 24hr SCS	2.15	212.18	213.77		213.77	0.00008	0.28	9.57	16.64	0.08
Lansdowne	Reach 1-Low	1214	25yr 24hr SCS	3.4	212.18	213.92		213.93	0.00012	0.37	12.28	19.97	0.1
Lansdowne	Reach 1-Low	1214	50yr 24hr SCS	4.51	212.18	213.99		213.99	0.00017	0.45	13.64	21.72	0.12
Lansdowne	Reach 1-Low	1214	100yr 24hr SCS	5.73	212.18	214.05		214.06	0.000228	0.53	15.01	23.4	0.14
Lansdowne	Reach 1-Low	1214	200yr 24hr SCS	7.24	212.18	214.11		214.12	0.000301	0.63	16.56	26.44	0.16
Lansdowne	Reach 1-Low	1205	Timmins	9.73	211.82	214.2		214.21	0.000441	0.56	20.42	28.88	0.18
Lansdowne	Reach 1-Low	1205	2yr 24hr SCS	0.69	211.82	212.42		212.44	0.002402	0.65	1.07	3.17	0.35
Lansdowne	Reach 1-Low	1205	5yr 24hr SCS	1.38	211.82	213		213.01	0.000352	0.38	3.6	5.24	0.15
Lansdowne	Reach 1-Low	1205	10yr 24hr SCS	2.15	211.82	213.77		213.77	0.000084	0.23	10.13	16.09	0.08
Lansdowne	Reach 1-Low	1205	25yr 24hr SCS	3.4	211.82	213.92		213.92	0.000173	0.29	12.97	22.11	0.11
Lansdowne	Reach 1-Low	1205	50yr 24hr SCS	4.51	211.82	213.99		213.99	0.000237	0.35	14.52	25.4	0.13
Lansdowne	Reach 1-Low	1205	100yr 24hr SCS	5.73	211.82	214.05		214.05	0.000288	0.41	16.16	27.69	0.14
Lansdowne	Reach 1-Low	1205	200yr 24hr SCS	7.24	211.82	214.11		214.12	0.000348	0.47	17.92	28.24	0.16
Lansdowne	Reach 1-Low	1202	Timmins	9.73	211.15	214.2	212.46	214.21	0.000365	0.56	21.57	28.78	0.16
Lansdowne	Reach 1-Low	1202	2yr 24hr SCS	0.69	211.15	212.43	211.45	212.43	0.000105	0.22	3.07	3.24	0.07
Lansdowne	Reach 1-Low	1202	5yr 24hr SCS	1.38	211.15	213	211.6	213.01	0.000115	0.27	5.16	4.44	0.08
Lansdowne	Reach 1-Low	1202	10yr 24hr SCS	2.15	211.15	213.77	211.72	213.77	0.000068	0.21	11.01	16.14	0.07
Lansdowne	Reach 1-Low	1202	25yr 24hr SCS	3.4	211.15	213.92	211.89	213.92	0.000127	0.28	13.98	22.79	0.09
Lansdowne	Reach 1-Low	1202	50yr 24hr SCS	4.51	211.15	213.99	212.02	213.99	0.000171	0.34	15.66	26.88	0.11
Lansdowne	Reach 1-Low	1202	100yr 24hr SCS	5.73	211.15	214.05	212.14	214.05	0.000218	0.4	17.32	27.81	0.12
Lansdowne	Reach 1-Low	1202	200yr 24hr SCS	7.24	211.15	214.11	212.27	214.12	0.000275	0.46	19.08	28.19	0.14
Lansdowne	Reach 1-Low	1199	Driveway 2	Culvert									
Lansdowne	Reach 1-Low	1189	Timmins	9.73	211.07	214.12	212.21	214.13	0.000155	0.44	29.11	41.97	0.11
Lansdowne	Reach 1-Low	1189	2yr 24hr SCS	0.69	211.07	212.4	211.33	212.4	0.000046	0.16	4.33	4.7	0.05
Lansdowne	Reach 1-Low	1189	5yr 24hr SCS	1.38	211.07	212.88	211.45	212.88	0.000058	0.2	7.07	6.93	0.06
Lansdowne	Reach 1-Low	1189	10yr 24hr SCS	2.15	211.07	213.61	211.56	213.61	0.000031	0.16	14.05	16.53	0.05
Lansdowne	Reach 1-Low	1189	25yr 24hr SCS	3.4	211.07	213.85	211.7	213.85	0.000042	0.2	19.4	26.93	0.06
Lansdowne	Reach 1-Low	1189	50yr 24hr SCS	4.51	211.07	213.92	211.81	213.93	0.000059	0.25	21.69	33.92	0.07
Lansdowne	Reach 1-Low	1189	100yr 24hr SCS	5.73	211.07	213.99	211.92	213.99	0.000079	0.3	23.91	36.59	0.08
Lansdowne	Reach 1-Low	1189	200yr 24hr SCS	7.24	211.07	214.04	212.03	214.05	0.000107	0.35	26.06	39.51	0.09
Lansdowne	Reach 1-Low	1187	Timmins	9.73	211.66	214.11		214.12	0.000343	0.54	23.47	42.83	0.16
Lansdowne	Reach 1-Low	1187	2yr 24hr SCS	0.69	211.66	212.37		212.4	0.002428	0.68	1.01	2.58	0.35
Lansdowne	Reach 1-Low	1187	5yr 24hr SCS	1.38	211.66	212.87		212.88	0.000887	0.52	2.66	4.86	0.22
Lansdowne	Reach 1-Low	1187	10yr 24hr SCS	2.15	211.66	213.61		213.61	0.000109	0.24	9.25	13.7	0.09
Lansdowne	Reach 1-Low	1187	25yr 24hr SCS	3.4	211.66	213.85		213.85	0.000126	0.27	14.23	26.48	0.09
Lansdowne	Reach 1-Low	1187	50yr 24hr SCS	4.51	211.66	213.92		213.93	0.000159	0.32	16.28	29.1	0.11
Lansdowne	Reach 1-Low	1187	100yr 24hr SCS	5.73	211.66	213.98		213.99	0.000201	0.38	18.31	36.38	0.12
Lansdowne	Reach 1-Low	1187	200yr 24hr SCS	7.24	211.66	214.04		214.05	0.000254	0.44	20.42	39.91	0.14
Lansdowne	Reach 1-Low	1176	Timmins	9.73	211.57	214.1		214.12	0.000421	0.73	22.31	35.6	0.18
Lansdowne	Reach 1-Low	1176	2yr 24hr SCS	0.69	211.57	212.36		212.37	0.001507	0.59	1.17	2.4	0.27
Lansdowne	Reach 1-Low	1176	5yr 24hr SCS	1.38	211.57	212.86		212.87	0.000705	0.51	2.69	3.63	0.19
Lansdowne	Reach 1-Low	1176	10yr 24hr SCS	2.15	211.57	213.6		213.61	0.000114	0.3	9.06	15.61	0.09
Lansdowne	Reach 1-Low	1176	25yr 24hr SCS	3.4	211.57	213.84		213.85	0.000128	0.36	14.29	26.92	0.09
Lansdowne	Reach 1-Low	1176	50yr 24hr SCS	4.51	211.57	213.92		213.92	0.000174	0.43	16.37	29.77	0.11
Lansdowne	Reach 1-Low	1176	100yr 24hr SCS	5.73	211.57	213.98		213.99	0.000225	0.51	18.23	31.12	0.13
Lansdowne	Reach 1-Low	1176	200yr 24hr SCS	7.24	211.57	214.03		214.04	0.000297	0.59	19.93	32.16	0.15

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Lansdowne	Reach 1-Low	1173	Timmins	9.73	211.57	214.1	213.35	214.12	0.000347	0.76	23.81	41.82	0.17
Lansdowne	Reach 1-Low	1173	2yr 24hr SCS	0.69	211.57	212.34	211.91	212.37	0.000959	0.7	0.99	2.76	0.26
Lansdowne	Reach 1-Low	1173	5yr 24hr SCS	1.38	211.57	212.83	212.09	212.86	0.000702	0.84	1.65	4.83	0.24
Lansdowne	Reach 1-Low	1173	10yr 24hr SCS	2.15	211.57	213.57	212.25	213.6	0.000349	0.81	2.65	14.72	0.19
Lansdowne	Reach 1-Low	1173	25yr 24hr SCS	3.4	211.57	213.84	212.48	213.85	0.000097	0.37	15.16	26.4	0.09
Lansdowne	Reach 1-Low	1173	50yr 24hr SCS	4.51	211.57	213.92	212.66	213.92	0.000135	0.45	17.17	29.05	0.1
Lansdowne	Reach 1-Low	1173	100yr 24hr SCS	5.73	211.57	213.98	212.83	213.99	0.00018	0.52	19.09	33.81	0.12
Lansdowne	Reach 1-Low	1173	200yr 24hr SCS	7.24	211.57	214.03	213.04	214.04	0.000242	0.62	21.02	37.41	0.14
Lansdowne	Reach 1-Low	1169	Driveway 3	Culvert									
Lansdowne	Reach 1-Low	1162	Timmins	9.73	211.4	213.73	212.74	213.77	0.000931	0.95	16.08	49.34	0.25
Lansdowne	Reach 1-Low	1162	2yr 24hr SCS	0.69	211.4	212.32	211.72	212.32	0.000378	0.38	1.82	3.09	0.15
Lansdowne	Reach 1-Low	1162	5yr 24hr SCS	1.38	211.4	212.68	211.88	212.69	0.000374	0.5	2.77	3.81	0.16
Lansdowne	Reach 1-Low	1162	10yr 24hr SCS	2.15	211.4	213.17	212.02	213.19	0.00025	0.53	4.08	5	0.14
Lansdowne	Reach 1-Low	1162	25yr 24hr SCS	3.4	211.4	213.52	212.18	213.53	0.000255	0.44	9.34	24.14	0.13
Lansdowne	Reach 1-Low	1162	50yr 24hr SCS	4.51	211.4	213.58	212.29	213.6	0.000346	0.54	11.02	27.23	0.15
Lansdowne	Reach 1-Low	1162	100yr 24hr SCS	5.73	211.4	213.65	212.41	213.67	0.000437	0.62	12.99	32.55	0.17
Lansdowne	Reach 1-Low	1162	200yr 24hr SCS	7.24	211.4	213.68	212.54	213.71	0.000621	0.76	13.97	34.87	0.21
Lansdowne	Reach 1-Low	1161	Timmins	9.73	211.46	213.74		213.76	0.000721	0.81	18.99	54.77	0.22
Lansdowne	Reach 1-Low	1161	2yr 24hr SCS	0.69	211.46	212.32		212.32	0.000542	0.38	1.82	3.55	0.17
Lansdowne	Reach 1-Low	1161	5yr 24hr SCS	1.38	211.46	212.68		212.69	0.000441	0.44	3.14	3.76	0.15
Lansdowne	Reach 1-Low	1161	10yr 24hr SCS	2.15	211.46	213.17		213.18	0.000318	0.39	5.56	7.79	0.14
Lansdowne	Reach 1-Low	1161	25yr 24hr SCS	3.4	211.46	213.52		213.53	0.000225	0.4	10.79	26.33	0.12
Lansdowne	Reach 1-Low	1161	50yr 24hr SCS	4.51	211.46	213.59		213.6	0.000303	0.49	12.76	31.6	0.14
Lansdowne	Reach 1-Low	1161	100yr 24hr SCS	5.73	211.46	213.65		213.67	0.000365	0.55	14.99	34.78	0.16
Lansdowne	Reach 1-Low	1161	200yr 24hr SCS	7.24	211.46	213.68		213.7	0.000512	0.67	16.18	45.14	0.19
Lansdowne	Reach 1-Low	1160	Timmins	9.73	211.23	213.72		213.76	0.001133	1	16.99	54.21	0.28
Lansdowne	Reach 1-Low	1160	2yr 24hr SCS	0.69	211.23	212.3		212.32	0.001627	0.58	1.18	2.32	0.26
Lansdowne	Reach 1-Low	1160	5yr 24hr SCS	1.38	211.23	212.66		212.68	0.001298	0.62	2.22	3.52	0.25
Lansdowne	Reach 1-Low	1160	10yr 24hr SCS	2.15	211.23	213.17		213.18	0.000514	0.48	4.49	6.17	0.17
Lansdowne	Reach 1-Low	1160	25yr 24hr SCS	3.4	211.23	213.51		213.53	0.000344	0.5	8.85	26.59	0.15
Lansdowne	Reach 1-Low	1160	50yr 24hr SCS	4.51	211.23	213.58		213.6	0.000457	0.59	10.78	33.57	0.17
Lansdowne	Reach 1-Low	1160	100yr 24hr SCS	5.73	211.23	213.65		213.67	0.000559	0.68	13.19	44.26	0.19
Lansdowne	Reach 1-Low	1160	200yr 24hr SCS	7.24	211.23	213.67		213.7	0.000785	0.82	14.43	48.57	0.23
Lansdowne	Reach 1-Low	1159	Timmins	9.73	211.26	213.72	213.39	213.76	0.002332	0.94	14.12	43.93	0.35
Lansdowne	Reach 1-Low	1159	2yr 24hr SCS	0.69	211.26	212.3	211.69	212.32	0.001945	0.66	1.05	1.27	0.23
Lansdowne	Reach 1-Low	1159	5yr 24hr SCS	1.38	211.26	212.63	211.9	212.68	0.003076	0.95	1.45	1.62	0.28
Lansdowne	Reach 1-Low	1159	10yr 24hr SCS	2.15	211.26	213.11	212.1	213.17	0.002595	1.05	2.05	3.52	0.26
Lansdowne	Reach 1-Low	1159	25yr 24hr SCS	3.4	211.26	213.51	212.36	213.52	0.000995	0.55	6.73	23.37	0.25
Lansdowne	Reach 1-Low	1159	50yr 24hr SCS	4.51	211.26	213.58	212.56	213.59	0.001205	0.63	8.57	31.29	0.26
Lansdowne	Reach 1-Low	1159	100yr 24hr SCS	5.73	211.26	213.64	212.75	213.66	0.001304	0.68	10.96	39.16	0.27
Lansdowne	Reach 1-Low	1159	200yr 24hr SCS	7.24	211.26	213.67	212.99	213.7	0.001757	0.8	12.04	40.74	0.31
Lansdowne	Reach 1-Low	1155	Driveway 4	Culvert									
Lansdowne	Reach 1-Low	1149	Timmins	9.73	211.23	213.11	212.62	213.23	0.003127	1.51	6.45	6.96	0.46
Lansdowne	Reach 1-Low	1149	2yr 24hr SCS	0.69	211.23	212.25	211.59	212.26	0.000385	0.34	2.03	3.55	0.14
Lansdowne	Reach 1-Low	1149	5yr 24hr SCS	1.38	211.23	212.41	211.75	212.43	0.000815	0.52	2.67	4.45	0.21
Lansdowne	Reach 1-Low	1149	10yr 24hr SCS	2.15	211.23	212.53	211.89	212.55	0.001213	0.67	3.2	4.89	0.27
Lansdowne	Reach 1-Low	1149	25yr 24hr SCS	3.4	211.23	212.68	212.08	212.72	0.001626	0.85	4.01	5.39	0.31
Lansdowne	Reach 1-Low	1149	50yr 24hr SCS	4.51	211.23	212.78	212.22	212.83	0.001983	0.99	4.54	5.72	0.35
Lansdowne	Reach 1-Low	1149	100yr 24hr SCS	5.73	211.23	212.87	212.35	212.94	0.002291	1.13	5.06	6.03	0.38
Lansdowne	Reach 1-Low	1149	200yr 24hr SCS	7.24	211.23	212.98	212.47	213.06	0.002627	1.28	5.65	6.42	0.42
Lansdowne	Reach 1-Low	1147	Timmins	9.73	211.67	212.98	212.82	213.19	0.00876	2.04	4.8	7.58	0.77
Lansdowne	Reach 1-Low	1147	2yr 24hr SCS	0.69	211.67	212.24		212.25	0.002122	0.6	1.14	3.47	0.33
Lansdowne	Reach 1-Low	1147	5yr 24hr SCS	1.38	211.67	212.38	212.14	212.42	0.002777	0.82	1.69	3.91	0.4
Lansdowne	Reach 1-Low	1147	10yr 24hr SCS	2.15	211.67	212.48		212.54	0.003749	1.03	2.09	4.28	0.47
Lansdowne	Reach 1-Low	1147	25yr 24hr SCS	3.4	211.67	212.62		212.7	0.004506	1.23	2.76	4.9	0.53
Lansdowne	Reach 1-Low	1147	50yr 24hr SCS	4.51	211.67	212.7		212.81	0.005515	1.43	3.15	5.18	0.59
Lansdowne	Reach 1-Low	1147	100yr 24hr SCS	5.73	211.67	212.78	212.57	212.91	0.006558	1.62	3.54	5.52	0.65
Lansdowne	Reach 1-Low	1147	200yr 24hr SCS	7.24	211.67	212.86	212.67	213.03	0.007496	1.79	4.04	6.05	0.7
Lansdowne	Reach 1-Low	1118	Timmins	9.73	211.77	212.67	212.67	212.88	0.012403	2.1	5.38	14.77	0.9
Lansdowne	Reach 1-Low	1118	2yr 24hr SCS	0.69	211.77	212.02	212.02	212.1	0.022924	1.27	0.54	3.38	1.01
Lansdowne	Reach 1-Low	1118	5yr 24hr SCS	1.38	211.77	212.12	212.12	212.23	0.020634	1.5	0.92	4.11	1.01
Lansdowne	Reach 1-Low	1118	10yr 24hr SCS	2.15	211.77	212.34		212.4	0.005719	1.06	2.03	5.77	0.57
Lansdowne	Reach 1-Low	1118	25yr 24hr SCS	3.4	211.77	212.5		212.56	0.004557	1.09	3.32	10.54	0.53
Lansdowne	Reach 1-Low	1118	50yr 24hr SCS	4.51	211.77	212.55		212.63	0.005812	1.28	3.84	11.4	0.6
Lansdowne	Reach 1-Low	1118	100yr 24hr SCS	5.73	211.77	212.58		212.69	0.007717	1.52	4.17	12.2	0.7
Lansdowne	Reach 1-Low	1118	200yr 24hr SCS	7.24	211.77	212.6	212.57	212.76	0.010521	1.81	4.48	12.98	0.82
Lansdowne	Reach 1-Low	1094	Timmins	9.73	210.84	212.76		212.78	0.000383	0.63	24.39	43.85	0.18
Lansdowne	Reach 1-Low	1094	2yr 24hr SCS	0.69	210.84	211.67		211.68	0.000466	0.3	2.26	5.91	0.16
Lansdowne	Reach 1-Low	1094	5yr 24hr SCS	1.38	210.84	212		212	0.000291	0.31	4.47	9.94	0.13
Lansdowne	Reach 1-Low	1094	10yr 24hr SCS	2.15	210.84	212.37		212.37	0.000093	0.24	11.33	22.29	0.08
Lansdowne	Reach 1-Low	1094	25yr 24hr SCS	3.4	210.84	212.53		212.54	0.000116	0.3	15.61	32.21	0.09
Lansdowne	Reach 1-Low	1094	50yr 24hr SCS	4.51	210.84	212.59		212.6	0.000162	0.37	17.58	35.38	0.11
Lansdowne	Reach 1-Low	1094	100yr 24hr SCS	5.73	210.84	212.63		212.64	0.000217	0.44	19.22	38.16	0.13
Lansdowne	Reach 1-Low	1094	200yr 24hr SCS	7.24	210.84	212.68		212.69	0.000288	0.52	21.14	40.46	0.15

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Lansdowne	Reach 1-Low	1092	Timmins	9.73	210.84	212.76	212.07	212.77	0.000433	0.66	24.4	42.72	0.19
Lansdowne	Reach 1-Low	1092	2yr 24hr SCS	0.69	210.84	211.67	211.27	211.68	0.001	0.43	1.6	5.24	0.23
Lansdowne	Reach 1-Low	1092	5yr 24hr SCS	1.38	210.84	211.99	211.44	212	0.000451	0.43	3.31	9.24	0.17
Lansdowne	Reach 1-Low	1092	10yr 24hr SCS	2.15	210.84	212.36	211.56	212.37	0.00023	0.41	5.33	23.56	0.13
Lansdowne	Reach 1-Low	1092	25yr 24hr SCS	3.4	210.84	212.53	211.71	212.53	0.000245	0.47	10.5	35.53	0.14
Lansdowne	Reach 1-Low	1092	50yr 24hr SCS	4.51	210.84	212.59	211.79	212.6	0.00019	0.4	17.41	38.18	0.12
Lansdowne	Reach 1-Low	1092	100yr 24hr SCS	5.73	210.84	212.63	211.87	212.64	0.000251	0.47	19.15	40.19	0.14
Lansdowne	Reach 1-Low	1092	200yr 24hr SCS	7.24	210.84	212.68	211.95	212.69	0.000322	0.55	21.15	41.66	0.16
Lansdowne	Reach 1-Low	1090	Driveway 5	Culvert									
Lansdowne	Reach 1-Low	1082	Timmins	9.73	210.87	212.09	212.03	212.54	0.010801	2.97	3.28	19.96	0.92
Lansdowne	Reach 1-Low	1082	2yr 24hr SCS	0.69	210.87	211.21	211.16	211.28	0.010065	1.12	0.62	2.88	0.71
Lansdowne	Reach 1-Low	1082	5yr 24hr SCS	1.38	210.87	211.31	211.28	211.44	0.014821	1.6	0.86	3.46	0.89
Lansdowne	Reach 1-Low	1082	10yr 24hr SCS	2.15	210.87	211.51	211.41	211.62	0.008044	1.49	1.45	4.81	0.7
Lansdowne	Reach 1-Low	1082	25yr 24hr SCS	3.4	210.87	211.68	211.54	211.83	0.007	1.71	1.99	10.5	0.68
Lansdowne	Reach 1-Low	1082	50yr 24hr SCS	4.51	210.87	211.76	211.64	211.97	0.008151	2.01	2.25	12.62	0.75
Lansdowne	Reach 1-Low	1082	100yr 24hr SCS	5.73	210.87	211.74	211.74	212.09	0.014381	2.62	2.19	12.3	1
Lansdowne	Reach 1-Low	1082	200yr 24hr SCS	7.24	210.87	211.86	211.86	212.27	0.013651	2.83	2.56	13.95	1
Lansdowne	Reach 1-Low	1079	Timmins	9.73	210.86	212.29		212.34	0.001475	1.09	13.75	35.38	0.34
Lansdowne	Reach 1-Low	1079	2yr 24hr SCS	0.69	210.86	211.15	211.15	211.24	0.02013	1.32	0.52	2.74	0.96
Lansdowne	Reach 1-Low	1079	5yr 24hr SCS	1.38	210.86	211.29	211.26	211.4	0.014687	1.42	0.97	3.54	0.87
Lansdowne	Reach 1-Low	1079	10yr 24hr SCS	2.15	210.86	211.52		211.58	0.005782	1.13	1.91	4.88	0.58
Lansdowne	Reach 1-Low	1079	25yr 24hr SCS	3.4	210.86	211.71		211.77	0.004436	1.09	3.18	8.84	0.52
Lansdowne	Reach 1-Low	1079	50yr 24hr SCS	4.51	210.86	211.82		211.89	0.003544	1.13	4.37	12.4	0.48
Lansdowne	Reach 1-Low	1079	100yr 24hr SCS	5.73	210.86	211.82		211.92	0.005869	1.44	4.32	12.15	0.62
Lansdowne	Reach 1-Low	1079	200yr 24hr SCS	7.24	210.86	211.87	211.76	212	0.006951	1.66	4.94	13.69	0.68
Lansdowne	Reach 1-Low	1060	Timmins	9.73	210.71	212.3		212.31	0.000315	0.56	29.82	64.22	0.16
Lansdowne	Reach 1-Low	1060	2yr 24hr SCS	0.69	210.71	211.07		211.09	0.003383	0.63	1.1	4.62	0.41
Lansdowne	Reach 1-Low	1060	5yr 24hr SCS	1.38	210.71	211.27		211.29	0.002114	0.62	2.22	6.65	0.34
Lansdowne	Reach 1-Low	1060	10yr 24hr SCS	2.15	210.71	211.51		211.53	0.000944	0.52	4.14	8.87	0.24
Lansdowne	Reach 1-Low	1060	25yr 24hr SCS	3.4	210.71	211.71		211.73	0.000742	0.56	6.28	11.74	0.23
Lansdowne	Reach 1-Low	1060	50yr 24hr SCS	4.51	210.71	211.83		211.85	0.000726	0.62	7.99	23.16	0.23
Lansdowne	Reach 1-Low	1060	100yr 24hr SCS	5.73	210.71	211.83		211.86	0.001176	0.78	7.98	23.1	0.29
Lansdowne	Reach 1-Low	1060	200yr 24hr SCS	7.24	210.71	211.88		211.92	0.001441	0.91	9.28	27.1	0.33
Lansdowne	Reach 1-Low	1018	Timmins	9.73	210.61	212.3		212.3	0.000151	0.42	37.14	55.69	0.12
Lansdowne	Reach 1-Low	1018	2yr 24hr SCS	0.69	210.61	210.97		210.98	0.001951	0.48	1.43	5.97	0.32
Lansdowne	Reach 1-Low	1018	5yr 24hr SCS	1.38	210.61	211.22		211.23	0.000783	0.43	3.2	7.93	0.22
Lansdowne	Reach 1-Low	1018	10yr 24hr SCS	2.15	210.61	211.5		211.5	0.000378	0.36	6.06	13.27	0.16
Lansdowne	Reach 1-Low	1018	25yr 24hr SCS	3.4	210.61	211.7		211.71	0.000301	0.39	9.79	26.56	0.15
Lansdowne	Reach 1-Low	1018	50yr 24hr SCS	4.51	210.61	211.82		211.82	0.00029	0.43	13.42	37.51	0.15
Lansdowne	Reach 1-Low	1018	100yr 24hr SCS	5.73	210.61	211.81		211.82	0.000488	0.55	13.11	36.16	0.19
Lansdowne	Reach 1-Low	1018	200yr 24hr SCS	7.24	210.61	211.86		211.87	0.000616	0.64	15.01	43.05	0.22
Lansdowne	Reach 1-Low	971	Timmins	9.73	210.46	212.3		212.3	0.000059	0.27	59.18	76.16	0.07
Lansdowne	Reach 1-Low	971	2yr 24hr SCS	0.69	210.46	210.87		210.88	0.002315	0.49	1.41	6.53	0.34
Lansdowne	Reach 1-Low	971	5yr 24hr SCS	1.38	210.46	211.2		211.2	0.0004	0.32	4.32	10.06	0.16
Lansdowne	Reach 1-Low	971	10yr 24hr SCS	2.15	210.46	211.48		211.49	0.000202	0.27	8.52	29.03	0.12
Lansdowne	Reach 1-Low	971	25yr 24hr SCS	3.4	210.46	211.7		211.7	0.000127	0.27	18.47	57.58	0.1
Lansdowne	Reach 1-Low	971	50yr 24hr SCS	4.51	210.46	211.81		211.82	0.000109	0.27	25.3	60.12	0.09
Lansdowne	Reach 1-Low	971	100yr 24hr SCS	5.73	210.46	211.8		211.81	0.000188	0.36	24.62	59.76	0.12
Lansdowne	Reach 1-Low	971	200yr 24hr SCS	7.24	210.46	211.85		211.85	0.000233	0.41	27.46	61.85	0.14
Lansdowne	Reach 1-Low	961	Timmins	9.73	210.08	212.29		212.3	0.000041	0.25	69.62	86.02	0.06
Lansdowne	Reach 1-Low	961	2yr 24hr SCS	0.69	210.08	210.86		210.87	0.000391	0.26	2.61	7.97	0.15
Lansdowne	Reach 1-Low	961	5yr 24hr SCS	1.38	210.08	211.2		211.2	0.000152	0.23	6.08	11.59	0.1
Lansdowne	Reach 1-Low	961	10yr 24hr SCS	2.15	210.08	211.48		211.49	0.000085	0.22	11.42	36.03	0.08
Lansdowne	Reach 1-Low	961	25yr 24hr SCS	3.4	210.08	211.69		211.7	0.00007	0.23	22.83	67.96	0.07
Lansdowne	Reach 1-Low	961	50yr 24hr SCS	4.51	210.08	211.81		211.81	0.000066	0.25	31.14	73.26	0.07
Lansdowne	Reach 1-Low	961	100yr 24hr SCS	5.73	210.08	211.8		211.8	0.000113	0.32	30.29	72.49	0.1
Lansdowne	Reach 1-Low	961	200yr 24hr SCS	7.24	210.08	211.85		211.85	0.000143	0.37	33.74	75.04	0.11
Lansdowne	Reach 1-Low	958	Timmins	9.73	209.55	212.29	210.58	212.3	0.000031	0.26	78.13	89.85	0.05
Lansdowne	Reach 1-Low	958	2yr 24hr SCS	0.69	209.55	210.86	209.84	210.87	0.000025	0.12	5.7	7.99	0.04
Lansdowne	Reach 1-Low	958	5yr 24hr SCS	1.38	209.55	211.2	209.97	211.2	0.000031	0.17	9.1	12.28	0.05
Lansdowne	Reach 1-Low	958	10yr 24hr SCS	2.15	209.55	211.48	210.06	211.49	0.000033	0.2	12.6	53.02	0.05
Lansdowne	Reach 1-Low	958	25yr 24hr SCS	3.4	209.55	211.7	210.19	211.7	0.000033	0.22	29.81	67.62	0.05
Lansdowne	Reach 1-Low	958	50yr 24hr SCS	4.51	209.55	211.81	210.28	211.81	0.000036	0.24	38.28	75.23	0.06
Lansdowne	Reach 1-Low	958	100yr 24hr SCS	5.73	209.55	211.8	210.36	211.8	0.000061	0.31	37.41	74.76	0.07
Lansdowne	Reach 1-Low	958	200yr 24hr SCS	7.24	209.55	211.85	210.45	211.85	0.00008	0.36	40.93	76.31	0.09
Lansdowne	Reach 1-Low	946	Eglington Rd N	Culvert									
Lansdowne	Reach 1-Low	940	Timmins	9.73	209.54	212.29	210.71	212.29	0.000033	0.22	78.5	84.13	0.05
Lansdowne	Reach 1-Low	940	2yr 24hr SCS	0.69	209.54	210.85	209.81	210.85	0.000086	0.19	3.63	6.31	0.07
Lansdowne	Reach 1-Low	940	5yr 24hr SCS	1.38	209.54	211.13	209.92	211.14	0.000142	0.27	5.07	26.7	0.09
Lansdowne	Reach 1-Low	940	10yr 24hr SCS	2.15	209.54	211.32	210.03	211.33	0.000189	0.35	6.07	32.09	0.11
Lansdowne	Reach 1-Low	940	25yr 24hr SCS	3.4	209.54	211.42	210.16	211.43	0.000361	0.52	6.58	35.87	0.15
Lansdowne	Reach 1-Low	940	50yr 24hr SCS	4.51	209.54	211.71	210.28	211.71	0.000063	0.24	32.94	66.96	0.07
Lansdowne	Reach 1-Low	940	100yr 24hr SCS	5.73	209.54	211.46	210.39	211.5	0.000913	0.84	6.82	37.05	0.24
Lansdowne	Reach 1-Low	940	200yr 24hr SCS	7.24	209.54	211.51	210.52	211.56	0.001294	1.02	7.07	44.35	0.28

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Lansdowne	Reach 1-Low	937	Timmins	9.73	210.12	212.29		212.29	0.000041	0.22	73.36	87.14	0.06
Lansdowne	Reach 1-Low	937	2yr 24hr SCS	0.69	210.12	210.83		210.84	0.002269	0.53	1.3	4.75	0.32
Lansdowne	Reach 1-Low	937	5yr 24hr SCS	1.38	210.12	211.12		211.13	0.000859	0.46	3	6.88	0.22
Lansdowne	Reach 1-Low	937	10yr 24hr SCS	2.15	210.12	211.32		211.33	0.000632	0.4	7.23	36.57	0.19
Lansdowne	Reach 1-Low	937	25yr 24hr SCS	3.4	210.12	211.42		211.43	0.000617	0.45	11.17	44.61	0.2
Lansdowne	Reach 1-Low	937	50yr 24hr SCS	4.51	210.12	211.7		211.71	0.000128	0.27	26.7	67.41	0.1
Lansdowne	Reach 1-Low	937	100yr 24hr SCS	5.73	210.12	211.47		211.48	0.001162	0.66	13.45	48.67	0.27
Lansdowne	Reach 1-Low	937	200yr 24hr SCS	7.24	210.12	211.52		211.54	0.001212	0.71	16.13	51.81	0.28
Lansdowne	Reach 1-Low	918	Timmins	9.73	210.39	212.29		212.29	0.000027	0.17	89.86	111.71	0.05
Lansdowne	Reach 1-Low	918	2yr 24hr SCS	0.69	210.39	210.79		210.81	0.001755	0.5	1.37	4.93	0.3
Lansdowne	Reach 1-Low	918	5yr 24hr SCS	1.38	210.39	211.11		211.12	0.000968	0.38	3.67	16.08	0.23
Lansdowne	Reach 1-Low	918	10yr 24hr SCS	2.15	210.39	211.31		211.32	0.000311	0.29	9.78	44.53	0.14
Lansdowne	Reach 1-Low	918	25yr 24hr SCS	3.4	210.39	211.41		211.42	0.000326	0.34	14.64	55.05	0.15
Lansdowne	Reach 1-Low	918	50yr 24hr SCS	4.51	210.39	211.7		211.71	0.000078	0.21	31.36	67.33	0.08
Lansdowne	Reach 1-Low	918	100yr 24hr SCS	5.73	210.39	211.46		211.47	0.000634	0.49	17.06	55.38	0.21
Lansdowne	Reach 1-Low	918	200yr 24hr SCS	7.24	210.39	211.51		211.52	0.000669	0.53	20.01	55.99	0.21
Lansdowne	Reach 1-Low	915	Timmins	9.73	209.96	212.29	211.07	212.29	0.000029	0.17	90.49	115.21	0.05
Lansdowne	Reach 1-Low	915	2yr 24hr SCS	0.69	209.96	210.8	210.2	210.8	0.0003	0.26	2.64	4.52	0.11
Lansdowne	Reach 1-Low	915	5yr 24hr SCS	1.38	209.96	211.11	210.32	211.11	0.000371	0.31	4.42	11.13	0.13
Lansdowne	Reach 1-Low	915	10yr 24hr SCS	2.15	209.96	211.31	210.42	211.32	0.00027	0.27	9.9	40.25	0.12
Lansdowne	Reach 1-Low	915	25yr 24hr SCS	3.4	209.96	211.41	210.57	211.42	0.000307	0.32	14.88	55.81	0.13
Lansdowne	Reach 1-Low	915	50yr 24hr SCS	4.51	209.96	211.7	210.66	211.7	0.000077	0.21	31.89	71.95	0.07
Lansdowne	Reach 1-Low	915	100yr 24hr SCS	5.73	209.96	211.45	210.76	211.46	0.000616	0.47	17.28	56.04	0.19
Lansdowne	Reach 1-Low	915	200yr 24hr SCS	7.24	209.96	211.51	210.86	211.52	0.000663	0.51	20.24	56.36	0.19
Lansdowne	Reach 1-Low	906	Driveway 6	Culvert									
Lansdowne	Reach 1-Low	897	Timmins	9.73	209.9	212.29	210.77	212.29	0.00002	0.18	95.82	105.02	0.04
Lansdowne	Reach 1-Low	897	2yr 24hr SCS	0.69	209.9	210.63	210.11	210.63	0.000159	0.23	2.99	6.51	0.1
Lansdowne	Reach 1-Low	897	5yr 24hr SCS	1.38	209.9	210.76	210.2	210.77	0.000329	0.37	3.68	7.52	0.15
Lansdowne	Reach 1-Low	897	10yr 24hr SCS	2.15	209.9	210.87	210.29	210.89	0.000483	0.5	4.32	8.4	0.18
Lansdowne	Reach 1-Low	897	25yr 24hr SCS	3.4	209.9	211.22	210.4	211.23	0.000279	0.38	10.42	27.99	0.14
Lansdowne	Reach 1-Low	897	50yr 24hr SCS	4.51	209.9	211.7	210.49	211.7	0.000043	0.2	39.87	84.84	0.06
Lansdowne	Reach 1-Low	897	100yr 24hr SCS	5.73	209.9	211.11	210.56	211.16	0.001759	0.99	5.77	20.48	0.35
Lansdowne	Reach 1-Low	897	200yr 24hr SCS	7.24	209.9	211.22	210.64	211.25	0.001293	0.82	10.31	27.72	0.3
Lansdowne	Reach 1-Low	895	Timmins	9.73	210.22	212.29		212.29	0.000024	0.18	92.59	108.18	0.05
Lansdowne	Reach 1-Low	895	2yr 24hr SCS	0.69	210.22	210.52	210.52	210.61	0.022767	1.29	0.53	3.19	1.01
Lansdowne	Reach 1-Low	895	5yr 24hr SCS	1.38	210.22	210.63	210.63	210.73	0.021883	1.42	0.97	4.87	1.02
Lansdowne	Reach 1-Low	895	10yr 24hr SCS	2.15	210.22	210.82		210.87	0.006934	1.01	2.14	7.64	0.61
Lansdowne	Reach 1-Low	895	25yr 24hr SCS	3.4	210.22	211.22		211.23	0.000916	0.5	7.67	26.03	0.24
Lansdowne	Reach 1-Low	895	50yr 24hr SCS	4.51	210.22	211.7		211.7	0.000061	0.21	36.18	84.46	0.07
Lansdowne	Reach 1-Low	895	100yr 24hr SCS	5.73	210.22	210.93	210.93	211.11	0.017537	1.88	3.05	8.6	1.01
Lansdowne	Reach 1-Low	895	200yr 24hr SCS	7.24	210.22	211.02	211.02	211.2	0.016627	1.88	3.87	12.19	0.99
Lansdowne	Reach 1-Low	875	Timmins	9.73	209.82	212.29		212.29	0.000021	0.2	89.53	93.26	0.05
Lansdowne	Reach 1-Low	875	2yr 24hr SCS	0.69	209.82	210.52		210.52	0.000324	0.27	2.51	6.25	0.14
Lansdowne	Reach 1-Low	875	5yr 24hr SCS	1.38	209.82	210.64		210.65	0.000598	0.42	3.32	7.02	0.19
Lansdowne	Reach 1-Low	875	10yr 24hr SCS	2.15	209.82	210.82		210.83	0.000589	0.46	4.71	8.6	0.2
Lansdowne	Reach 1-Low	875	25yr 24hr SCS	3.4	209.82	211.21		211.22	0.000178	0.35	13.88	37.59	0.12
Lansdowne	Reach 1-Low	875	50yr 24hr SCS	4.51	209.82	211.7		211.7	0.000032	0.2	40.65	68.55	0.05
Lansdowne	Reach 1-Low	875	100yr 24hr SCS	5.73	209.82	210.87		210.93	0.003309	1.12	5.14	9.07	0.47
Lansdowne	Reach 1-Low	875	200yr 24hr SCS	7.24	209.82	210.96		211.03	0.003332	1.2	6.38	17.7	0.48
Lansdowne	Reach 1-Low	852	Timmins	9.73	210.05	212.29		212.29	0.00001	0.13	120.08	94.2	0.03
Lansdowne	Reach 1-Low	852	2yr 24hr SCS	0.69	210.05	210.51		210.51	0.000824	0.33	2.1	8.43	0.21
Lansdowne	Reach 1-Low	852	5yr 24hr SCS	1.38	210.05	210.62		210.63	0.001033	0.44	3.19	10.18	0.24
Lansdowne	Reach 1-Low	852	10yr 24hr SCS	2.15	210.05	210.81		210.82	0.000605	0.41	5.92	22.49	0.19
Lansdowne	Reach 1-Low	852	25yr 24hr SCS	3.4	210.05	211.21		211.21	0.000075	0.21	27.21	72.75	0.08
Lansdowne	Reach 1-Low	852	50yr 24hr SCS	4.51	210.05	211.7		211.7	0.000012	0.12	65.33	85.72	0.03
Lansdowne	Reach 1-Low	852	100yr 24hr SCS	5.73	210.05	210.68	210.62	210.8	0.01111	1.55	3.81	11.94	0.81
Lansdowne	Reach 1-Low	852	200yr 24hr SCS	7.24	210.05	210.89		210.95	0.003913	1.12	8.18	37.15	0.5
Lansdowne	Reach 1-Low	840	Timmins	9.73	209.96	212.29		212.29	0.000006	0.11	128.86	88.69	0.02
Lansdowne	Reach 1-Low	840	2yr 24hr SCS	0.69	209.96	210.51		210.51	0.000017	0.05	14.4	40	0.03
Lansdowne	Reach 1-Low	840	5yr 24hr SCS	1.38	209.96	210.63		210.63	0.000026	0.08	19.18	40.23	0.04
Lansdowne	Reach 1-Low	840	10yr 24hr SCS	2.15	209.96	210.81		210.81	0.000021	0.09	27.09	46.02	0.04
Lansdowne	Reach 1-Low	840	25yr 24hr SCS	3.4	209.96	211.21		211.21	0.000011	0.09	48.41	60.04	0.03
Lansdowne	Reach 1-Low	840	50yr 24hr SCS	4.51	209.96	211.7		211.7	0.000005	0.08	80.03	74.09	0.02
Lansdowne	Reach 1-Low	840	100yr 24hr SCS	5.73	209.96	210.75		210.76	0.000203	0.27	24.4	44.06	0.12
Lansdowne	Reach 1-Low	840	200yr 24hr SCS	7.24	209.96	210.92		210.92	0.00014	0.26	32.24	49.33	0.1
Lansdowne	Reach 1-Low	833	Timmins	9.73	209.2	212.29	209.87	212.29	0.00001	0.02	144.72	90.74	0
Lansdowne	Reach 1-Low	833	2yr 24hr SCS	0.69	209.2	210.51	209.32	210.51	0.000773	0.07	9.79	42.35	0.02
Lansdowne	Reach 1-Low	833	5yr 24hr SCS	1.38	209.2	210.63	209.39	210.63	0.001853	0.12	11.31	43.26	0.04
Lansdowne	Reach 1-Low	833	10yr 24hr SCS	2.15	209.2	210.81	209.45	210.81	0.002148	0.14	13.65	48.64	0.04
Lansdowne	Reach 1-Low	833	25yr 24hr SCS	3.4	209.2	211.21	209.54	211.21	0.00154	0.14	18.73	68.07	0.04
Lansdowne	Reach 1-Low	833	50yr 24hr SCS	4.51	209.2	211.68	209.61	211.69	0.000902	0.13	24.9	80.43	0.03
Lansdowne	Reach 1-Low	833	100yr 24hr SCS	5.73	209.2	210.73	209.68	210.75	0.020859	0.42	12.61	46.06	0.13
Lansdowne	Reach 1-Low	833	200yr 24hr SCS	7.24	209.2	210.88	209.75	210.91	0.018898	0.43	14.56	54.56	0.12

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Lansdowne	Reach 1-Low	811	Callander Bay Dr	Bridge									
Lansdowne	Reach 1-Low	793	Timmins	9.73	209.42	210.92	210.28	210.99	0.001744	1.17	9.18	39.3	0.34
Lansdowne	Reach 1-Low	793	2yr 24hr SCS	0.69	209.42	210.48	209.58	210.48	0.00004	0.14	5.16	10.88	0.05
Lansdowne	Reach 1-Low	793	5yr 24hr SCS	1.38	209.42	210.51	209.67	210.51	0.000143	0.27	5.44	11.63	0.09
Lansdowne	Reach 1-Low	793	10yr 24hr SCS	2.15	209.42	210.56	209.75	210.57	0.000296	0.4	5.84	16.63	0.14
Lansdowne	Reach 1-Low	793	25yr 24hr SCS	3.4	209.42	210.64	209.87	210.65	0.000585	0.57	6.55	21.62	0.19
Lansdowne	Reach 1-Low	793	50yr 24hr SCS	4.51	209.42	210.72	209.95	210.74	0.000757	0.68	7.29	29.19	0.22
Lansdowne	Reach 1-Low	793	100yr 24hr SCS	5.73	209.42	210.79	210.04	210.82	0.000953	0.79	7.92	31.38	0.25
Lansdowne	Reach 1-Low	793	200yr 24hr SCS	7.24	209.42	210.86	210.14	210.9	0.001185	0.93	8.59	33.76	0.28
Lansdowne	Reach 1-Low	791	Timmins	12.68	209.42	210.94		210.97	0.001605	0.95	22.05	48.75	0.31
Lansdowne	Reach 1-Low	791	2yr 24hr SCS	1.22	209.42	210.47		210.48	0.000317	0.27	5.59	17.7	0.12
Lansdowne	Reach 1-Low	791	5yr 24hr SCS	2.24	209.42	210.5		210.51	0.000862	0.46	6.16	21.26	0.21
Lansdowne	Reach 1-Low	791	10yr 24hr SCS	3.29	209.42	210.55		210.56	0.001314	0.6	7.19	24.46	0.26
Lansdowne	Reach 1-Low	791	25yr 24hr SCS	4.98	209.42	210.63		210.65	0.001659	0.74	9.59	32.98	0.3
Lansdowne	Reach 1-Low	791	50yr 24hr SCS	6.47	209.42	210.72		210.74	0.001486	0.77	12.69	36.61	0.29
Lansdowne	Reach 1-Low	791	100yr 24hr SCS	8.13	209.42	210.79		210.81	0.001465	0.81	15.38	40.31	0.29
Lansdowne	Reach 1-Low	791	200yr 24hr SCS	10.13	209.42	210.86		210.89	0.00152	0.88	18.63	44.79	0.3
Lansdowne	Reach 1-Low	756	Timmins	12.68	209.49	210.94		210.94	0.000203	0.44	57.05	100.54	0.13
Lansdowne	Reach 1-Low	756	2yr 24hr SCS	1.22	209.49	210.47		210.47	0.000041	0.14	17.26	72.45	0.05
Lansdowne	Reach 1-Low	756	5yr 24hr SCS	2.24	209.49	210.5		210.5	0.000106	0.23	19.28	73.46	0.09
Lansdowne	Reach 1-Low	756	10yr 24hr SCS	3.29	209.49	210.54		210.55	0.000153	0.29	22.63	75.9	0.11
Lansdowne	Reach 1-Low	756	25yr 24hr SCS	4.98	209.49	210.63		210.63	0.000185	0.34	29.15	81.8	0.12
Lansdowne	Reach 1-Low	756	50yr 24hr SCS	6.47	209.49	210.72		210.72	0.000165	0.35	36.66	83.68	0.11
Lansdowne	Reach 1-Low	756	100yr 24hr SCS	8.13	209.49	210.79		210.79	0.00017	0.37	42.72	87.43	0.12
Lansdowne	Reach 1-Low	756	200yr 24hr SCS	10.13	209.49	210.87		210.87	0.000181	0.4	49.79	95.56	0.12
Lansdowne	Reach 1-Low	728	Timmins	12.68	209.25	210.93		210.94	0.000228	0.42	50.86	95.05	0.13
Lansdowne	Reach 1-Low	728	2yr 24hr SCS	1.22	209.25	210.47		210.47	0.000032	0.1	17.91	46.28	0.04
Lansdowne	Reach 1-Low	728	5yr 24hr SCS	2.24	209.25	210.5		210.5	0.00009	0.18	19.15	48.18	0.08
Lansdowne	Reach 1-Low	728	10yr 24hr SCS	3.29	209.25	210.54		210.54	0.000143	0.24	21.29	50.72	0.1
Lansdowne	Reach 1-Low	728	25yr 24hr SCS	4.98	209.25	210.62		210.62	0.000197	0.3	25.73	62.44	0.12
Lansdowne	Reach 1-Low	728	50yr 24hr SCS	6.47	209.25	210.71		210.71	0.00019	0.32	31.91	73.02	0.12
Lansdowne	Reach 1-Low	728	100yr 24hr SCS	8.13	209.25	210.78		210.79	0.000203	0.35	37.29	81.53	0.12
Lansdowne	Reach 1-Low	728	200yr 24hr SCS	10.13	209.25	210.86		210.86	0.000209	0.38	44.02	90.88	0.13
Lansdowne	Reach 1-Low	726	Timmins	12.68	209.14	210.93	210.08	210.94	0.000126	0.39	56.98	94.4	0.11
Lansdowne	Reach 1-Low	726	2yr 24hr SCS	1.22	209.14	210.47	209.39	210.47	0.000009	0.08	22.95	50.52	0.03
Lansdowne	Reach 1-Low	726	5yr 24hr SCS	2.24	209.14	210.5	209.5	210.5	0.000028	0.14	24.28	51.4	0.05
Lansdowne	Reach 1-Low	726	10yr 24hr SCS	3.29	209.14	210.54	209.59	210.54	0.000048	0.2	26.56	54.64	0.06
Lansdowne	Reach 1-Low	726	25yr 24hr SCS	4.98	209.14	210.62	209.72	210.62	0.000076	0.26	31.29	63.44	0.08
Lansdowne	Reach 1-Low	726	50yr 24hr SCS	6.47	209.14	210.71	209.83	210.71	0.000085	0.29	37.34	73.37	0.08
Lansdowne	Reach 1-Low	726	100yr 24hr SCS	8.13	209.14	210.78	209.93	210.79	0.000099	0.32	43.05	89.33	0.09
Lansdowne	Reach 1-Low	726	200yr 24hr SCS	10.13	209.14	210.86	209.98	210.86	0.00011	0.35	50.15	92.98	0.1
Lansdowne	Reach 1-Low	724	Pedestrian 2	Culvert									
Lansdowne	Reach 1-Low	717	Timmins	12.68	208.97	210.93	210.28	210.94	0.000212	0.35	52.53	88.01	0.1
Lansdowne	Reach 1-Low	717	2yr 24hr SCS	1.22	208.97	210.47	209.35	210.47	0.000026	0.09	19.92	52.74	0.03
Lansdowne	Reach 1-Low	717	5yr 24hr SCS	2.24	208.97	210.5	209.51	210.5	0.000073	0.15	21.3	54.14	0.06
Lansdowne	Reach 1-Low	717	10yr 24hr SCS	3.29	208.97	210.54	209.64	210.54	0.000118	0.2	23.68	57.16	0.07
Lansdowne	Reach 1-Low	717	25yr 24hr SCS	4.98	208.97	210.62	209.82	210.62	0.000165	0.25	28.57	64.38	0.09
Lansdowne	Reach 1-Low	717	50yr 24hr SCS	6.47	208.97	210.7	210.1	210.71	0.000169	0.27	34.25	67.91	0.09
Lansdowne	Reach 1-Low	717	100yr 24hr SCS	8.13	208.97	210.78	210.14	210.79	0.000176	0.29	39.85	77.08	0.09
Lansdowne	Reach 1-Low	717	200yr 24hr SCS	10.13	208.97	210.85	210.25	210.85	0.0002	0.32	45.26	85.1	0.1
Lansdowne	Reach 1-Low	715	Timmins	12.68	209.17	210.93		210.94	0.000263	0.44	48.27	81.01	0.13
Lansdowne	Reach 1-Low	715	2yr 24hr SCS	1.22	209.17	210.47		210.47	0.00004	0.12	17.42	52.34	0.05
Lansdowne	Reach 1-Low	715	5yr 24hr SCS	2.24	209.17	210.49		210.5	0.000108	0.21	18.78	54.12	0.08
Lansdowne	Reach 1-Low	715	10yr 24hr SCS	3.29	209.17	210.54		210.54	0.000176	0.28	21.14	57.05	0.1
Lansdowne	Reach 1-Low	715	25yr 24hr SCS	4.98	209.17	210.62		210.62	0.000227	0.33	25.88	61.28	0.12
Lansdowne	Reach 1-Low	715	50yr 24hr SCS	6.47	209.17	210.7		210.71	0.000223	0.35	31.3	65.89	0.12
Lansdowne	Reach 1-Low	715	100yr 24hr SCS	8.13	209.17	210.78		210.78	0.000229	0.38	36.65	71.75	0.12
Lansdowne	Reach 1-Low	715	200yr 24hr SCS	10.13	209.17	210.85		210.85	0.000252	0.41	41.66	77.98	0.13
Lansdowne	Reach 1-Low	678	Timmins	12.68	209.65	210.9		210.92	0.000768	0.82	39.03	109.98	0.25
Lansdowne	Reach 1-Low	678	2yr 24hr SCS	1.22	209.65	210.46		210.47	0.000221	0.31	7.1	31.33	0.12
Lansdowne	Reach 1-Low	678	5yr 24hr SCS	2.24	209.65	210.47		210.49	0.000684	0.55	7.5	34.82	0.22
Lansdowne	Reach 1-Low	678	10yr 24hr SCS	3.29	209.65	210.5		210.52	0.001126	0.73	8.58	39.02	0.28
Lansdowne	Reach 1-Low	678	25yr 24hr SCS	4.98	209.65	210.58		210.6	0.001365	0.86	11.68	45.8	0.32
Lansdowne	Reach 1-Low	678	50yr 24hr SCS	6.47	209.65	210.67		210.68	0.001173	0.86	16.65	70.71	0.3
Lansdowne	Reach 1-Low	678	100yr 24hr SCS	8.13	209.65	210.75		210.76	0.000921	0.81	23.23	85.61	0.27
Lansdowne	Reach 1-Low	678	200yr 24hr SCS	10.13	209.65	210.81		210.83	0.000994	0.88	29.4	102.45	0.28

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Lansdowne	Reach 1-Low	658	Timmins	12.68	208.99	210.9		210.9	0.000369	0.48	49.9	103.71	0.15
Lansdowne	Reach 1-Low	658	2yr 24hr SCS	1.22	208.99	210.46		210.46	0.000085	0.18	12.17	52.67	0.07
Lansdowne	Reach 1-Low	658	5yr 24hr SCS	2.24	208.99	210.47		210.48	0.000263	0.32	12.75	56.12	0.12
Lansdowne	Reach 1-Low	658	10yr 24hr SCS	3.29	208.99	210.5		210.51	0.000442	0.42	14.36	59.88	0.15
Lansdowne	Reach 1-Low	658	25yr 24hr SCS	4.98	208.99	210.57		210.58	0.000552	0.48	19.59	81.15	0.17
Lansdowne	Reach 1-Low	658	50yr 24hr SCS	6.47	208.99	210.66		210.67	0.000427	0.44	27.46	88.41	0.16
Lansdowne	Reach 1-Low	658	100yr 24hr SCS	8.13	208.99	210.75		210.75	0.000358	0.43	35.01	91.61	0.14
Lansdowne	Reach 1-Low	658	200yr 24hr SCS	10.13	208.99	210.81		210.82	0.000367	0.46	41.06	96.47	0.15
Lansdowne	Reach 1-Low	636	Timmins	12.68	209.32	210.9		210.9	0.000108	0.36	70.67	104.71	0.1
Lansdowne	Reach 1-Low	636	2yr 24hr SCS	1.22	209.32	210.46		210.46	0.00001	0.08	28.34	80.12	0.03
Lansdowne	Reach 1-Low	636	5yr 24hr SCS	2.24	209.32	210.47		210.47	0.000031	0.15	29.24	82.96	0.05
Lansdowne	Reach 1-Low	636	10yr 24hr SCS	3.29	209.32	210.5		210.5	0.000061	0.21	31.63	87.73	0.07
Lansdowne	Reach 1-Low	636	25yr 24hr SCS	4.98	209.32	210.57		210.57	0.000092	0.27	38.08	92.73	0.09
Lansdowne	Reach 1-Low	636	50yr 24hr SCS	6.47	209.32	210.66		210.66	0.000091	0.29	46.82	97.91	0.09
Lansdowne	Reach 1-Low	636	100yr 24hr SCS	8.13	209.32	210.75		210.75	0.00009	0.3	55.08	100.01	0.09
Lansdowne	Reach 1-Low	636	200yr 24hr SCS	10.13	209.32	210.81		210.81	0.000102	0.33	61.56	103.3	0.09
Lansdowne	Reach 1-Low	612	Timmins	12.68	209.01	210.89		210.9	0.000215	0.48	45.18	57.74	0.13
Lansdowne	Reach 1-Low	612	2yr 24hr SCS	1.22	209.01	210.46		210.46	0.000013	0.09	22.93	43.93	0.03
Lansdowne	Reach 1-Low	612	5yr 24hr SCS	2.24	209.01	210.47		210.47	0.000041	0.16	23.38	44.13	0.05
Lansdowne	Reach 1-Low	612	10yr 24hr SCS	3.29	209.01	210.5		210.5	0.000078	0.23	24.6	45.7	0.08
Lansdowne	Reach 1-Low	612	25yr 24hr SCS	4.98	209.01	210.57		210.57	0.000131	0.31	27.95	49.31	0.1
Lansdowne	Reach 1-Low	612	50yr 24hr SCS	6.47	209.01	210.66		210.66	0.000148	0.35	32.57	52.82	0.11
Lansdowne	Reach 1-Low	612	100yr 24hr SCS	8.13	209.01	210.74		210.75	0.00016	0.38	36.99	53.64	0.11
Lansdowne	Reach 1-Low	612	200yr 24hr SCS	10.13	209.01	210.81		210.81	0.000191	0.43	40.38	54.33	0.12
Lansdowne	Reach 1-Low	611	Timmins	12.68	208.35	210.89	209.78	210.9	0.000158	0.47	48.79	58.09	0.11
Lansdowne	Reach 1-Low	611	2yr 24hr SCS	1.22	208.35	210.46	208.7	210.46	0.000006	0.08	26.46	43.73	0.02
Lansdowne	Reach 1-Low	611	5yr 24hr SCS	2.24	208.35	210.47	208.84	210.47	0.000021	0.15	26.91	44.05	0.04
Lansdowne	Reach 1-Low	611	10yr 24hr SCS	3.29	208.35	210.5	208.96	210.5	0.000041	0.21	28.11	44.87	0.05
Lansdowne	Reach 1-Low	611	25yr 24hr SCS	4.98	208.35	210.57	209.12	210.57	0.000074	0.29	31.39	49.06	0.07
Lansdowne	Reach 1-Low	611	50yr 24hr SCS	6.47	208.35	210.66	209.25	210.66	0.000091	0.33	36	52.84	0.08
Lansdowne	Reach 1-Low	611	100yr 24hr SCS	8.13	208.35	210.74	209.39	210.75	0.000106	0.37	40.45	54.36	0.09
Lansdowne	Reach 1-Low	611	200yr 24hr SCS	10.13	208.35	210.8	209.68	210.81	0.000132	0.42	43.9	55.63	0.1
Lansdowne	Reach 1-Low	602	Yard Crossing 1	Culvert									
Lansdowne	Reach 1-Low	593	Timmins	12.68	208.4	210.89	209.76	210.89	0.000143	0.48	51.14	65.67	0.11
Lansdowne	Reach 1-Low	593	2yr 24hr SCS	1.22	208.4	210.46	208.83	210.46	0.000006	0.08	24.76	50.77	0.02
Lansdowne	Reach 1-Low	593	5yr 24hr SCS	2.24	208.4	210.47	209	210.47	0.000019	0.15	25.25	53.34	0.04
Lansdowne	Reach 1-Low	593	10yr 24hr SCS	3.29	208.4	210.5	209.14	210.5	0.000043	0.23	26.69	57.5	0.06
Lansdowne	Reach 1-Low	593	25yr 24hr SCS	4.98	208.4	210.57	209.35	210.57	0.000079	0.32	30.77	60.59	0.08
Lansdowne	Reach 1-Low	593	50yr 24hr SCS	6.47	208.4	210.66	209.49	210.66	0.000089	0.35	36.37	61.83	0.09
Lansdowne	Reach 1-Low	593	100yr 24hr SCS	8.13	208.4	210.74	209.57	210.74	0.000101	0.39	41.5	62.96	0.09
Lansdowne	Reach 1-Low	593	200yr 24hr SCS	10.13	208.4	210.8	209.67	210.81	0.000126	0.44	45.44	64.83	0.1
Lansdowne	Reach 1-Low	591	Timmins	12.68	208.42	210.89		210.89	0.000138	0.48	53.76	64.28	0.11
Lansdowne	Reach 1-Low	591	2yr 24hr SCS	1.22	208.42	210.46		210.46	0.000006	0.08	27.6	54.9	0.02
Lansdowne	Reach 1-Low	591	5yr 24hr SCS	2.24	208.42	210.47		210.47	0.00002	0.15	28.13	56.47	0.04
Lansdowne	Reach 1-Low	591	10yr 24hr SCS	3.29	208.42	210.5		210.5	0.000038	0.21	29.63	57.87	0.06
Lansdowne	Reach 1-Low	591	25yr 24hr SCS	4.98	208.42	210.57		210.57	0.000065	0.29	33.71	60.59	0.07
Lansdowne	Reach 1-Low	591	50yr 24hr SCS	6.47	208.42	210.66		210.66	0.000087	0.35	39.28	61.52	0.09
Lansdowne	Reach 1-Low	591	100yr 24hr SCS	8.13	208.42	210.74		210.74	0.000097	0.38	44.37	61.94	0.09
Lansdowne	Reach 1-Low	591	200yr 24hr SCS	10.13	208.42	210.8		210.81	0.000119	0.43	48.23	62.59	0.1
Lansdowne	Reach 1-Low	570	Timmins	12.68	208.78	210.85		210.88	0.000749	0.98	22.7	45.29	0.25
Lansdowne	Reach 1-Low	570	2yr 24hr SCS	1.22	208.78	210.46		210.46	0.000025	0.15	10.98	19.16	0.04
Lansdowne	Reach 1-Low	570	5yr 24hr SCS	2.24	208.78	210.47		210.47	0.000082	0.27	11.11	19.34	0.08
Lansdowne	Reach 1-Low	570	10yr 24hr SCS	3.29	208.78	210.49		210.5	0.000164	0.38	11.55	19.91	0.11
Lansdowne	Reach 1-Low	570	25yr 24hr SCS	4.98	208.78	210.55		210.56	0.000302	0.54	12.84	21.64	0.15
Lansdowne	Reach 1-Low	570	50yr 24hr SCS	6.47	208.78	210.64		210.65	0.000383	0.63	14.89	28.07	0.17
Lansdowne	Reach 1-Low	570	100yr 24hr SCS	8.13	208.78	210.72		210.74	0.000469	0.73	17.4	35.02	0.19
Lansdowne	Reach 1-Low	570	200yr 24hr SCS	10.13	208.78	210.77		210.8	0.000612	0.85	19.38	37.63	0.22
Lansdowne	Reach 1-Low	568	Timmins	12.68	208.18	210.85	209.83	210.88	0.000798	0.98	22.8	45.44	0.2
Lansdowne	Reach 1-Low	568	2yr 24hr SCS	1.22	208.18	210.46	208.55	210.46	0.000019	0.13	12.31	17.92	0.03
Lansdowne	Reach 1-Low	568	5yr 24hr SCS	2.24	208.18	210.47	208.73	210.47	0.000062	0.24	12.44	18.05	0.05
Lansdowne	Reach 1-Low	568	10yr 24hr SCS	3.29	208.18	210.49	208.89	210.49	0.000125	0.35	12.85	18.44	0.08
Lansdowne	Reach 1-Low	568	25yr 24hr SCS	4.98	208.18	210.55	209.1	210.56	0.000242	0.49	14.05	20.24	0.11
Lansdowne	Reach 1-Low	568	50yr 24hr SCS	6.47	208.18	210.64	209.26	210.65	0.000327	0.59	15.88	22.44	0.13
Lansdowne	Reach 1-Low	568	100yr 24hr SCS	8.13	208.18	210.72	209.43	210.73	0.000438	0.7	17.96	32.12	0.15
Lansdowne	Reach 1-Low	568	200yr 24hr SCS	10.13	208.18	210.77	209.61	210.79	0.00058	0.82	19.78	35.33	0.17
Lansdowne	Reach 1-Low	566	Pedstrian 5	Culvert									
Lansdowne	Reach 1-Low	561	Timmins	12.68	208.2	210.75	210.25	210.78	0.001198	1.03	19.79	32.59	0.27
Lansdowne	Reach 1-Low	561	2yr 24hr SCS	1.22	208.2	210.46	208.67	210.46	0.000036	0.16	11.53	26.13	0.05
Lansdowne	Reach 1-Low	561	5yr 24hr SCS	2.24	208.2	210.46	208.88	210.46	0.000122	0.29	11.5	26.08	0.08
Lansdowne	Reach 1-Low	561	10yr 24hr SCS	3.29	208.2	210.45	209.06	210.46	0.000266	0.42	11.45	25.99	0.12
Lansdowne	Reach 1-Low	561	25yr 24hr SCS	4.98	208.2	210.41	209.31	210.43	0.000768	0.69	10.19	25.08	0.21
Lansdowne	Reach 1-Low	561	50yr 24hr SCS	6.47	208.2	210.51	209.51	210.53	0.000806	0.75	12.84	26.65	0.21
Lansdowne	Reach 1-Low	561	100yr 24hr SCS	8.13	208.2	210.61	209.71	210.64	0.000792	0.79	15.75	27.64	0.22
Lansdowne	Reach 1-Low	561	200yr 24hr SCS	10.13	208.2	210.66	209.9	210.69	0.001067	0.93	16.93	29.39	0.25

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Lansdowne	Reach 1-Low	559	Timmins	12.68	208.51	210.75		210.78	0.000703	1.07	23.17	39.04	0.24
Lansdowne	Reach 1-Low	559	2yr 24hr SCS	1.22	208.51	210.46		210.46	0.000018	0.15	14.22	26.67	0.04
Lansdowne	Reach 1-Low	559	5yr 24hr SCS	2.24	208.51	210.46		210.46	0.000061	0.28	14.19	26.65	0.07
Lansdowne	Reach 1-Low	559	10yr 24hr SCS	3.29	208.51	210.45		210.46	0.000132	0.42	14.14	26.62	0.1
Lansdowne	Reach 1-Low	559	25yr 24hr SCS	4.98	208.51	210.41		210.42	0.000368	0.68	12.85	25.86	0.17
Lansdowne	Reach 1-Low	559	50yr 24hr SCS	6.47	208.51	210.51		210.53	0.000421	0.76	15.56	27.74	0.19
Lansdowne	Reach 1-Low	559	100yr 24hr SCS	8.13	208.51	210.61		210.64	0.00045	0.82	18.61	29.82	0.19
Lansdowne	Reach 1-Low	559	200yr 24hr SCS	10.13	208.51	210.66		210.69	0.000607	0.96	19.91	32.62	0.23
Lansdowne	Reach 1-Low	534	Timmins	12.68	208.18	210.76		210.77	0.000118	0.39	49.58	67.16	0.09
Lansdowne	Reach 1-Low	534	2yr 24hr SCS	1.22	208.18	210.46		210.46	0.000002	0.05	33.32	42.95	0.01
Lansdowne	Reach 1-Low	534	5yr 24hr SCS	2.24	208.18	210.46		210.46	0.000008	0.09	33.31	42.94	0.02
Lansdowne	Reach 1-Low	534	10yr 24hr SCS	3.29	208.18	210.46		210.46	0.000018	0.13	33.3	42.94	0.04
Lansdowne	Reach 1-Low	534	25yr 24hr SCS	4.98	208.18	210.41		210.42	0.000047	0.21	31.44	42.48	0.06
Lansdowne	Reach 1-Low	534	50yr 24hr SCS	6.47	208.18	210.52		210.52	0.000057	0.25	35.86	43.52	0.06
Lansdowne	Reach 1-Low	534	100yr 24hr SCS	8.13	208.18	210.62		210.63	0.000066	0.28	40.93	53.35	0.07
Lansdowne	Reach 1-Low	534	200yr 24hr SCS	10.13	208.18	210.67		210.67	0.00009	0.33	43.44	58.29	0.08
Lansdowne	Reach 1-Low	530	Timmins	12.68	208.43	210.76	209.47	210.77	0.000082	0.38	60.38	69.86	0.09
Lansdowne	Reach 1-Low	530	2yr 24hr SCS	1.22	208.43	210.46	208.71	210.46	0.000002	0.05	40.53	56.03	0.01
Lansdowne	Reach 1-Low	530	5yr 24hr SCS	2.24	208.43	210.46	208.81	210.46	0.000006	0.09	40.52	56.02	0.02
Lansdowne	Reach 1-Low	530	10yr 24hr SCS	3.29	208.43	210.46	208.91	210.46	0.000014	0.14	40.5	56	0.03
Lansdowne	Reach 1-Low	530	25yr 24hr SCS	4.98	208.43	210.41	209.03	210.42	0.000036	0.22	38.12	53.77	0.06
Lansdowne	Reach 1-Low	530	50yr 24hr SCS	6.47	208.43	210.52	209.13	210.52	0.000045	0.25	43.96	61.03	0.06
Lansdowne	Reach 1-Low	530	100yr 24hr SCS	8.13	208.43	210.62	209.23	210.63	0.00005	0.28	50.84	66.73	0.07
Lansdowne	Reach 1-Low	530	200yr 24hr SCS	10.13	208.43	210.67	209.34	210.67	0.000069	0.33	53.91	68.14	0.08
Lansdowne	Reach 1-Low	528 Toronto St		Culvert									
Lansdowne	Reach 1-Low	513	Timmins	12.68	208.28	210.75	209.43	210.77	0.000301	0.64	26.46	47.5	0.16
Lansdowne	Reach 1-Low	513	2yr 24hr SCS	1.22	208.28	209.18	208.66	209.19	0.00042	0.37	3.34	6.37	0.16
Lansdowne	Reach 1-Low	513	5yr 24hr SCS	2.24	208.28	209.6	208.79	209.61	0.000217	0.35	6.52	8.88	0.12
Lansdowne	Reach 1-Low	513	10yr 24hr SCS	3.29	208.28	210.1	208.89	210.11	0.000088	0.31	11.15	11.64	0.09
Lansdowne	Reach 1-Low	513	25yr 24hr SCS	4.98	208.28	210.4	209.03	210.41	0.000098	0.37	14.1	16.51	0.09
Lansdowne	Reach 1-Low	513	50yr 24hr SCS	6.47	208.28	210.51	209.12	210.52	0.000133	0.45	16.07	23.87	0.11
Lansdowne	Reach 1-Low	513	100yr 24hr SCS	8.13	208.28	210.61	209.22	210.62	0.000169	0.53	18.03	38.68	0.13
Lansdowne	Reach 1-Low	513	200yr 24hr SCS	10.13	208.28	210.65	209.32	210.67	0.000241	0.64	18.93	42.3	0.15
Lansdowne	Reach 1-Low	511	Timmins	12.68	208.3	210.75		210.76	0.000299	0.72	27.34	30.25	0.17
Lansdowne	Reach 1-Low	511	2yr 24hr SCS	1.22	208.3	209.17		209.19	0.001059	0.56	2.2	4.3	0.25
Lansdowne	Reach 1-Low	511	5yr 24hr SCS	2.24	208.3	209.59		209.61	0.000486	0.5	4.87	11.24	0.18
Lansdowne	Reach 1-Low	511	10yr 24hr SCS	3.29	208.3	210.1		210.11	0.000125	0.36	12.9	18.46	0.1
Lansdowne	Reach 1-Low	511	25yr 24hr SCS	4.98	208.3	210.4		210.41	0.000115	0.39	18.86	22.03	0.1
Lansdowne	Reach 1-Low	511	50yr 24hr SCS	6.47	208.3	210.51		210.52	0.000143	0.46	21.18	22.44	0.11
Lansdowne	Reach 1-Low	511	100yr 24hr SCS	8.13	208.3	210.61		210.62	0.000172	0.52	23.55	24.65	0.12
Lansdowne	Reach 1-Low	511	200yr 24hr SCS	10.13	208.3	210.65		210.67	0.00024	0.62	24.66	27.75	0.15
Lansdowne	Reach 1-Low	491	Timmins	12.68	207.86	210.73		210.76	0.000375	0.76	20.43	20.11	0.18
Lansdowne	Reach 1-Low	491	2yr 24hr SCS	1.22	207.86	209.16		209.17	0.000772	0.46	2.67	5.34	0.21
Lansdowne	Reach 1-Low	491	5yr 24hr SCS	2.24	207.86	209.59		209.6	0.000348	0.41	5.53	7.98	0.15
Lansdowne	Reach 1-Low	491	10yr 24hr SCS	3.29	207.86	210.1		210.11	0.000126	0.33	10.63	11.94	0.1
Lansdowne	Reach 1-Low	491	25yr 24hr SCS	4.98	207.86	210.4		210.41	0.000125	0.38	14.7	15.19	0.1
Lansdowne	Reach 1-Low	491	50yr 24hr SCS	6.47	207.86	210.5		210.51	0.000164	0.46	16.32	16.4	0.12
Lansdowne	Reach 1-Low	491	100yr 24hr SCS	8.13	207.86	210.6		210.62	0.000204	0.53	18.05	17.73	0.13
Lansdowne	Reach 1-Low	491	200yr 24hr SCS	10.13	207.86	210.64		210.66	0.00029	0.65	18.73	18.22	0.16
Lansdowne	Reach 1-Low	488	Timmins	12.68	208.02	210.72	209.55	210.75	0.000697	0.84	17.35	23.82	0.21
Lansdowne	Reach 1-Low	488	2yr 24hr SCS	1.22	208.02	209.15	208.44	209.17	0.000424	0.47	2.61	3.66	0.16
Lansdowne	Reach 1-Low	488	5yr 24hr SCS	2.24	208.02	209.58	208.61	209.59	0.000456	0.56	3.98	5.88	0.17
Lansdowne	Reach 1-Low	488	10yr 24hr SCS	3.29	208.02	210.09	208.73	210.1	0.000278	0.57	5.81	9.23	0.14
Lansdowne	Reach 1-Low	488	25yr 24hr SCS	4.98	208.02	210.4	208.91	210.41	0.000248	0.43	11.8	11.37	0.12
Lansdowne	Reach 1-Low	488	50yr 24hr SCS	6.47	208.02	210.5	209.04	210.51	0.00032	0.52	13.13	14.52	0.14
Lansdowne	Reach 1-Low	488	100yr 24hr SCS	8.13	208.02	210.6	209.18	210.61	0.000392	0.6	14.74	19.37	0.16
Lansdowne	Reach 1-Low	488	200yr 24hr SCS	10.13	208.02	210.63	209.36	210.66	0.000556	0.72	15.44	20.75	0.19
Lansdowne	Reach 1-Low	478 King St.		Culvert									
Lansdowne	Reach 1-Low	465	Timmins	12.68	207.7	209.06	209.06	209.55	0.013931	3.11	4.08	9.74	1
Lansdowne	Reach 1-Low	465	2yr 24hr SCS	1.22	207.7	208.16	208.16	208.32	0.020942	1.77	0.69	2.16	1
Lansdowne	Reach 1-Low	465	5yr 24hr SCS	2.24	207.7	208.37	208.37	208.53	0.01979	1.79	1.25	5.86	1
Lansdowne	Reach 1-Low	465	10yr 24hr SCS	3.29	207.7	208.47	208.47	208.68	0.018298	2	1.64	6.35	0.99
Lansdowne	Reach 1-Low	465	25yr 24hr SCS	4.98	207.7	208.61	208.61	208.87	0.016912	2.27	2.2	7.13	1
Lansdowne	Reach 1-Low	465	50yr 24hr SCS	6.47	207.7	208.71	208.71	209.02	0.016111	2.48	2.61	7.53	1
Lansdowne	Reach 1-Low	465	100yr 24hr SCS	8.13	207.7	208.81	208.81	209.17	0.015217	2.67	3.04	7.97	1
Lansdowne	Reach 1-Low	465	200yr 24hr SCS	10.13	207.7	208.94	208.92	209.35	0.013941	2.84	3.56	8.7	0.98
Lansdowne	Reach 1-Low	463	Timmins	12.68	207.68	209.15		209.2	0.002016	1.17	12.86	15.74	0.35
Lansdowne	Reach 1-Low	463	2yr 24hr SCS	1.22	207.68	208.07	208.07	208.19	0.033508	1.54	0.79	3.33	1.01
Lansdowne	Reach 1-Low	463	5yr 24hr SCS	2.24	207.68	208.22	208.22	208.35	0.028852	1.6	1.4	5.46	1.01
Lansdowne	Reach 1-Low	463	10yr 24hr SCS	3.29	207.68	208.31	208.31	208.46	0.024735	1.71	1.93	6.62	0.98
Lansdowne	Reach 1-Low	463	25yr 24hr SCS	4.98	207.68	208.44	208.44	208.59	0.016945	1.77	3.05	11.08	0.86
Lansdowne	Reach 1-Low	463	50yr 24hr SCS	6.47	207.68	208.5	208.5	208.67	0.015931	1.9	3.83	11.95	0.86
Lansdowne	Reach 1-Low	463	100yr 24hr SCS	8.13	207.68	208.73		208.82	0.005442	1.42	6.68	13.55	0.53
Lansdowne	Reach 1-Low	463	200yr 24hr SCS	10.13	207.68	209.11		209.15	0.001458	0.98	12.31	15.57	0.3

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Lansdowne	Reach 1-Low	448	Timmins	12.68	207.4	209.18		209.19	0.000044	0.23	80.59	69.78	0.06
Lansdowne	Reach 1-Low	448	2yr 24hr SCS	1.22	207.4	207.89		207.91	0.003598	0.65	2.45	17.23	0.43
Lansdowne	Reach 1-Low	448	5yr 24hr SCS	2.24	207.4	208.04		208.05	0.001808	0.52	6.2	36.15	0.31
Lansdowne	Reach 1-Low	448	10yr 24hr SCS	3.29	207.4	208.16		208.17	0.000862	0.43	11.62	53.67	0.23
Lansdowne	Reach 1-Low	448	25yr 24hr SCS	4.98	207.4	208.34		208.35	0.00036	0.36	22.84	67.68	0.16
Lansdowne	Reach 1-Low	448	50yr 24hr SCS	6.47	207.4	208.51		208.51	0.000181	0.31	33.84	68.04	0.12
Lansdowne	Reach 1-Low	448	100yr 24hr SCS	8.13	207.4	208.78		208.79	0.00007	0.24	52.84	68.67	0.08
Lansdowne	Reach 1-Low	448	200yr 24hr SCS	10.13	207.4	209.14		209.14	0.000032	0.2	77.38	69.65	0.05
Lansdowne	Reach 1-Low	430	Timmins	12.68	207.26	209.05		209.17	0.002954	1.54	8.27	7.82	0.47
Lansdowne	Reach 1-Low	430	2yr 24hr SCS	1.22	207.26	207.64	207.64	207.77	0.020631	1.6	0.76	2.96	1.01
Lansdowne	Reach 1-Low	430	5yr 24hr SCS	2.24	207.26	207.78	207.78	207.96	0.01895	1.87	1.2	3.43	1.01
Lansdowne	Reach 1-Low	430	10yr 24hr SCS	3.29	207.26	207.89	207.89	208.11	0.017997	2.05	1.6	3.79	1.01
Lansdowne	Reach 1-Low	430	25yr 24hr SCS	4.98	207.26	208.04	208.04	208.3	0.017125	2.27	2.2	4.27	1.01
Lansdowne	Reach 1-Low	430	50yr 24hr SCS	6.47	207.26	208.29		208.48	0.008815	1.91	3.38	5.07	0.75
Lansdowne	Reach 1-Low	430	100yr 24hr SCS	8.13	207.26	208.66		208.77	0.003909	1.49	5.46	6.45	0.52
Lansdowne	Reach 1-Low	430	200yr 24hr SCS	10.13	207.26	209.05		209.13	0.001872	1.23	8.29	7.83	0.37
Lansdowne	Reach 1-Low	417	Timmins	12.68	206.66	209.08		209.12	0.001382	1	16.87	38.98	0.29
Lansdowne	Reach 1-Low	417	2yr 24hr SCS	1.22	206.66	207.27		207.36	0.012084	1.36	0.89	2.48	0.73
Lansdowne	Reach 1-Low	417	5yr 24hr SCS	2.24	206.66	207.52		207.62	0.008848	1.39	1.61	3.2	0.62
Lansdowne	Reach 1-Low	417	10yr 24hr SCS	3.29	206.66	207.73		207.83	0.007413	1.42	2.32	3.78	0.58
Lansdowne	Reach 1-Low	417	25yr 24hr SCS	4.98	206.66	208.03		208.13	0.00547	1.38	3.61	4.68	0.5
Lansdowne	Reach 1-Low	417	50yr 24hr SCS	6.47	206.66	208.28		208.37	0.004296	1.32	4.89	5.62	0.45
Lansdowne	Reach 1-Low	417	100yr 24hr SCS	8.13	206.66	208.65		208.71	0.003031	1.12	7.32	10.47	0.4
Lansdowne	Reach 1-Low	417	200yr 24hr SCS	10.13	206.66	209.07		209.1	0.00091	0.81	16.57	37.68	0.23
Lansdowne	Reach 1-Low	409	Timmins	12.68	206.61	209.07		209.11	0.000755	1.02	21.69	44.16	0.24
Lansdowne	Reach 1-Low	409	2yr 24hr SCS	1.22	206.61	207.18		207.27	0.010779	1.36	0.9	2.48	0.72
Lansdowne	Reach 1-Low	409	5yr 24hr SCS	2.24	206.61	207.48		207.56	0.005762	1.28	1.75	3.24	0.56
Lansdowne	Reach 1-Low	409	10yr 24hr SCS	3.29	206.61	207.69		207.78	0.004751	1.32	2.49	3.77	0.52
Lansdowne	Reach 1-Low	409	25yr 24hr SCS	4.98	206.61	208		208.09	0.003493	1.31	3.81	4.59	0.46
Lansdowne	Reach 1-Low	409	50yr 24hr SCS	6.47	206.61	208.26		208.34	0.002629	1.27	5.1	5.54	0.41
Lansdowne	Reach 1-Low	409	100yr 24hr SCS	8.13	206.61	208.63		208.69	0.001403	1.15	7.46	9.6	0.32
Lansdowne	Reach 1-Low	409	200yr 24hr SCS	10.13	206.61	209.07		209.09	0.000494	0.82	21.42	44.06	0.2
Lansdowne	Reach 1-Low	405	Timmins	12.68	206.71	209.08	208	209.1	0.00056	0.83	24.13	44.27	0.21
Lansdowne	Reach 1-Low	405	2yr 24hr SCS	1.22	206.71	207.15	207.07	207.23	0.009807	1.28	0.95	2.78	0.7
Lansdowne	Reach 1-Low	405	5yr 24hr SCS	2.24	206.71	207.47	207.21	207.53	0.004611	1.15	1.94	3.61	0.5
Lansdowne	Reach 1-Low	405	10yr 24hr SCS	3.29	206.71	207.68	207.34	207.75	0.003724	1.16	2.83	4.45	0.46
Lansdowne	Reach 1-Low	405	25yr 24hr SCS	4.98	206.71	208	207.53	208.07	0.002464	1.12	4.43	5.49	0.39
Lansdowne	Reach 1-Low	405	50yr 24hr SCS	6.47	206.71	208.26	207.64	208.32	0.0018	1.11	5.84	6.28	0.35
Lansdowne	Reach 1-Low	405	100yr 24hr SCS	8.13	206.71	208.63	207.75	208.68	0.001055	1.02	7.98	14.9	0.28
Lansdowne	Reach 1-Low	405	200yr 24hr SCS	10.13	206.71	209.07	207.88	209.09	0.000366	0.67	23.79	43.6	0.17
Lansdowne	Reach 1-Low	396	Lansdowne St	Bridge									
Lansdowne	Reach 1-Low	385	Timmins	12.68	206.4	207.57	207.57	207.96	0.015092	2.76	4.6	5.91	1
Lansdowne	Reach 1-Low	385	2yr 24hr SCS	1.22	206.4	206.76	206.76	206.89	0.020763	1.6	0.76	2.97	1.01
Lansdowne	Reach 1-Low	385	5yr 24hr SCS	2.24	206.4	206.91	206.91	207.07	0.018892	1.8	1.25	3.77	1
Lansdowne	Reach 1-Low	385	10yr 24hr SCS	3.29	206.4	207.02	207.02	207.21	0.018036	1.92	1.72	4.58	1
Lansdowne	Reach 1-Low	385	25yr 24hr SCS	4.98	206.4	207.15	207.15	207.38	0.01684	2.13	2.34	5	0.99
Lansdowne	Reach 1-Low	385	50yr 24hr SCS	6.47	206.4	207.24	207.24	207.51	0.016429	2.3	2.81	5.18	1
Lansdowne	Reach 1-Low	385	100yr 24hr SCS	8.13	206.4	207.34	207.34	207.65	0.01605	2.46	3.3	5.35	1
Lansdowne	Reach 1-Low	385	200yr 24hr SCS	10.13	206.4	207.44	207.44	207.79	0.01594	2.63	3.85	5.56	1.01
Lansdowne	Reach 1-Low	381	Timmins	12.68	206.29	207.25	207.25	207.54	0.014826	2.41	5.3	9.31	1
Lansdowne	Reach 1-Low	381	2yr 24hr SCS	1.22	206.29	206.66	206.66	206.76	0.020407	1.38	0.88	4.41	0.99
Lansdowne	Reach 1-Low	381	5yr 24hr SCS	2.24	206.29	206.78	206.77	206.89	0.018863	1.49	1.5	6.3	0.98
Lansdowne	Reach 1-Low	381	10yr 24hr SCS	3.29	206.29	206.85	206.85	206.99	0.019624	1.67	1.97	7.21	1.02
Lansdowne	Reach 1-Low	381	25yr 24hr SCS	4.98	206.29	206.94	206.94	207.12	0.018158	1.87	2.66	7.72	1.02
Lansdowne	Reach 1-Low	381	50yr 24hr SCS	6.47	206.29	207.01	207.01	207.22	0.017226	1.99	3.24	8.19	1.01
Lansdowne	Reach 1-Low	381	100yr 24hr SCS	8.13	206.29	207.09	207.09	207.31	0.016496	2.11	3.86	8.69	1.01
Lansdowne	Reach 1-Low	381	200yr 24hr SCS	10.13	206.29	207.16	207.16	207.42	0.015439	2.24	4.53	9.01	1
Lansdowne	Reach 1-Low	351	Timmins	12.68	205.6	206.68	206.68	206.94	0.011773	2.5	6.72	13.67	0.92
Lansdowne	Reach 1-Low	351	2yr 24hr SCS	1.22	205.6	206.01	206.01	206.14	0.020609	1.58	0.77	3.08	1.01
Lansdowne	Reach 1-Low	351	5yr 24hr SCS	2.24	205.6	206.14	206.14	206.31	0.019156	1.83	1.23	3.73	1.02
Lansdowne	Reach 1-Low	351	10yr 24hr SCS	3.29	205.6	206.28	206.28	206.43	0.014648	1.72	2.14	8.75	0.91
Lansdowne	Reach 1-Low	351	25yr 24hr SCS	4.98	205.6	206.39	206.39	206.56	0.012428	1.87	3.23	10.92	0.87
Lansdowne	Reach 1-Low	351	50yr 24hr SCS	6.47	205.6	206.46	206.46	206.64	0.012582	2.04	3.93	11.38	0.9
Lansdowne	Reach 1-Low	351	100yr 24hr SCS	8.13	205.6	206.53	206.53	206.73	0.012235	2.18	4.73	12.05	0.9
Lansdowne	Reach 1-Low	351	200yr 24hr SCS	10.13	205.6	206.6	206.6	206.83	0.012184	2.35	5.6	12.83	0.92
Lansdowne	Reach 1-Low	326	Timmins	12.68	204.84	206	206	206.3	0.014609	2.44	5.2	8.65	0.99
Lansdowne	Reach 1-Low	326	2yr 24hr SCS	1.22	204.84	205.23	205.23	205.35	0.020319	1.51	0.81	3.46	1
Lansdowne	Reach 1-Low	326	5yr 24hr SCS	2.24	204.84	205.35	205.35	205.51	0.018692	1.74	1.28	4.16	1
Lansdowne	Reach 1-Low	326	10yr 24hr SCS	3.29	204.84	205.46	205.46	205.64	0.017516	1.9	1.74	4.7	1
Lansdowne	Reach 1-Low	326	25yr 24hr SCS	4.98	204.84	205.58	205.58	205.81	0.016891	2.09	2.38	5.41	1.01
Lansdowne	Reach 1-Low	326	50yr 24hr SCS	6.47	204.84	205.69	205.69	205.93	0.015983	2.18	2.96	6.05	1
Lansdowne	Reach 1-Low	326	100yr 24hr SCS	8.13	204.84	205.78	205.78	206.05	0.015621	2.28	3.56	6.69	1
Lansdowne	Reach 1-Low	326	200yr 24hr SCS	10.13	204.84	205.88	205.88	206.17	0.015398	2.37	4.27	7.48	1

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Lansdowne	Reach 1-Low	284	Timmins	12.68	203.37	205.04		205.15	0.004335	1.58	9.47	19.53	0.54
Lansdowne	Reach 1-Low	284	2yr 24hr SCS	1.22	203.37	203.86		203.96	0.012836	1.4	0.87	2.89	0.81
Lansdowne	Reach 1-Low	284	5yr 24hr SCS	2.24	203.37	204.44		204.47	0.001469	0.72	3.09	4.73	0.29
Lansdowne	Reach 1-Low	284	10yr 24hr SCS	3.29	203.37	204.65		204.68	0.001728	0.77	4.31	7.45	0.32
Lansdowne	Reach 1-Low	284	25yr 24hr SCS	4.98	203.37	204.77		204.82	0.002404	0.94	5.38	9.75	0.38
Lansdowne	Reach 1-Low	284	50yr 24hr SCS	6.47	203.37	204.85		204.91	0.002848	1.08	6.23	13.49	0.42
Lansdowne	Reach 1-Low	284	100yr 24hr SCS	8.13	203.37	204.91		204.98	0.003332	1.24	7.15	16.72	0.46
Lansdowne	Reach 1-Low	284	200yr 24hr SCS	10.13	203.37	204.97		205.06	0.00383	1.4	8.17	17.47	0.5
Lansdowne	Reach 1-Low	282	Timmins	12.68	202.79	205.07	204.28	205.11	0.001549	0.96	15.07	36.37	0.33
Lansdowne	Reach 1-Low	282	2yr 24hr SCS	1.22	202.79	203.91	203.15	203.92	0.000387	0.42	2.93	3.56	0.15
Lansdowne	Reach 1-Low	282	5yr 24hr SCS	2.24	202.79	204.45	203.3	204.46	0.000307	0.4	5.59	7.33	0.14
Lansdowne	Reach 1-Low	282	10yr 24hr SCS	3.29	202.79	204.65	203.44	204.66	0.00041	0.46	7.26	9.38	0.16
Lansdowne	Reach 1-Low	282	25yr 24hr SCS	4.98	202.79	204.79	203.62	204.8	0.000766	0.58	8.87	16.25	0.22
Lansdowne	Reach 1-Low	282	50yr 24hr SCS	6.47	202.79	204.86	203.76	204.88	0.000956	0.67	10.2	18	0.25
Lansdowne	Reach 1-Low	282	100yr 24hr SCS	8.13	202.79	204.93	203.89	204.95	0.001204	0.76	11.41	19.89	0.28
Lansdowne	Reach 1-Low	282	200yr 24hr SCS	10.13	202.79	204.99	204.04	205.03	0.001389	0.86	12.84	24.22	0.31
Lansdowne	Reach 1-Low	273	High St.	Culvert									
Lansdowne	Reach 1-Low	260	Timmins	12.68	202.41	203.73	203.73	204.18	0.015628	2.97	4.27	11.86	1
Lansdowne	Reach 1-Low	260	2yr 24hr SCS	1.22	202.41	203.05	202.8	203.08	0.002546	0.8	1.53	3.33	0.38
Lansdowne	Reach 1-Low	260	5yr 24hr SCS	2.24	202.41	203.2	202.94	203.26	0.003689	1.09	2.06	3.65	0.46
Lansdowne	Reach 1-Low	260	10yr 24hr SCS	3.29	202.41	203.28	203.06	203.38	0.005603	1.41	2.33	3.8	0.58
Lansdowne	Reach 1-Low	260	25yr 24hr SCS	4.98	202.41	203.34	203.21	203.53	0.009658	1.93	2.58	3.94	0.76
Lansdowne	Reach 1-Low	260	50yr 24hr SCS	6.47	202.41	203.37	203.34	203.66	0.014679	2.41	2.68	3.99	0.94
Lansdowne	Reach 1-Low	260	100yr 24hr SCS	8.13	202.41	203.45	203.45	203.82	0.016792	2.7	3.01	4.16	1.01
Lansdowne	Reach 1-Low	260	200yr 24hr SCS	10.13	202.41	203.59	203.59	203.99	0.015955	2.81	3.61	4.71	1
Lansdowne	Reach 1-Low	258	Timmins	12.68	202.34	203.7	203.7	203.96	0.009782	2.38	6.65	13.95	0.8
Lansdowne	Reach 1-Low	258	2yr 24hr SCS	1.22	202.34	203.05		203.08	0.001602	0.66	1.84	3.8	0.3
Lansdowne	Reach 1-Low	258	5yr 24hr SCS	2.24	202.34	203.21		203.25	0.002374	0.91	2.45	4.1	0.38
Lansdowne	Reach 1-Low	258	10yr 24hr SCS	3.29	202.34	203.28		203.36	0.003614	1.19	2.77	4.24	0.47
Lansdowne	Reach 1-Low	258	25yr 24hr SCS	4.98	202.34	203.36		203.49	0.006123	1.62	3.08	4.38	0.61
Lansdowne	Reach 1-Low	258	50yr 24hr SCS	6.47	202.34	203.39		203.6	0.008951	1.99	3.25	4.45	0.75
Lansdowne	Reach 1-Low	258	100yr 24hr SCS	8.13	202.34	203.43	203.35	203.72	0.012426	2.39	3.4	4.51	0.88
Lansdowne	Reach 1-Low	258	200yr 24hr SCS	10.13	202.34	203.6	203.6	203.85	0.010269	2.28	5.24	13.27	0.81
Lansdowne	Reach 1-Low	254	Timmins	12.68	202.05	203.73		203.82	0.002477	1.43	11.65	15.05	0.41
Lansdowne	Reach 1-Low	254	2yr 24hr SCS	1.22	202.05	203.06		203.07	0.000361	0.38	3.2	4.64	0.15
Lansdowne	Reach 1-Low	254	5yr 24hr SCS	2.24	202.05	203.22		203.24	0.000655	0.56	4.35	13.06	0.2
Lansdowne	Reach 1-Low	254	10yr 24hr SCS	3.29	202.05	203.31		203.33	0.000923	0.7	5.56	13.79	0.24
Lansdowne	Reach 1-Low	254	25yr 24hr SCS	4.98	202.05	203.41		203.45	0.001319	0.89	6.99	14.05	0.29
Lansdowne	Reach 1-Low	254	50yr 24hr SCS	6.47	202.05	203.49		203.53	0.001615	1.03	8.04	14.23	0.32
Lansdowne	Reach 1-Low	254	100yr 24hr SCS	8.13	202.05	203.58		203.63	0.00179	1.13	9.31	14.44	0.34
Lansdowne	Reach 1-Low	254	200yr 24hr SCS	10.13	202.05	203.61		203.69	0.002439	1.35	9.81	14.54	0.4
Lansdowne	Reach 1-Low	252	Timmins	12.68	201.84	203.74	203.35	203.8	0.001711	1.25	13.84	16.7	0.34
Lansdowne	Reach 1-Low	252	2yr 24hr SCS	1.22	201.84	203.06	202.35	203.07	0.000334	0.38	3.31	8.07	0.13
Lansdowne	Reach 1-Low	252	5yr 24hr SCS	2.24	201.84	203.22	202.56	203.23	0.000526	0.54	5.24	14.25	0.17
Lansdowne	Reach 1-Low	252	10yr 24hr SCS	3.29	201.84	203.31	202.74	203.33	0.000742	0.67	6.41	14.58	0.21
Lansdowne	Reach 1-Low	252	25yr 24hr SCS	4.98	201.84	203.41	202.99	203.44	0.001085	0.87	7.8	15.04	0.26
Lansdowne	Reach 1-Low	252	50yr 24hr SCS	6.47	201.84	203.49	203.03	203.53	0.001354	1.01	8.82	15.38	0.29
Lansdowne	Reach 1-Low	252	100yr 24hr SCS	8.13	201.84	203.58	203.03	203.62	0.00122	0.98	11.23	15.82	0.28
Lansdowne	Reach 1-Low	252	200yr 24hr SCS	10.13	201.84	203.62	203.25	203.67	0.001662	1.16	11.8	16.02	0.33
Lansdowne	Reach 1-Low	240	Yard 2	Culvert									
Lansdowne	Reach 1-Low	227	Timmins	12.68	201.01	202.48	202.48	203.22	0.010567	3.8	3.34	6.66	1
Lansdowne	Reach 1-Low	227	2yr 24hr SCS	1.22	201.01	201.87	201.32	201.89	0.000576	0.62	1.96	4.84	0.21
Lansdowne	Reach 1-Low	227	5yr 24hr SCS	2.24	201.01	201.9	201.47	201.97	0.001739	1.1	2.03	4.89	0.37
Lansdowne	Reach 1-Low	227	10yr 24hr SCS	3.29	201.01	201.92	201.61	202.05	0.003581	1.6	2.06	4.91	0.54
Lansdowne	Reach 1-Low	227	25yr 24hr SCS	4.98	201.01	201.89	201.8	202.21	0.008976	2.49	2	4.87	0.85
Lansdowne	Reach 1-Low	227	50yr 24hr SCS	6.47	201.01	201.95	201.95	202.42	0.01229	3.04	2.13	4.96	1
Lansdowne	Reach 1-Low	227	100yr 24hr SCS	8.13	201.01	202.1	202.1	202.65	0.01164	3.27	2.48	5.24	1
Lansdowne	Reach 1-Low	227	200yr 24hr SCS	10.13	201.01	202.28	202.28	202.91	0.01104	3.52	2.88	5.9	1
Lansdowne	Reach 1-Low	225	Timmins	12.68	200.82	202.35	202.35	202.82	0.016363	3.04	4.21	4.8	0.98
Lansdowne	Reach 1-Low	225	2yr 24hr SCS	1.22	200.82	201.88		201.89	0.000724	0.53	2.32	3.2	0.2
Lansdowne	Reach 1-Low	225	5yr 24hr SCS	2.24	200.82	201.91		201.95	0.002188	0.92	2.43	3.31	0.34
Lansdowne	Reach 1-Low	225	10yr 24hr SCS	3.29	200.82	201.93		202.02	0.004409	1.32	2.5	3.38	0.49
Lansdowne	Reach 1-Low	225	25yr 24hr SCS	4.98	200.82	201.93		202.13	0.009982	1.98	2.51	3.39	0.74
Lansdowne	Reach 1-Low	225	50yr 24hr SCS	6.47	200.82	201.9	201.9	202.27	0.018699	2.69	2.4	3.29	1.01
Lansdowne	Reach 1-Low	225	100yr 24hr SCS	8.13	200.82	202.05	202.05	202.44	0.01822	2.77	2.93	3.78	1.01
Lansdowne	Reach 1-Low	225	200yr 24hr SCS	10.13	200.82	202.2	202.2	202.62	0.017498	2.87	3.53	4.27	1
Lansdowne	Reach 1-Low	220	Timmins	12.68	200.89	202.16	202.16	202.59	0.014598	2.91	4.41	5.49	1
Lansdowne	Reach 1-Low	220	2yr 24hr SCS	1.22	200.89	201.88		201.89	0.000426	0.41	2.98	4.61	0.16
Lansdowne	Reach 1-Low	220	5yr 24hr SCS	2.24	200.89	201.91		201.94	0.001213	0.71	3.15	4.7	0.28
Lansdowne	Reach 1-Low	220	10yr 24hr SCS	3.29	200.89	201.94		201.99	0.002322	1.01	3.28	4.76	0.38
Lansdowne	Reach 1-Low	220	25yr 24hr SCS	4.98	200.89	201.96		202.07	0.004817	1.47	3.39	4.82	0.56
Lansdowne	Reach 1-Low	220	50yr 24hr SCS	6.47	200.89	201.97		202.15	0.007941	1.9	3.41	4.83	0.71
Lansdowne	Reach 1-Low	220	100yr 24hr SCS	8.13	200.89	201.95	201.91	202.26	0.013422	2.44	3.34	4.79	0.93
Lansdowne	Reach 1-Low	220	200yr 24hr SCS	10.13	200.89	202.03	202.03	202.41	0.015428	2.75	3.69	5.02	1

River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Lansdowne	Reach 1-Low	209	Timmins	12.68	201.72	202.06		202.1	0.004753	0.87	14.62	62.84	0.58
Lansdowne	Reach 1-Low	209	2yr 24hr SCS	1.22	201.72	201.87		201.87	0.005801	0.4	3.06	49.17	0.51
Lansdowne	Reach 1-Low	209	5yr 24hr SCS	2.24	201.72	201.9	201.86	201.91	0.005576	0.48	4.63	54.43	0.53
Lansdowne	Reach 1-Low	209	10yr 24hr SCS	3.29	201.72	201.92		201.94	0.005288	0.55	6.05	57.15	0.53
Lansdowne	Reach 1-Low	209	25yr 24hr SCS	4.98	201.72	201.95	201.9	201.97	0.00502	0.63	7.91	57.55	0.54
Lansdowne	Reach 1-Low	209	50yr 24hr SCS	6.47	201.72	201.98		202	0.005031	0.69	9.36	59.23	0.56
Lansdowne	Reach 1-Low	209	100yr 24hr SCS	8.13	201.72	202		202.03	0.004891	0.75	10.95	60.87	0.56
Lansdowne	Reach 1-Low	209	200yr 24hr SCS	10.13	201.72	202.03	201.96	202.06	0.004893	0.81	12.56	61.62	0.57
Lansdowne	Reach 1-Low	166	Timmins	12.68	201.24	201.65	201.65	201.76	0.014925	1.49	8.6	39.87	1.01
Lansdowne	Reach 1-Low	166	2yr 24hr SCS	1.22	201.24	201.4	201.4	201.44	0.020786	0.91	1.35	16.47	1.01
Lansdowne	Reach 1-Low	166	5yr 24hr SCS	2.24	201.24	201.45	201.45	201.5	0.018902	1.02	2.19	20.86	1.01
Lansdowne	Reach 1-Low	166	10yr 24hr SCS	3.29	201.24	201.48	201.48	201.54	0.018398	1.08	3.04	25.93	1.01
Lansdowne	Reach 1-Low	166	25yr 24hr SCS	4.98	201.24	201.52	201.52	201.6	0.01795	1.19	4.2	30.63	1.02
Lansdowne	Reach 1-Low	166	50yr 24hr SCS	6.47	201.24	201.56	201.56	201.63	0.017006	1.24	5.22	34.74	1.01
Lansdowne	Reach 1-Low	166	100yr 24hr SCS	8.13	201.24	201.58	201.58	201.67	0.016321	1.33	6.13	35.85	1.02
Lansdowne	Reach 1-Low	166	200yr 24hr SCS	10.13	201.24	201.61	201.61	201.71	0.015472	1.39	7.31	38.39	1.01
Lansdowne	Reach 1-Low	147	Timmins	12.68	199.22	199.88	199.88	200.12	0.011803	2.16	5.88	12.51	1
Lansdowne	Reach 1-Low	147	2yr 24hr SCS	1.22	199.22	199.47	199.47	199.53	0.018329	1.1	1.11	9.07	1.01
Lansdowne	Reach 1-Low	147	5yr 24hr SCS	2.24	199.22	199.54	199.54	199.62	0.017046	1.29	1.74	10.71	1.02
Lansdowne	Reach 1-Low	147	10yr 24hr SCS	3.29	199.22	199.59	199.59	199.69	0.015678	1.44	2.29	11.19	1.02
Lansdowne	Reach 1-Low	147	25yr 24hr SCS	4.98	199.22	199.65	199.65	199.79	0.014443	1.62	3.07	11.76	1.01
Lansdowne	Reach 1-Low	147	50yr 24hr SCS	6.47	199.22	199.7	199.7	199.86	0.013696	1.76	3.68	11.95	1.01
Lansdowne	Reach 1-Low	147	100yr 24hr SCS	8.13	199.22	199.76	199.76	199.94	0.01305	1.89	4.31	12.13	1.01
Lansdowne	Reach 1-Low	147	200yr 24hr SCS	10.13	199.22	199.82	199.82	200.02	0.01245	2.02	5.02	12.33	1.01
Lansdowne	Reach 1-Low	130	Timmins	12.68	198.27	198.95	198.86	199.02	0.004935	1.22	11.67	44.27	0.63
Lansdowne	Reach 1-Low	130	2yr 24hr SCS	1.22	198.27	198.63	198.52	198.65	0.004011	0.54	2.27	17.51	0.48
Lansdowne	Reach 1-Low	130	5yr 24hr SCS	2.24	198.27	198.7		198.72	0.004526	0.64	3.49	22.7	0.52
Lansdowne	Reach 1-Low	130	10yr 24hr SCS	3.29	198.27	198.74		198.77	0.004727	0.73	4.5	24.97	0.55
Lansdowne	Reach 1-Low	130	25yr 24hr SCS	4.98	198.27	198.79		198.83	0.004862	0.86	5.87	29.7	0.58
Lansdowne	Reach 1-Low	130	50yr 24hr SCS	6.47	198.27	198.84	198.75	198.88	0.00432	0.92	7.3	31.06	0.56
Lansdowne	Reach 1-Low	130	100yr 24hr SCS	8.13	198.27	198.87	198.78	198.92	0.004469	1.01	8.5	35.53	0.58
Lansdowne	Reach 1-Low	130	200yr 24hr SCS	10.13	198.27	198.91	198.82	198.97	0.004698	1.11	9.88	39.61	0.61
Lansdowne	Reach 1-Low	111	Timmins	12.68	198.3	198.26	198.26	198.34	0.040394		10.18	67.59	0
Lansdowne	Reach 1-Low	111	2yr 24hr SCS	1.22	198.3	198.08		198.11	0.034026		1.84	26.19	0
Lansdowne	Reach 1-Low	111	5yr 24hr SCS	2.24	198.3	198.13		198.16	0.027775		3.28	36.13	0
Lansdowne	Reach 1-Low	111	10yr 24hr SCS	3.29	198.3	198.16		198.19	0.02737		4.29	42.18	0
Lansdowne	Reach 1-Low	111	25yr 24hr SCS	4.98	198.3	198.19		198.23	0.028967		5.9	52.96	0
Lansdowne	Reach 1-Low	111	50yr 24hr SCS	6.47	198.3	198.19	198.19	198.25	0.046427		6.02	53.38	0
Lansdowne	Reach 1-Low	111	100yr 24hr SCS	8.13	198.3	198.22	198.22	198.28	0.045936		7.3	58.5	0
Lansdowne	Reach 1-Low	111	200yr 24hr SCS	10.13	198.3	198.24	198.24	198.31	0.04298		8.58	61.96	0
Lansdowne	Reach 1-Low	94	Timmins	12.68	197.36	197.33		197.35	0.00457		19.24	59.27	0
Lansdowne	Reach 1-Low	94	2yr 24hr SCS	1.22	197.36	196.88	196.88	196.92	0.038535		1.38	15.89	0
Lansdowne	Reach 1-Low	94	5yr 24hr SCS	2.24	197.36	196.92	196.92	196.98	0.047896		2.14	19.68	0
Lansdowne	Reach 1-Low	94	10yr 24hr SCS	3.29	197.36	196.96	196.96	197.03	0.047318		2.89	21.22	0
Lansdowne	Reach 1-Low	94	25yr 24hr SCS	4.98	197.36	197	197	197.09	0.042136		3.91	24.62	0
Lansdowne	Reach 1-Low	94	50yr 24hr SCS	6.47	197.36	197.08	197.05	197.13	0.020665		6.28	36.27	0
Lansdowne	Reach 1-Low	94	100yr 24hr SCS	8.13	197.36	197.25		197.27	0.00449		14.76	58.47	0
Lansdowne	Reach 1-Low	94	200yr 24hr SCS	10.13	197.36	197.29		197.31	0.004525		16.84	58.84	0
Lansdowne	Reach 1-Low	50	Timmins	12.68	196.58	196.82	196.82	196.91	0.020447	1.09	9.87	63.62	1.05
Lansdowne	Reach 1-Low	50	2yr 24hr SCS	1.22	196.58	196.89		196.9	0.000058	0.06	15.08	81.78	0.06
Lansdowne	Reach 1-Low	50	5yr 24hr SCS	2.24	196.58	196.89		196.9	0.000198	0.11	15.04	81.65	0.1
Lansdowne	Reach 1-Low	50	10yr 24hr SCS	3.29	196.58	196.89		196.9	0.000433	0.16	14.97	81.44	0.15
Lansdowne	Reach 1-Low	50	25yr 24hr SCS	4.98	196.58	196.89		196.9	0.001024	0.24	14.8	80.92	0.23
Lansdowne	Reach 1-Low	50	50yr 24hr SCS	6.47	196.58	196.89		196.9	0.001794	0.32	14.58	79.56	0.31
Lansdowne	Reach 1-Low	50	100yr 24hr SCS	8.13	196.58	196.78	196.78	196.84	0.019133	1.13	7.16	55.74	1.03
Lansdowne	Reach 1-Low	50	200yr 24hr SCS	10.13	196.58	196.8	196.8	196.87	0.019878	1.2	8.46	58.43	1.06
Lansdowne	Reach 1-Low	32	Timmins	12.68	195.65	196.06	196.06	196.15	0.015997	1.35	9.42	52.04	1.01
Lansdowne	Reach 1-Low	32	2yr 24hr SCS	1.22	195.65	196.9	195.84	196.9	0.000001	0.02	82.41	184.25	0.01
Lansdowne	Reach 1-Low	32	5yr 24hr SCS	2.24	195.65	196.9	195.88	196.9	0.000002	0.03	82.41	184.25	0.01
Lansdowne	Reach 1-Low	32	10yr 24hr SCS	3.29	195.65	196.9	195.91	196.9	0.000004	0.04	82.41	184.25	0.02
Lansdowne	Reach 1-Low	32	25yr 24hr SCS	4.98	195.65	196.9	195.96	196.9	0.000009	0.06	82.41	184.25	0.03
Lansdowne	Reach 1-Low	32	50yr 24hr SCS	6.47	195.65	196.9	195.98	196.9	0.000015	0.08	82.41	184.25	0.04
Lansdowne	Reach 1-Low	32	100yr 24hr SCS	8.13	195.65	196.01	196.01	196.08	0.016903	1.21	6.7	45.05	1.01
Lansdowne	Reach 1-Low	32	200yr 24hr SCS	10.13	195.65	196.03	196.03	196.11	0.01683	1.29	7.83	47.78	1.02

APPENDIX C:

Structure Information

Project Name: Lansdowne Creek FPM

Project Number: 23016

Bridge Crossing Risk Assessment

River	Reach	River Sta	Profile	E.G. US.	Min El Prs	BR Open Area	Q Total	Min El Weir Flow	W.S. Elev	Q Weir	Delta EG	Crossing Depth
				(m)	(m)	(m2)	(m3/s)	(m)	(m)	(m3/s)	(m)	>= 0.3m
Lansdowne	Reach 1-Lower	1298 HWY 94	Timmins	215.1	213.75	2.79	7.93	214.88	215.1		0.5	0
Lansdowne	Reach 1-Lower	1298 HWY 94	2yr 24hr SCS	213.03	213.75	2.79	0.53	214.88	213.03		0.02	0
Lansdowne	Reach 1-Lower	1298 HWY 94	5yr 24hr SCS	213.36	213.75	2.79	1.09	214.88	213.35		0.03	0
Lansdowne	Reach 1-Lower	1298 HWY 94	10yr 24hr SCS	213.95	213.75	2.79	1.71	214.88	213.95		0.03	0
Lansdowne	Reach 1-Lower	1298 HWY 94	25yr 24hr SCS	214.31	213.75	2.79	2.73	214.88	214.31		0.07	0
Lansdowne	Reach 1-Lower	1298 HWY 94	50yr 24hr SCS	214.47	213.75	2.79	3.64	214.88	214.46		0.13	0
Lansdowne	Reach 1-Lower	1298 HWY 94	100yr 24hr SCS	214.63	213.75	2.79	4.65	214.88	214.63		0.21	0
Lansdowne	Reach 1-Lower	1298 HWY 94	200yr 24hr SCS	214.84	213.75	2.79	5.9	214.88	214.84		0.35	0
Lansdowne	Reach 1-Lower	811 Callander Bay Dr	Timmins	212.29	210.44	3.12	9.73	212	212.29		1.3	0
Lansdowne	Reach 1-Lower	811 Callander Bay Dr	2yr 24hr SCS	210.51	210.44	3.12	0.69	212	210.51		0.03	0
Lansdowne	Reach 1-Lower	811 Callander Bay Dr	5yr 24hr SCS	210.63	210.44	3.12	1.38	212	210.63		0.11	0
Lansdowne	Reach 1-Lower	811 Callander Bay Dr	10yr 24hr SCS	210.81	210.44	3.12	2.15	212	210.81		0.25	0
Lansdowne	Reach 1-Lower	811 Callander Bay Dr	25yr 24hr SCS	211.21	210.44	3.12	3.4	212	211.21		0.56	0
Lansdowne	Reach 1-Lower	811 Callander Bay Dr	50yr 24hr SCS	211.69	210.44	3.12	4.51	212	211.68		0.95	0
Lansdowne	Reach 1-Lower	811 Callander Bay Dr	100yr 24hr SCS	210.75	210.44	3.12	5.73	212	210.73		-0.07	0
Lansdowne	Reach 1-Lower	811 Callander Bay Dr	200yr 24hr SCS	210.91	210.44	3.12	7.24	212	210.88		0.01	0
Lansdowne	Reach 1-Lower	396 Lansdowne St	Timmins	209.1	208.1	2.95	12.68	208.68	207.57		1.15	0
Lansdowne	Reach 1-Lower	396 Lansdowne St	2yr 24hr SCS	207.23	208.1	2.95	1.22	208.68	206.76		0.34	0
Lansdowne	Reach 1-Lower	396 Lansdowne St	5yr 24hr SCS	207.53	208.1	2.95	2.24	208.68	206.91		0.46	0
Lansdowne	Reach 1-Lower	396 Lansdowne St	10yr 24hr SCS	207.75	208.1	2.95	3.29	208.68	207.02		0.54	0
Lansdowne	Reach 1-Lower	396 Lansdowne St	25yr 24hr SCS	208.07	208.1	2.95	4.98	208.68	207.15		0.69	0
Lansdowne	Reach 1-Lower	396 Lansdowne St	50yr 24hr SCS	208.32	208.1	2.95	6.47	208.68	207.24		0.81	0
Lansdowne	Reach 1-Lower	396 Lansdowne St	100yr 24hr SCS	208.68	208.1	2.95	8.13	208.68	207.34		1.04	0
Lansdowne	Reach 1-Lower	396 Lansdowne St	200yr 24hr SCS	209.09	208.1	2.95	10.13	208.68	207.44		1.3	0

water's edge ENVIRONMENTAL SOLUTIONS TEAM

Project Name: Lansdowne Creek FPM

Project Number: 23016

Crossing Risk Assessment

River	Reach	River Sta	Profile	E.G. US.	W.S. US.	E.G. IC	E.G. OC	Min El Weir Flow	Q Culv Group	Q Weir	Delta WS	Culv Vel US	Culv Vel DS	Crossing Depth
				(m)	(m)	(m)	(m)	(m)	(m3/s)	(m3/s)	(m)	(m/s)	(m/s)	>= 0.3m
Lansdowne	Reach 1-Lower	1257 Driveway 1 Group #1	Timmins	214.58	214.56	214.5	214.58	214.14	3.44	6.29	0.35	1.71	1.71	0.42
Lansdowne	Reach 1-Lower	1257 Driveway 1 Group #1	2yr 24hr SCS	212.9	212.88	212.9	213.03	214.14	0.69		0.06	1.69	0.64	0
Lansdowne	Reach 1-Lower	1257 Driveway 1 Group #1	5yr 24hr SCS	213.31	213.29	213.18	213.31	214.14	1.38		0.23	1.85	0.95	0
Lansdowne	Reach 1-Lower	1257 Driveway 1 Group #1	10yr 24hr SCS	213.92	213.91	213.45	213.92	214.14	2.15		0.14	1.12	1.07	0
Lansdowne	Reach 1-Lower	1257 Driveway 1 Group #1	25yr 24hr SCS	214.23	214.23	213.86	214.23	214.14	3.14	0.26	0.3	1.56	1.56	0
Lansdowne	Reach 1-Lower	1257 Driveway 1 Group #1	50yr 24hr SCS	214.33	214.32	214.19	214.33	214.14	3.27	1.24	0.32	1.63	1.63	0
Lansdowne	Reach 1-Lower	1257 Driveway 1 Group #1	100yr 24hr SCS	214.4	214.39	214.3	214.4	214.14	3.34	2.39	0.34	1.66	1.66	0
Lansdowne	Reach 1-Lower	1257 Driveway 1 Group #1	200yr 24hr SCS	214.48	214.46	214.39	214.48	214.14	3.38	3.86	0.34	1.68	1.68	0.32
Lansdowne	Reach 1-Lower	1199 Driveway 2 Culvert #1	Timmins	214.21	214.2	214.14	214.21	213.6	1.2	8.53	0.08	1.06	1.06	0.6
Lansdowne	Reach 1-Lower	1199 Driveway 2 Culvert #1	2yr 24hr SCS	212.43	212.43	211.85	212.43	213.6	0.69		0.03	0.62	0.61	0
Lansdowne	Reach 1-Lower	1199 Driveway 2 Culvert #1	5yr 24hr SCS	213.01	213	212.16	213.01	213.6	1.38		0.12	1.22	1.22	0
Lansdowne	Reach 1-Lower	1199 Driveway 2 Culvert #1	10yr 24hr SCS	213.77	213.77	212.49	213.77	213.6	1.57	0.58	0.16	1.39	1.39	0
Lansdowne	Reach 1-Lower	1199 Driveway 2 Culvert #1	25yr 24hr SCS	213.92	213.92	213.18	213.92	213.6	1.07	2.33	0.07	0.95	0.95	0.32
Lansdowne	Reach 1-Lower	1199 Driveway 2 Culvert #1	50yr 24hr SCS	213.99	213.99	213.93	213.99	213.6	1.02	3.49	0.06	0.9	0.9	0.39
Lansdowne	Reach 1-Lower	1199 Driveway 2 Culvert #1	100yr 24hr SCS	214.05	214.05	213.99	214.05	213.6	1.02	4.71	0.06	0.9	0.9	0.45
Lansdowne	Reach 1-Lower	1199 Driveway 2 Culvert #1	200yr 24hr SCS	214.12	214.11	214.06	214.12	213.6	1.08	6.16	0.07	0.96	0.96	0.51
Lansdowne	Reach 1-Lower	1169 Driveway 3 Group #1	Timmins	214.12	214.1	214.07	214.12	213.64	2.04	7.69	0.37	2.14	2.14	0.46
Lansdowne	Reach 1-Lower	1169 Driveway 3 Group #1	2yr 24hr SCS	212.37	212.34	212.37	212.46	213.64	0.69		0.03	1.84	0.9	0
Lansdowne	Reach 1-Lower	1169 Driveway 3 Group #1	5yr 24hr SCS	212.86	212.83	212.71	212.86	213.64	1.38		0.15	1.62	1.45	0
Lansdowne	Reach 1-Lower	1169 Driveway 3 Group #1	10yr 24hr SCS	213.6	213.57	213.11	213.6	213.64	2.15		0.39	2.26	2.26	0
Lansdowne	Reach 1-Lower	1169 Driveway 3 Group #1	25yr 24hr SCS	213.85	213.84	213.73	213.85	213.64	1.89	1.51	0.32	1.99	1.99	0
Lansdowne	Reach 1-Lower	1169 Driveway 3 Group #1	50yr 24hr SCS	213.92	213.92	213.83	213.92	213.64	1.91	2.6	0.33	2.01	2.01	0
Lansdowne	Reach 1-Lower	1169 Driveway 3 Group #1	100yr 24hr SCS	213.99	213.98	213.91	213.99	213.64	1.9	3.83	0.32	2	2	0.34
Lansdowne	Reach 1-Lower	1169 Driveway 3 Group #1	200yr 24hr SCS	214.04	214.03	214	214.04	213.64	1.98	5.26	0.35	2.08	2.08	0.39
Lansdowne	Reach 1-Lower	1155 Driveway 4 Group #1	Timmins	213.76	213.72	213.74	213.76	213.36	2.16	7.57	0.61	2.75	2.75	0.36
Lansdowne	Reach 1-Lower	1155 Driveway 4 Group #1	2yr 24hr SCS	212.32	212.3	211.92	212.32	213.36	0.69		0.04	0.88	0.88	0
Lansdowne	Reach 1-Lower	1155 Driveway 4 Group #1	5yr 24hr SCS	212.68	212.63	212.28	212.68	213.36	1.38		0.22	1.76	1.76	0
Lansdowne	Reach 1-Lower	1155 Driveway 4 Group #1	10yr 24hr SCS	213.17	213.11	212.73	213.17	213.36	2.15		0.59	2.74	2.74	0
Lansdowne	Reach 1-Lower	1155 Driveway 4 Group #1	25yr 24hr SCS	213.52	213.51	213.47	213.52	213.36	2.46	0.94	0.83	3.13	3.13	0
Lansdowne	Reach 1-Lower	1155 Driveway 4 Group #1	50yr 24hr SCS	213.6	213.58	213.56	213.6	213.36	2.42	2.09	0.8	3.08	3.08	0
Lansdowne	Reach 1-Lower	1155 Driveway 4 Group #1	100yr 24hr SCS	213.66	213.64	213.61	213.66	213.36	2.39	3.34	0.77	3.04	3.04	0
Lansdowne	Reach 1-Lower	1155 Driveway 4 Group #1	200yr 24hr SCS	213.7	213.67	213.67	213.7	213.36	2.28	4.96	0.69	2.9	2.9	0.31
Lansdowne	Reach 1-Lower	1090 Driveway 5 Group #1	Timmins	212.78	212.76	212.77	212.78	212.37	2.99	6.74	0.67	3.15	3.15	0.39
Lansdowne	Reach 1-Lower	1090 Driveway 5 Group #1	2yr 24hr SCS	211.68	211.67	211.64	211.68	212.37	0.69		0.45	1.84	2.69	0
Lansdowne	Reach 1-Lower	1090 Driveway 5 Group #1	5yr 24hr SCS	212	211.99	211.99	212	212.37	1.38		0.68	2.32	3.14	0
Lansdowne	Reach 1-Lower	1090 Driveway 5 Group #1	10yr 24hr SCS	212.37	212.36	212.37	212.31	212.37	2.13	0.05	0.86	2.79	3.53	0
Lansdowne	Reach 1-Lower	1090 Driveway 5 Group #1	25yr 24hr SCS	212.53	212.53	212.53	212.41	212.37	2.37	1.03	0.85	2.96	3.65	0
Lansdowne	Reach 1-Lower	1090 Driveway 5 Group #1	50yr 24hr SCS	212.6	212.59	212.6	212.45	212.37	2.47	2.04	0.83	3.02	3.69	0
Lansdowne	Reach 1-Lower	1090 Driveway 5 Group #1	100yr 24hr SCS	212.64	212.63	212.64	212.48	212.37	2.53	3.2	0.89	3.07	3.73	0
Lansdowne	Reach 1-Lower	1090 Driveway 5 Group #1	200yr 24hr SCS	212.69	212.68	212.69	212.51	212.37	2.61	4.63	0.82	2.74	4.4	0.31
Lansdowne	Reach 1-Lower	946 Eglington Rd N Group #1	Timmins	212.3	212.29	212.3	212.3	211.63	0.3	9.43	0	0.2	0.2	0.66
Lansdowne	Reach 1-Lower	946 Eglington Rd N Group #1	2yr 24hr SCS	210.87	210.86	210.32	210.87	211.63	0.69		0.02	0.52	0.46	0
Lansdowne	Reach 1-Lower	946 Eglington Rd N Group #1	5yr 24hr SCS	211.2	211.2	210.63	211.2	211.63	1.38		0.07	0.9	0.9	0
Lansdowne	Reach 1-Lower	946 Eglington Rd N Group #1	10yr 24hr SCS	211.49	211.48	210.94	211.49	211.63	2.15		0.16	1.4	1.4	0
Lansdowne	Reach 1-Lower	946 Eglington Rd N Group #1	25yr 24hr SCS	211.7	211.7	211.43	211.7	211.63	2.8	0.6	0.28	1.82	1.82	0
Lansdowne	Reach 1-Lower	946 Eglington Rd N Group #1	50yr 24hr SCS	211.81	211.81	211.71	211.81	211.63	1.74	2.77	0.11	1.13	1.13	0
Lansdowne	Reach 1-Lower	946 Eglington Rd N Group #1	100yr 24hr SCS	211.8	211.8	211.75	211.8	211.63	3.1	2.63	0.34	2.01	2.01	0
Lansdowne	Reach 1-Lower	946 Eglington Rd N Group #1	200yr 24hr SCS	211.85	211.85	211.82	211.85	211.63	3.1	4.14	0.34	2.01	2.01	0
Lansdowne	Reach 1-Lower	906 Driveway 6 Group #1	Timmins	212.29	212.29	212.29	212.29	211.18	0.13	9.6	0	0.16	0.16	1.11
Lansdowne	Reach 1-Lower	906 Driveway 6 Group #1	2yr 24hr SCS	210.8	210.8	210.73	210.8	211.18	0.69		0.17	1.82	1.12	0
Lansdowne	Reach 1-Lower	906 Driveway 6 Group #1	5yr 24hr SCS	211.11	211.11	211.11	211.19	211.18	1.38		0.35	2.44	1.92	0
Lansdowne	Reach 1-Lower	906 Driveway 6 Group #1	10yr 24hr SCS	211.32	211.31	211.32	211.36	211.18	1.69	0.46	0.44	2.68	2.17	0
Lansdowne	Reach 1-Lower	906 Driveway 6 Group #1	25yr 24hr SCS	211.42	211.41	211.39	211.42	211.18	1.15	2.25	0.19	1.47	1.47	0
Lansdowne	Reach 1-Lower	906 Driveway 6 Group #1	50yr 24hr SCS	211.7	211.7	211.7	211.7	211.18	0.23	4.28	0.01	0.29	0.29	0.52
Lansdowne	Reach 1-Lower	906 Driveway 6 Group #1	100yr 24hr SCS	211.46	211.45	211.47	211.46	211.18	1.56	4.17	0.34	1.99	1.99	0
Lansdowne	Reach 1-Lower	906 Driveway 6 Group #1	200yr 24hr SCS	211.52	211.51	211.5	211.52	211.18	1.43	5.81	0.29	1.83	1.83	0.33
Lansdowne	Reach 1-Lower	724 Pedestrian 2 Group #1	Timmins	210.94	210.93	210.94	210.94	209.96	0	12.68	0	0	0	0.97
Lansdowne	Reach 1-Lower	724 Pedestrian 2 Group #1	2yr 24hr SCS	210.47	210.47	210.21	210.47	209.96	0.1	1.12	0	0.13	0.13	0.51
Lansdowne	Reach 1-Lower	724 Pedestrian 2 Group #1	5yr 24hr SCS	210.5	210.5	210.5	210.5	209.96	0.13	2.11	0	0.16	0.16	0.54
Lansdowne	Reach 1-Lower	724 Pedestrian 2 Group #1	10yr 24hr SCS	210.54	210.54	210.54	210.54	209.96	0.16	3.13	0	0.2	0.2	0.58
Lansdowne	Reach 1-Lower	724 Pedestrian 2 Group #1	25yr 24hr SCS	210.62	210.62	210.62	210.62	209.96	0.18	4.8	0	0.23	0.23	0.66
Lansdowne	Reach 1-Lower	724 Pedestrian 2 Group #1	50yr 24hr SCS	210.71	210.71	210.71	210.71	209.96	0.27	6.2	0.01	0.34	0.34	0.75
Lansdowne	Reach 1-Lower	724 Pedestrian 2 Group #1	100yr 24hr SCS	210.79	210.78	210.79	210.79	209.96	0.08	8.05	0	0.1	0.1	0.82
Lansdowne	Reach 1-Lower	724 Pedestrian 2 Group #1	200yr 24hr SCS	210.86	210.86	210.85	210.86	209.96	0.32	9.81	0.01	0.41	0.41	0.9
Lansdowne	Reach 1-Lower	602 Yard Crossing 1 Group #1	Timmins	210.9	210.89	210.9	210.9	209.46	0.26	12.42	0	0.23	0.23	1.43
Lansdowne	Reach 1-Lower	602 Yard Crossing 1 Group #1	2yr 24hr SCS	210.46	210.46	209.24	210.46	209.46	0.12	1.1	0	0.1	0.1	1
Lansdowne	Reach 1-Lower	602 Yard Crossing 1 Group #1	5yr 24hr SCS	210.47	210.47	209.67	210.47	209.46	0.18	2.06	0	0.16	0.16	1.01
Lansdowne	Reach 1-Lower	602 Yard Crossing 1 Group #1	10yr 24hr SCS	210.5	210.5	210.25	210.5	209.46	0.24	3.05	0	0.21	0.21	1.04
Lansdowne	Reach 1-Lower	602 Yard Crossing 1 Group #1	25yr 24hr SCS	210.57	210.57	210.57	210.57	209.46	0.29	4.69	0	0.26	0.26	1.11
Lansdowne	Reach 1-Lower	602 Yard Crossing 1 Group #1	50yr 24hr SCS	210.66	210.66	210.66	210.66	209.46	0.25	6.22	0	0.22	0.22	1.2
Lansdowne	Reach 1-Lower	602 Yard Crossing 1 Group #1	100yr 24hr SCS	210.75	210.74	210.74	210.75	209.46	0.29	7.84	0	0.26	0.26	1.28
Lansdowne	Reach 1-Lower	602 Yard Crossing 1 Group #1	200yr 24hr SCS	210.81	210.8	210.81	210.81	209.46	0.33	9.8	0	0.29	0.29	1.34
Lansdowne	Reach 1-Lower	566 Pedstrian 5 Culvert #1	Timmins	210.88	210.85	210.81	210.88	210.06	1.1	11.58	0.1	1.27	1.27	0.79
Lansdowne	Reach 1-Lower	566 Pedstrian 5 Culvert #1	2yr 24hr SCS	210.46	210.46	209.2	210.46	210.06	0.17	1.05	0	0.2	0.2	0.4
Lansdowne	Reach 1-Lower	566 Pedstrian 5 Culvert #1	5yr 24hr SCS	210.47	210.47	209.81	210.47	210.06	0.35	1.89	0.01	0.4	0.4	0.41
Lansdowne	Reach 1-Lower	566 Pedstrian 5 Culvert #1	10yr 24hr SCS	210.49	210.49	210.46	210.49	210.06	0.61	2.68	0.04	0.7	0.7	0.43
Lansdowne	Reach 1-Lower	566 Pedstrian 5 Culvert #1	25yr 24hr SCS	210.56	210.55	210.44	210.56	210.06	1.19	3.79	0.15	1.38	1.38	0.49
Lansdowne	Reach 1-Lower	566 Pedstrian 5 Culvert #1	50yr 24hr SCS	210.65	210.64	210.56	210.65	210.06	1.15	5.32	0.13	1.32	1.32	0.58
Lansdowne	Reach 1-Lower	566 Pedstrian 5 Culvert #1	100yr 24hr SCS	210.73	210.72	210.66	210.73	210.06	1.04	7.09	0.1	1.21	1.21	0.66
Lansdowne	Reach 1-Lower	566 Pedstrian 5 Culvert #1	200yr 24hr SCS	210.8	210.77	210.72	210.8	210.06	1.13	9	0.11	1.3	1.3	0.71
Lansdowne	Reach 1-Lower	528 Toronto St Group #1	Timmins	210.77	210.76	208.68	210.77	210.47	0.03	7.51	0.02	0.03	0.03	0
Lansdowne	Reach 1-Lower	528 Toronto St Group #1	2yr 24hr SCS	210.46	210.46	209.4	210.46	210.47	0.86	11.57	1.27	0.74	1.12	0
Lansdowne	Reach 1-Lower	528 Toronto St Group #1	5yr 24hr SCS	210.46	210.46	209.79	210.46	210.47	0.73	11.57	0.85	0.62	0.63	0
Lansdowne	Reach 1-Lower	528 Toronto St Group #1	10yr 24hr SCS	210.46	210.46	210.22	210.46	210.47	0.47	11.57	0.35	0.4	0.4	0
Lansdowne	Reach 1-Lower	528 Toronto St Group #1	25yr 24hr SCS	210.42	210.41	208.72	210.42	210.47	0.06	10.35	0.01	0.05	0.05	0
Lansdowne	Reach 1-Lower	528 Toronto St Group #1	50yr 24hr SCS	210.52	210.52	208.68	210.52	210.47	0.03	5	0.01	0.03	0.03	0
Lansdowne	Reach 1-Lower	528 Toronto St Group #1	100yr 24hr SCS	210.63	210.62	208.69	210.63	210.47	0.04	8.97	0.01	0.04	0.04	0
Lansdowne	Reach 1-Lower	528 Toronto St Group #1	200yr 24hr SCS	210.67	210.67	208.68	210.67	210.47	0.04	8.44	0.02	0.03	0.03	0
Lansdowne	Reach 1-Lower	478 King St. Group #1	Timmins	210.75	210.72	211.43	210.75	210.19	4.86	7.82	1.66	4.3	4.3	0.53
Lansdowne	Reach 1-Lower	478 King St. Group #1	2yr 24hr SCS	209.17	209.15	209.07	209.17	210.19	1.22		1	2.15	3.75	0
Lansdowne	Reach 1-Lower	478 King St. Group #1	5yr 24hr SCS	209.59	209.58	209.52	209.59	210.19	2.24		1.21	2.7	4.24	0
Lansdowne	Reach 1-Lower	478 King St. Group #1	10yr 24hr SCS	210.1	210.09	210.1	210.03	210.19	3.29		1.61	2.91	4.88	0
Lansdowne	Reach 1-Lower	478 King St. Group #1	25yr 24hr SCS	210.41	210.4	210.41	210.22	210.19	3.71	1.27	1.79	3.28	5.21	0
Lansdowne	Reach 1-Lower	478 King St. Group #1	50yr 24hr SCS	210.51	210.5	210.51	210.29	210.19	3.85	2.62	1.79	3.4	5.32	0.31
Lansdowne	Reach 1-Lower	478 King St. Group #1	100yr 24hr SCS	210.61	210.6	210.61	210.35	210.19	3.98	4.15	1.79	3.52	5.43	0.41
Lansdowne	Reach 1-Lower	478 King St. Group #1	200yr 24hr SCS	210.66	210.63	211.44	210.66	210.19	4.9	5.23	1.7	4.34	4.34	0.44
Lansdowne	Reach 1-Lower	273 High St. Group #1	Timmins	205.11	205.07	205.08	205.11	204.51	3.35	9.33	1.34	3.55	3.53	0.56
Lansdowne	Reach 1-Lower	273 High St. Group #1	2yr 24hr SCS	203.92	203.91	203.77	203.92	204.51	1.22		0.86	2.22	3.16	0
Lansdowne	Reach 1-Lower	273 High St. Group #1	5yr 24hr SCS	204.46	204.45	204.19	204.46	204.51	2.24		1.25	2.87	3.67	0
Lansdowne	Reach 1-Lower	273 High St. Group #1	10yr 24hr SCS	204.66	204.65	204.33	204.66	204.51	2.6	0.69	1.38	3.12	3.83	0
Lansdowne	Reach 1-Lower	273 High St. Group #1	25yr 24hr SCS	204.8	204.79	204.42	204.8	204.51	2.83	2.15	1.44	3.29	3.94	0
Lansdowne	Reach 1-Lower	273 High St. Group #1	50yr 24hr SCS	204.88	204.86	204.48	204.88	204.51	2.96	3.51	1.49	3.39	4	0.35
Lansdowne	Reach 1-Lower	273 High St. Group #1	100yr 24hr SCS	204.96	204.93	204.53	204.96	204.51	3.07	5.06	1.48	3.47	4.05	0.42
Lansdowne	Reach 1-Lower	273 High St. Group #1	200yr 24hr SCS	205.03	204.99	204.58	205.03	204.51	3.18	6.95	1.41	3.56	4.1	0.48
Lansdowne	Reach 1-Lower	240 Yard 2 Group #1	Timmins	203.8	203.74	203.8	203.91	203.03	2.75	10.02	1.26	3.22	2.89	0.71
Lansdowne	Reach 1-Lower	240 Yard 2 Group #1	2yr 24hr SCS	203.07	203.06	202.88	203.07	203.03	1.19	0.03	1.19	2.2	4.34	0
Lansdowne	Reach 1-Lower	240 Yard 2 Group #1	5yr 24hr SCS	203.23	203.22	203.03	203.23	203.03	1.5	0.74	1.32	2.4	4.53	0
Lansdowne	Reach 1-Lower	240 Yard 2 Group #1	10yr 24hr SCS	203.33	203.31	203.12	203.33	203.03	1.68	1.61	1.39	2.51	4.63	0
Lansdowne	Reach 1-Lower	240 Yard 2 Group #1	25yr 24hr SCS	203.44	203.41	203.23	203.44	203.03	1.89	3.09	1.52	2.65	4.74	0.38
Lansdowne	Reach 1-Lower	240 Yard 2 Group #1	50yr 24hr SCS	203.53	203.49	203.32	203.53	203.03	2.06	4.41	1.54	2.75	4.82	0.46
Lansdowne	Reach 1-Lower	240 Yard 2 Group #1	100yr 24hr SCS	203.62	203.58	203.73	203.62	203.03	2.21	5.92	1.48	2.86	2.33	0.55
Lansdowne	Reach 1-Lower	240 Yard 2 Group #1	200yr 24hr SCS	203.67	203.62	204.22	203.84	203.03	3.23	6.9	1.34	3.4	3.4	0.59
Trib 1	Reach 2	914 Derland Rd Group #1	Timmins	230.52	230.52	230.24	230.52	230.42	1.22	1.07	0.98	2.72	3.5	0
Trib 1	Reach 2	914 Derland Rd Group #1	2yr 24hr SCS	229.54	229.54	229.47	229.54	230.42	0.16		0.47	1.29	2.19	0
Trib 1	Reach 2	914 Derland Rd Group #1	5yr 24hr SCS	229.62	229.62	229.55	229.62	230.42	0.23		0.53	1.43	2.38	0
Trib 1	Reach 2	914 Derland Rd Group #1	10yr 24hr SCS	229.74	229.74	229.65	229.74	230.42	0.34		0.61	1.61	2.6	0
Trib 1	Reach 2	914 Derland Rd Group #1	25yr 24hr SCS	229.95	229.95	229.82	229.95	230.42	0.57		0.77	1.92	2.91	0
Trib 1	Reach 2	914 Derland Rd Group #1	50yr 24hr SCS	230.14	230.14	229.95	230.14	230.42	0.79		0.91	2.18	3.13	0
Trib 1	Reach 2	914 Derland Rd Group #1	100yr 24hr SCS	230.37	230.37	230.14	230.37	230.42	1.05		1.05	2.5	3.36	0
Trib 1	Reach 2	914 Derland Rd Group #1	200yr 24hr SCS	230.46	230.46	230.2	230.46	230.42	1.15	0.22	1.02	2.63	3.45	0
Trib 1	Reach 1	253 Railway South Cr Group #1	Timmins	226.41	226.41	225.92	226.41	231.41	5.77		0.56	2.27	2.27	0
Trib 1	Reach 1	253 Railway South Cr Group #1	2yr 24hr SCS	224.39	224.38	224.29	224.39	231.41	0.41		0.05	0.87	0.42	0
Trib 1	Reach 1	253 Railway South Cr Group #1	5yr 24hr SCS	224.64	224.63	224.5	224.64	231.41	0.87		0.07	1.05	0.63	0
Trib 1	Reach 1	253 Railway South Cr Group #1	10yr 24hr SCS	224.85	224.84	224.68	224.85	231.41	1.36		0.1	1.18	0.8	0
Trib 1	Reach 1	253 Railway South Cr Group #1	25yr 24hr SCS	225.14	225.12	224.93	225.14	231.41	2.15		0.14	1.35	1.02	0
Trib 1	Reach 1	253 Railway South Cr Group #1	50yr 24hr SCS	225.37	225.36	225.13	225.37	231.41	2.85		0.19	1.48	1.21	0
Trib 1	Reach 1	253 Railway South Cr Group #1	100yr 24hr SCS	225.61	225.61	225.34	225.61	231.41	3.62		0.24	1.62	1.43	0
Trib 1	Reach 1	253 Railway South Cr Group #1	200yr 24hr SCS	225.94	225.94	225.6	225.94	231.41	4.58		0.35	1.82	1.8	0
Trib 1	Reach 1	175 HWY 11 n&s - Sou Culvert #1	Timmins	225.86	225.85	225.74	225.86	230.27	5.77		3.97	3.22	5.71	0
Trib 1	Reach 1	175 HWY 11 n&s - Sou Culvert #1	2yr 24hr SCS	224.33	224.33	224.26	224.33	230.27	0.41		2.93	1.44	2.89	0
Trib 1	Reach 1	175 HWY 11 n&s - Sou Culvert #1	5yr 24hr SCS	224.56	224.55	224.46	224.56	230.27	0.87		2.99	1.76	3.61	0
Trib 1	Reach 1	175 HWY 11 n&s - Sou Culvert #1	10yr 24hr SCS	224.74	224.73	224.63	224.74	230.27	1.36		3.1	2	4.12	0
Trib 1	Reach 1	175 HWY 11 n&s - Sou Culvert #1	25yr 24hr SCS	224.98	224.98	224.86	224.98	230.27	2.15		3.26	2.29	4.57	0
Trib 1	Reach 1	175 HWY 11 n&s - Sou Culvert #1	50yr 24hr SCS	225.17	225.17	225.04	225.17	230.27	2.85		3.4	2.5	4.89	0
Trib 1	Reach 1	175 HWY 11 n&s - Sou Culvert #1	100yr 24hr SCS	225.37	225.36	225.23	225.37	230.27	3.62		3.56	2.7	5.16	0
Trib 1	Reach 1	175 HWY 11 n&s - Sou Culvert #1	200yr 24hr SCS	225.59	225.59	225.46	225.59	230.27	4.58		3.75	2.94	5.44	0
Trib 2	Reach 1	671 Railway - North Group #1	Timmins	229.34	229.34	227.79	229.34	230.11	2.15		0.05	0.84	0.84	0
Trib 2	Reach 1	671 Railway - North Group #1	2yr 24hr SCS	227.14	227.14	227.02	227.14	230.11	0.12		0	0.4	0.15	0
Trib 2	Reach 1	671 Railway - North Group #1	5yr 24hr SCS	227.24	227.24	227.11	227.24	230.11	0.24		0.01	0.54	0.24	0
Trib 2	Reach 1	671 Railway - North Group #1	10yr 24hr SCS	227.35	227.35	227.2	227.35	230.11	0.39		0.01	0.65	0.33	0
Trib 2	Reach 1	671 Railway - North Group #1	25yr 24hr SCS	227.53	227.53	227.32	227.53	230.11	0.64		0.02	0.71	0.43	0
Trib 2	Reach 1	671 Railway - North Group #1	50yr 24hr SCS	227.72	227.72	227.41	227.72	230.11	0.87		0.02	0.71	0.48	0
Trib 2	Reach 1	671 Railway - North Group #1	100yr 24hr SCS	227.96	227.96	227.49	227.96	230.11	1.12		0.02	0.67	0.51	0
Trib 2	Reach 1	671 Railway - North Group #1	200yr 24hr SCS	228.31	228.31	227.59	228.31	230.11	1.44		0.02	0.65	0.57	0
Trib 2	Reach 1	617 HWY 11 N - North Group #1	Timmins	229.29	229.29	228.2	229.29	231.14	2.15		0.79	2.74	2.74	0
Trib 2	Reach 1	617 HWY 11 N - North Group #1	2yr 24hr SCS	227.13	227.13	226.81	227.13	231.14	0.12		0	0.26	0.19	0
Trib 2	Reach 1	617 HWY 11 N - North Group #1	5yr 24hr SCS	227.23	227.23	226.92	227.23	231.14	0.24		0.01	0.43	0.34	0
Trib 2	Reach 1	617 HWY 11 N - North Group #1	10yr 24hr SCS	227.33	227.33	227.03	227.33	231.14	0.39		0.03	0.61	0.51	0
Trib 2	Reach 1	617 HWY 11 N - North Group #1	25yr 24hr SCS	227.51	227.51	227.2	227.51	231.14	0.64		0.07	0.85	0.81	0
Trib 2	Reach 1	617 HWY 11 N - North Group #1	50yr 24hr SCS	227.7	227.7	227.33	227.7	231.14	0.87		0.13	1.11	1.11	0
Trib 2	Reach 1	617 HWY 11 N - North Group #1	100yr 24hr SCS	227.93	227.93	227.48	227.93	231.14	1.12		0.21	1.43	1.43	0
Trib 2	Reach 1	617 HWY 11 N - North Group #1	200yr 24hr SCS	228.28	228.28	227.66	228.28	231.14	1.44		0.36	1.83	1.83	0
Trib 2	Reach 1	586 HWY 11 S - North Group #1	Timmins	228.5	228.5	227.97	228.5	230.15	2.15		0.83	2.74	2.74	0
Trib 2	Reach 1	586 HWY 11 S - North Group #1	2yr 24hr SCS	227.12	227.12	226.58	227.12	230.15	0.12		0	0.18	0.2	0
Trib 2	Reach 1	586 HWY 11 S - North Group #1	5yr 24hr SCS	227.22	227.22	226.69	227.22	230.15	0.24		0.01	0.33	0.35	0
Trib 2	Reach 1	586 HWY 11 S - North Group #1	10yr 24hr SCS	227.3	227.3	226.81	227.3	230.15	0.39		0.03	0.5	0.53	0
Trib 2	Reach 1	586 HWY 11 S - North Group #1	25yr 24hr SCS	227.44	227.44	226.97	227.44	230.15	0.64		0.08	0.81	0.82	0
Trib 2	Reach 1	586 HWY 11 S - North Group #1	50yr 24hr SCS	227.57	227.57	227.11	227.57	230.15	0.87		0.14	1.11	1.11	0
Trib 2	Reach 1	586 HWY 11 S - North Group #1	100yr 24hr SCS	227.72	227.72	227.25	227.72	230.15	1.12		0.23	1.43	1.43	0
Trib 2	Reach 1	586 HWY 11 S - North Group #1	200yr 24hr SCS	227.93	227.93	227.44	227.93	230.15	1.44		0.37	1.83	1.83	0

Lansdowne Creek Structures Inventory

		Survey Date:	May 17, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Marina Culvert	**Municipality:**	Callander Bay
Structure Number:	1	**Date of Construction:**	n/a
Coordinates E:	626015.4650m	**Temporary Benchmark**	
N:	5119987.5420m	**Elev.:** n/a	
Structure Shape:	culvert	n/a	
Structure Material:	n/a		

Opening Characteristics			
Cell Shape:	n/a	**Cells:**	1
Material:	n/a	**Rise:**	n/a
Diameter:	n/a	**Span:**	n/a
Pier Configuration		**Number:**	n/a
Width:	n/a	**Location:**	n/a

Sag Elevation:	n/a		
Railing Height:	n/a	**Length:**	n/a
Elev. Left:	n/a	**Elev. Right:**	n/a
Length of Culvert/Crossing:	n/a		
Skew Angle:	n/a	**Rise:**	n/a
Opening Face Width:	n/a		

End Treatment:
n/a

Upstream Treatment:
n/a

Downstream Treatment:
n/a

Upstream Elevations:		**Downstream Elevations:**	
Invert	n/a	**Invert**	n/a
Obvert	n/a	**Obvert**	196.12
Top	n/a	**Top**	196.58

Comments: Hidden under a deck

Description: Looking u/s

Description: Looking at right

Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

Survey Date:	May 17, 2023		
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Main Street	**Municipality:**	Callander Bay
Structure Number:	2	**Date of Construction:**	n/a
Coordinates E:	626193.2520m	**Temporary Benchmark**	
N:	5120037.1270m	**Elev.**	n/a
Structure Shape:	culvert	n/a	
Structure Material:	Steel Corrugated Pipe		

Opening Characteristics							
Cell Shape:	Circular	**Cells:**	1				
Material:	n/a	**Rise:**	1.2m	**Sag Elevation:**	n/a		
Diameter:	1200mm	**Span:**	1.2m	**Railing Height:**	n/a	**Length:**	n/a
Pier Configuration		**Number:**	n/a	**Elev. Left:**	n/a	**Elev. Right:**	n/a
Width:	n/a	**Location:**	n/a	**Length of Culvert/Crossing:**	n/a		
End Treatment:				**Skew Angle:**	n/a	**Rise:**	n/a
Headwall				**Opening Face Width:**	n/a		
Upstream Treatment:				**Downstream Treatment:**			
n/a				n/a			

Upstream Elevations:		**Downstream Elevations:**	
Invert	200.42	**Invert**	n/a
Obvert	201.68	**Obvert**	n/a
Top	202.30	**Top**	n/a

Comments:

Description: Looking u/s

Description: Looking at u/s face

Description: Looking at right bank

Description: deck on right bank

Lansdowne Creek Structures Inventory

		Survey Date:	May 17, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	High Street and Main Street	**Municipality:**	Callander Bay
Structure Number:	3	**Date of Construction:**	n/a
Coordinates E:	626213.897m	**Temporary Benchmark**	
N:	626213.897m	**Elev.** n/a	
Structure Shape:	culvert	n/a	
Structure Material:	Corrugated Steel Pipe		

Opening Characteristics							
Cell Shape:	Circular	**Cells:**	1				
Material:	n/a	**Rise:**	1m	**Sag Elevation:**	n/a		
Diameter:	1000 mm	**Span:**	1m	**Railing Height:**	n/a	**Length:**	n/a
Pier Configuration		**Number:**	n/a	**Elev. Left:**	n/a	**Elev. Right:**	n/a
Width:	n/a	**Location:**	n/a	**Length of Culvert/Crossing:**	25m		
End Treatment:				**Skew Angle:**	n/a	**Rise:**	n/a
Gabion				**Opening Face Width:**	n/a		

Upstream Treatment:		**Downstream Treatment:**	
Gabion on the left		n/a	
Upstream Elevations:		**Downstream Elevations:**	
Invert	201.95	**Invert**	201.07
Obvert	202.99	**Obvert**	202.15
Top	n/a	**Top**	n/a

Comments:

Description: Looking u/s

Description: Looking at u/s face

Description: Looking d/s

Description: Looking at d/s face

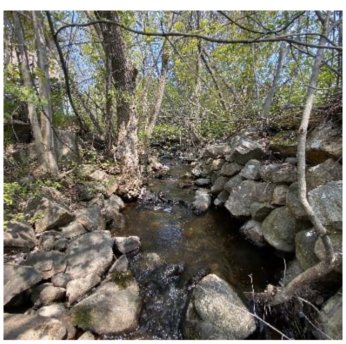
Lansdowne Creek Structures Inventory

		Survey Date:	May 17, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	High Street	**Municipality:**	Callander Bay
Structure Number:	4	**Date of Construction:**	n/a
Coordinates **E:**	626240.7610m	**Temporary Benchmark**	
N:	5120055.4860m	**Elev.** n/a	
Structure Shape:	culvert	n/a	
Structure Material:	HDPE		

Opening Characteristics			
Cell Shape: Circular	**Cells:** 1	**Sag Elevation:**	204.42
Material: n/a	**Rise:** 1.1m	**Railing Height:** 0.9m	**Length:** 3.7m
Diameter: 1100 mm	**Span:** 1.1m	**Elev. Left:** 205.39	**Elev. Right:** 205.31
Pier Configuration	**Number:** n/a	**Length of Culvert/Crossing:**	18m
Width: n/a	**Location:** n/a	**Skew Angle:** 9°	**Rise:** n/a
End Treatment: Gabion		**Opening Face Width:**	n/a
Upstream Treatment: n/a		**Downstream Treatment:** Gabion on the left	

Upstream Elevations:		**Downstream Elevations:**	
Invert	202.77	**Invert**	202.56
Obvert	203.92	**Obvert**	203.68
Top	204.10	**Top**	203.75

Comments:



Description: Looking u/s

Description: Looking at u/s face

Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

Surveyor:	Eh Klay Law	Survey Date:	May 17, 2023
Street Location:	Lansdowne Street	Watercourse:	Lansdowne Creek
Structure Number:	5	Municipality:	Callander Bay
Coordinates E:	626286.683m	Date of Construction:	n/a
N:	5120158.434m	Temporary Benchmark	
Structure Shape:	culvert	Elev.	208.63
Structure Material:	Concrete	n/a	

Opening Characteristics

Cell Shape:	Box	Cells:	1
Material:	n/a	Rise:	1.5m
Diameter:	n/a	Span:	2.2m
Pier Configuration		Number:	n/a
Width:	n/a	Location:	n/a

Sag Elevation:	208.75		
Railing Height:	0.9m	Length:	8m
Elev. Left:	209.49	Elev. Right:	209.47
Length of Culvert/Crossing:	18m		
Skew Angle:	n/a	Rise:	n/a
Opening Face Width:	n/a		

End Treatment:
n/a

Upstream Treatment:
n/a

Downstream Treatment:
n/a

Upstream Elevations:		Downstream Elevations:	
Invert	206.62	Invert	206.59
Obvert	208.10	Obvert	208.08
Top	208.67	Top	208.79

Comments:

Description: Looking u/s

Description: Looking at u/s face

Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

Survey Date:	May 16, 2023
Surveyor:	Eh Klay Law
Watercourse:	Lansdowne Creek
Street Location:	King Street
Municipality:	Callander Bay
Structure Number:	6
Date of Construction:	n/a
Coordinates E:	626274.8030m
Coordinates N:	5120236.6110m
Structure Shape:	culvert
Structure Material:	Concrete

Temporary Benchmark

Elev.	n/a

n/a

Opening Characteristics

Cell Shape:	Circular	**Cells:**	1
Material:	n/a	**Rise:**	1.2m
Diameter:	1200mm	**Span:**	1.2m
Pier Configuration		**Number:**	n/a
Width:	n/a	**Location:**	n/a

Sag Elevation:	209.85		
Railing Height:	0.8m	**Length:**	14m
Elev. Left:	211.06	**Elev. Right:**	211.08
Length of Culvert/Crossing:	23.6m		
Skew Angle:	44°	**Rise:**	n/a
Opening Face Width:	n/a		

End Treatment:
n/a

Upstream Treatment:
n/a

Downstream Treatment:
n/a

Upstream Elevations:		**Downstream Elevations:**	
Invert	207.86	**Invert**	207.64
Obvert	209.41	**Obvert**	208.91
Top	209.43	**Top**	209

Comments: Metered to slope culvert

Description: Looking u/s

Description: Looking at u/s face

Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

Survey Date:	May 16, 2023		
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Toronto Street	**Municipality:**	Callander Bay
Structure Number:	7	**Date of Construction:**	n/a
Coordinates E:	626305.6450m	**Temporary Benchmark**	
N:	5120264.8890m	**Elev.**	n/a
Structure Shape:	culvert	n/a	
Structure Material:	Concrete		

Opening Characteristics

Cell Shape:	Circular	**Cells:**	1
Material:	n/a	**Rise:**	1.22m
Diameter:	1220mm	**Span:**	1.22m
Pier Configuration		**Number:**	n/a
Width:	n/a	**Location:**	n/a

Sag Elevation:	210.08		
Railing Height:	n/a	**Length:**	n/a
Elev. Left:	n/a	**Elev. Right:**	n/a
Length of Culvert/Crossing:	16m		
Skew Angle:	47°	**Rise:**	n/a
Opening Face Width:	n/a		

End Treatment:
Rap-Rap/Vegetated Riverstone

Upstream Treatment:
Rap-Rap/Vegetated Riverstone

Downstream Treatment:
Rap-Rap/Vegetated Riverstone

Upstream Elevations:		**Downstream Elevations:**	
Invert	208.32	**Invert**	208.28
Obvert	209.78	**Obvert**	209.64
Top	209.85	**Top**	209.84

Comments:

Description: Looking u/s

Description: Looking at u/s face

Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

		Survey Date:	May 17, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Pedestrian Bridge 2	**Municipality:**	Callander Bay
Structure Number:	8	**Date of Construction:**	n/a
Coordinates E:	626347.6660m	**Temporary Benchmark**	
N:	5120275.7930m	**Elev.:** n/a	
Structure Shape:	bridge / culvert	n/a	
Structure Material:	concrete / wood		

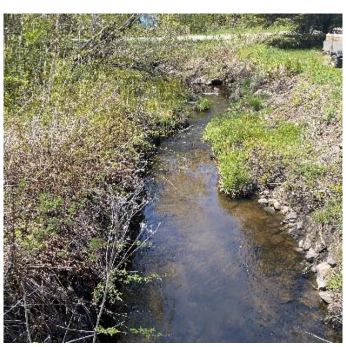
Opening Characteristics							
Cell Shape:	circular	**Cells:**	1				
Material:	n/a	**Rise:**	1.05m	**Sag Elevation:**		209.98	
Diameter:	1050mm	**Span:**	1.05m	**Railing Height:**	1m	**Length:**	4m
Pier Configuration		**Number:**	n/a	**Elev. Left:**	211.37	**Elev. Right:**	211.20
Width:	n/a	**Location:**	n/a	**Length of Culvert/Crossing:**		6.5m	
End Treatment:				**Skew Angle:**	n/a	**Rise:**	n/a
n/a				**Opening Face Width:**		n/a	
Upstream Treatment:				**Downstream Treatment:**			
n/a				n/a			

Upstream Elevations:		**Downstream Elevations:**	
Invert	208.42	**Invert**	208.41
Obvert	209.30	**Obvert**	209.40
Top	210.20	**Top**	210.61

Comments:

Description: Looking u/s

Description: Looking at u/s face



Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

		Survey Date:	May 17, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Pedestrian Bridge 1	**Municipality:**	Callander Bay
Structure Number:	9	**Date of Construction:**	n/a
Coordinates E:	626352.9810m	**Temporary Benchmark**	
N:	5120276.4610m	**Elev.**	n/a
Structure Shape:	bridge	n/a	
Structure Material:	wood		

Opening Characteristics			
Cell Shape:	rectangle	**Cells:**	1
Material:	n/a	**Rise:**	1.4m
Diameter:	n/a	**Span:**	5.3m
Pier Configuration		**Number:**	n/a
Width:	n/a	**Location:**	n/a

Sag Elevation:	209.95		
Railing Height:	0.8m	**Length:**	4m
Elev. Left:	211.03	**Elev. Right:**	210.87
Length of Culvert/Crossing:	0.9m		
Skew Angle:	n/a	**Rise:**	n/a
Opening Face Width:	n/a		

End Treatment: HDPE filled with dirt as abutment on the right side of the

Upstream Treatment:	**Downstream Treatment:**
HDPE filled with dirt as abutment	HDPE filled with dirt as abutment

Upstream Elevations:		**Downstream Elevations:**	
Invert	208.62	**Invert**	208.40
Obvert	210.01	**Obvert**	209.91
Top	210.02	**Top**	210.07

Comments: balcony/deck sit on the left bank

Description: Looking u/s

Description: Looking at u/s face

Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

Surveyor:	Eh Klay Law		
Street Location:	Driveway (300 Lansdowne)		
Structure Number:	10		
Coordinates	**E:**	626384.5590m	
	N:	5120274.2320m	
Structure Shape:	culvert		
Structure Material:	HDPE		
Opening Characteristics			
Cell Shape:	Circular	**Cells:**	1
Material:	n/a	**Rise:**	1.2m
Diameter:	1200mm	**Span:**	1.2m
Pier Configuration		**Number:**	n/a
Width:	n/a	**Location:**	n/a
End Treatment:			
n/a			
Upstream Treatment:			
n/a			
Upstream Elevations:			
Invert	209.01		
Obvert	209.87		
Top	210.75		

Survey Date:	May 17, 2023		
Watercourse:	Lansdowne Creek		
Municipality:	Callander Bay		
Date of Construction:	n/a		
Temporary Benchmark			
Elev.	n/a		
n/a			
Sag Elevation:	209.09		
Railing Height:	n/a	**Length:**	n/a
Elev. Left:	n/a	**Elev. Right:**	n/a
Length of Culvert/Crossing:	13m		
Skew Angle:	n/a	**Rise:**	n/a
Opening Face Width:	n/a		
Downstream Treatment:			
n/a			
Downstream Elevations:			
Invert	208.80		
Obvert	209.91		
Top	210.08		

Comments: Wooden dam infront of the culvert inlet. Owner has a couple small ponds in his property

Description: Looking u/s

Description: Looking at u/s face

Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

Survey Date:	May 17, 2023				
Surveyor:	Eh Klay Law		Watercourse:	Lansdowne Creek	
Street Location:	Pedestrian Bridge (350 Lans		Municipality:	Callander Bay	
Structure Number:	11		Date of Construction:	n/a	
Coordinates E:	626429.0000m		Temporary Benchmark		
N:	5120267.5000m		Elev.	n/a	
Structure Shape:	bridge		n/a		
Structure Material:	Wood				

Opening Characteristics

Cell Shape:	Irregular	Cells:	1
Material:	n/a	Rise:	1m-1.5m
Diameter:	n/a	Span:	4.7m

Sag Elevation:	209.98		
Railing Height:	n/a	Length:	n/a
Elev. Left:	n/a	Elev. Right:	n/a
Length of Culvert/Crossing:	1m		
Skew Angle:	n/a	Rise:	n/a
Opening Face Width:	n/a		

Pier Configuration		Number:	n/a
Width:	n/a	Location:	n/a

End Treatment:
n/a

Upstream Treatment:
n/a

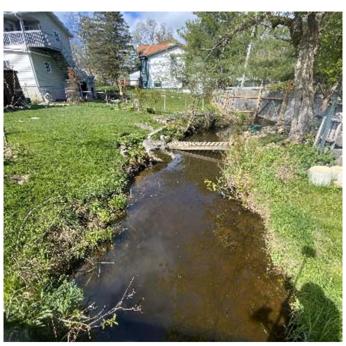
Downstream Treatment:
n/a

Upstream Elevations:		Downstream Elevations:	
Invert	208.77	Invert	208.71
Obvert	209.86	Obvert	209.73
Top	210.10	Top	210.15

Comments:

Description: Looking u/s

Description: Looking at u/s face



Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

		Survey Date:	May 17, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Pedestrian Bridge (368 Lans	**Municipality:**	Callander Bay
Structure Number:	12	**Date of Construction:**	n/a
Coordinates **E:**	626438.8630m	**Temporary Benchmark**	
N:	5120270.5200m	**Elev.** n/a	
Structure Shape:	bridge	n/a	
Structure Material:	Wood		

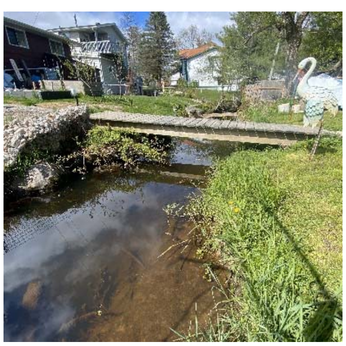
Opening Characteristics							
Cell Shape:	Irregular	**Cells:**	1				
Material:	n/a	**Rise:**	1m-2m	**Sag Elevation:**		n/a	
Diameter:	n/a	**Span:**	4.3m	**Railing Height:**	n/a	**Length:**	n/a
Pier Configuration		**Number:**	n/a	**Elev. Left:**	n/a	**Elev. Right:**	n/a
Width:	n/a	**Location:**	n/a	**Length of Culvert/Crossing:**		1.2m	
End Treatment:				**Skew Angle:**	n/a	**Rise:**	n/a
n/a				**Opening Face Width:**		n/a	
Upstream Treatment:				**Downstream Treatment:**			
n/a				n/a			

Upstream Elevations:		**Downstream Elevations:**	
Invert	208.99	**Invert**	208.99
Obvert	210.54	**Obvert**	210.55
Top	210.78	**Top**	210.69

Comments: Owner said that he will be removing the bridge and reaplce it with just a simple wooden boards for crossing. Owner put a steel rack on the bridge to prevent people walking on the bridge.


Description: Looking u/s


Description: Looking at u/s face


Description: Looking d/s


Description: Looking at d/s face

Lansdowne Creek Structures Inventory

		Survey Date:	May 17, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Yard Crossing (408 Lansdow	**Municipality:**	Callander Bay
Structure Number:	13	**Date of Construction:**	n/a
Coordinates **E:**	626494.9620m	**Temporary Benchmark**	
N:	5120302.3020m	**Elev.** n/a	
Structure Shape:	culvert	n/a	
Structure Material:	Corrugated Steel Pipe		

Opening Characteristics							
Cell Shape:	Circular	**Cells:**	1				
Material:	n/a	**Rise:**	1m	**Sag Elevation:**	209.94		
Diameter:	1000mm	**Span:**	1m	**Railing Height:**	n/a	**Length:**	n/a
Pier Configuration		**Number:**	n/a	**Elev. Left:**	n/a	**Elev. Right:**	n/a
Width:	n/a	**Location:**	n/a	**Length of Culvert/Crossing:**	3.7m		
End Treatment:				**Skew Angle:**	n/a	**Rise:**	n/a
Failing retaining wall in the creek				**Opening Face Width:**	n/a		
Upstream Treatment:				**Downstream Treatment:**			
n/a				n/a			

Upstream Elevations:		**Downstream Elevations:**	
Invert	209.22	**Invert**	209.10
Obvert	210.14	**Obvert**	210.23
Top	n/a	**Top**	n/a

Comments:

Description: Looking u/s

Description: Looking at u/s face

Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

		Survey Date:	May 16, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Callander Bay Drive	**Municipality:**	Callander Bay
Structure Number:	14	**Date of Construction:**	n/a
Coordinates E:	626579.004m	**Temporary Benchmark**	
N:	5120339.222m	**Elev.** 210.80	
Structure Shape:	culvert	CC - Located on southeast corner of the culvert	
Structure Material:	Concrete		

Opening Characteristics							
Cell Shape:	Box	**Cells:**	1				
Material:	n/a	**Rise:**	1m	**Sag Elevation:**	n/a		
Diameter:	n/a	**Span:**	2m	**Railing Height:**	n/a	**Length:**	n/a
Pier Configuration		**Number:**	n/a	**Elev. Left:**	n/a	**Elev. Right:**	n/a
Width:	n/a	**Location:**	n/a	**Length of Culvert/Crossing:**	39m		
End Treatment:				**Skew Angle:**	n/a	**Rise:**	n/a
n/a				**Opening Face Width:**	n/a		
Upstream Treatment:				**Downstream Treatment:**			
n/a				n/a			

Upstream Elevations:		**Downstream Elevations:**	
Invert	209.20	**Invert**	209.42
Obvert	210.44	**Obvert**	210.46
Top	210.71	**Top**	210.73

Comments:

Description: Looking u/s

Description: Looking at u/s face

Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

		Survey Date:	May 16, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Lansdowne Street	**Municipality:**	Callander Bay
Structure Number:	15	**Date of Construction:**	n/a
Coordinates E:	626613.312m	**Temporary Benchmark**	
N:	5120300.175m	**Elev.** n/a	
Structure Shape:	culvert	n/a	
Structure Material:	Concrete		

Opening Characteristics							
Cell Shape:	Circular	**Cells:**	1				
Material:	n/a	**Rise:**	0.9m	**Sag Elevation:**		n/a	
Diameter:	900mm	**Span:**	0.9m	**Railing Height:**	n/a	**Length:**	n/a
Pier Configuration		**Number:**	n/a	**Elev. Left:**	n/a	**Elev. Right:**	n/a
Width:	n/a	**Location:**	n/a	**Length of Culvert/Crossing:**		27m	
End Treatment:				**Skew Angle:**	n/a	**Rise:**	n/a
n/a				**Opening Face Width:**		n/a	

Upstream Treatment:		**Downstream Treatment:**	
n/a		n/a	
Upstream Elevations:		**Downstream Elevations:**	
Invert	210.02	**Invert**	209.79
Obvert	210.84	**Obvert**	210.49
Top	211.07	**Top**	210.58

Comments:

Description: Looking u/s

Description: Looking at u/s face

Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

		Survey Date:	May 16, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Eglinton Road North	**Municipality:**	Callander Bay
Structure Number:	16	**Date of Construction:**	n/a
Coordinates E:	626695.612m	**Temporary Benchmark**	
N:	5120402.817m	**Elev.**	n/a
Structure Shape:	culvert	n/a	
Structure Material:	Corrugated Steel Pipe		

Opening Characteristics							
Cell Shape:	Circular	**Cells:**	1				
Material:	n/a	**Rise:**	1.4m	**Sag Elevation:**	211.50		
Diameter:	1400mm	**Span:**	1.4m	**Railing Height:**	n/a	**Length:**	n/a
Pier Configuration		**Number:**	n/a	**Elev. Left:**	n/a	**Elev. Right:**	n/a
Width:	n/a	**Location:**	n/a	**Length of Culvert/Crossing:**		12.2m	
End Treatment:				**Skew Angle:**	n/a	**Rise:**	n/a
n/a				**Opening Face Width:**		n/a	

Upstream Treatment:	**Downstream Treatment:**
n/a	n/a

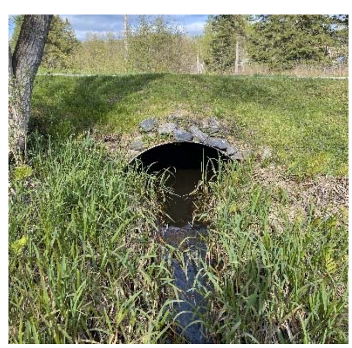
Upstream Elevations:		**Downstream Elevations:**	
Invert	209.90	**Invert**	210.06
Obvert	211.12	**Obvert**	210.94
Top	n/a	**Top**	n/a

Comments:

Description: Looking u/s

Description: Looking at u/s face

Description: Looking d/s



Description: Looking at d/s face

Lansdowne Creek Structures Inventory

		Survey Date:	May 16, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Driveway (1786 Lansdowne	**Municipality:**	Callander Bay
Structure Number:	17	**Date of Construction:**	n/a
Coordinates E:	626800.9560m	**Temporary Benchmark**	
N:	5120471.4490m	**Elev.** n/a	
Structure Shape:	culvert	n/a	
Structure Material:	Corrugated Steel Pipe		

Opening Characteristics							
Cell Shape:	Circular	**Cells:**	1				
Material:	n/a	**Rise:**	1.1m	**Sag Elevation:**	212.37		
Diameter:	1100mm	**Span:**	1.1m	**Railing Height:**	n/a	**Length:**	n/a
Pier Configuration		**Number:**	n/a	**Elev. Left:**	n/a	**Elev. Right:**	n/a
Width:	n/a	**Location:**	n/a	**Length of Culvert/Crossing:**	8m		
End Treatment:				**Skew Angle:**	n/a	**Rise:**	n/a
n/a				**Opening Face Width:**	n/a		
Upstream Treatment:				**Downstream Treatment:**			
n/a				n/a			

Upstream Elevations:		**Downstream Elevations:**	
Invert	210.95	**Invert**	210.87
Obvert	212.11	**Obvert**	211.96
Top	212.48	**Top**	212.23

Comments:

Description: Looking u/s

Description: Looking at u/s face

Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

		Survey Date:	May 16, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Driveway (1772 Lansdowne	**Municipality:**	Callander Bay
Structure Number:	18	**Date of Construction:**	n/a
Coordinates E:	626835.0790m	**Temporary Benchmark**	
N:	5120531.6340m	**Elev.** n/a	
Structure Shape:	culvert	n/a	
Structure Material:	Concrete		

Opening Characteristics			
Cell Shape:	Circular	**Cells:**	1
Material:	n/a	**Rise:**	1m
Diameter:	1000mm	**Span:**	1m
Pier Configuration		**Number:**	n/a
Width:	n/a	**Location:**	n/a

Sag Elevation:	213.32		
Railing Height:	n/a	**Length:**	n/a
Elev. Left:	n/a	**Elev. Right:**	n/a
Length of Culvert/Crossing:	6.5m		
Skew Angle:	n/a	**Rise:**	n/a
Opening Face Width:	n/a		

End Treatment:
n/a

Upstream Treatment:
n/a

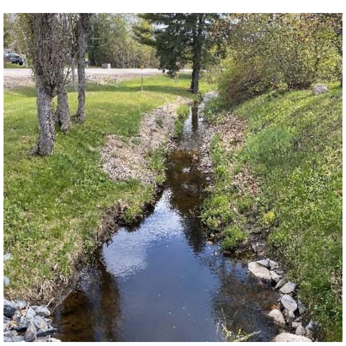
Downstream Treatment:
n/a

Upstream Elevations:		**Downstream Elevations:**	
Invert	211.23	**Invert**	211.35
Obvert	212.26	**Obvert**	212.23
Top	212.52	**Top**	212.37

Comments:

Description: Looking u/s

Description: Looking at u/s face



Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

		Survey Date:	May 16, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Driveway (1770 Lansdowne	**Municipality:**	Callander Bay
Structure Number:	19	**Date of Construction:**	n/a
Coordinates **E:**	626838.3160m	**Temporary Benchmark**	
N:	5120542.0140m	**Elev.** n/a	
Structure Shape:	culvert	n/a	
Structure Material:	Corrugated Steel Pipe		

Opening Characteristics							
Cell Shape:	Circular	**Cells:**	1				
Material:	n/a	**Rise:**	1.2m	**Sag Elevation:**	213.32		
Diameter:	1100	**Span:**	1.1m	**Railing Height:**	1	**Length:**	6
Pier Configuration		**Number:**	n/a	**Elev. Left:**	213.40	**Elev. Right:**	213.37
Width:	n/a	**Location:**	n/a	**Length of Culvert/Crossing:**	9m		
End Treatment:				**Skew Angle:**	n/a	**Rise:**	n/a
n/a				**Opening Face Width:**	n/a		
Upstream Treatment:				**Downstream Treatment:**			
n/a				n/a			

Upstream Elevations:		**Downstream Elevations:**	
Invert	211.59	**Invert**	211.66
Obvert	212.90	**Obvert**	212.78
Top	213.48	**Top**	213.41

Comments:

Description: Looking u/s

Description: Looking at u/s face

Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

		Survey Date:	May 16, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Driveway (1764 Lansdowne	**Municipality:**	Callander Bay
Structure Number:	20	**Date of Construction:**	n/a
Coordinates E:	626851.560m	**Temporary Benchmark**	
N:	5120569.059m	**Elev.**	n/a
Structure Shape:	culvert	n/a	
Structure Material:	Concrete		

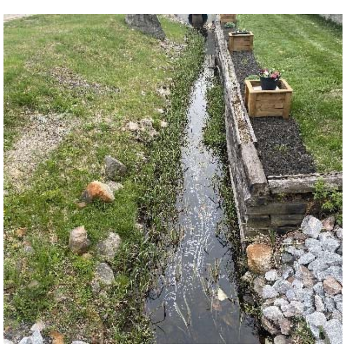
Opening Characteristics							
Cell Shape:	Circular	**Cells:**	1				
Material:	n/a	**Rise:**	1.2m	**Sag Elevation:**		n/a	
Diameter:	1200mm	**Span:**	1.2m	**Railing Height:**	0.5	**Length:**	2.7
Pier Configuration		**Number:**	n/a	**Elev. Left:**	214.02	**Elev. Right:**	214.04
Width:	n/a	**Location:**	n/a	**Length of Culvert/Crossing:**		8.2m	
End Treatment:				**Skew Angle:**	n/a	**Rise:**	n/a
n/a				**Opening Face Width:**		n/a	
Upstream Treatment:				**Downstream Treatment:**			
n/a				n/a			

Upstream Elevations:		**Downstream Elevations:**	
Invert	211.74	**Invert**	211.49
Obvert	212.84	**Obvert**	212.67
Top	n/a	**Top**	n/a

Comments: Planters as railing.

Description: Looking u/s

Description: Looking at u/s face



Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

		Survey Date:	May 15, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Pedestrian Bridge (1764 Lan	**Municipality:**	Callander Bay
Structure Number:	21	**Date of Construction:**	n/a
Coordinates E:	626857.4580m	**Temporary Benchmark**	
N:	5120581.3770m	**Elev.**	n/a
Structure Shape:	bridge	n/a	
Structure Material:	Wood		

Opening Characteristics							
Cell Shape:	Irregular	**Cells:**	1				
Material:	n/a	**Rise:**	n/a	**Sag Elevation:**		n/a	
Diameter:	n/a	**Span:**	6m	**Railing Height:**	0.9	**Length:**	5
Pier Configuration		**Number:**	n/a	**Elev. Left:**	214.59	**Elev. Right:**	214.55
Width:	n/a	**Location:**	n/a	**Length of Culvert/Crossing:**		1.4	
End Treatment:				**Skew Angle:**	n/a	**Rise:**	n/a
Wooden retaining wall on the Right				**Opening Face Width:**		n/a	
Upstream Treatment:				**Downstream Treatment:**			
Retaining wall				Retaining wall			

Upstream Elevations:		**Downstream Elevations:**	
Invert	211.74	**Invert**	211.79
Obvert	213.51	**Obvert**	213.33
Top	213.67	**Top**	213.70

Comments:

Description: Looking u/s

Description: Looking at u/s face

Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

		Survey Date:	May 15, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Driveway (1752 Lansdowne	**Municipality:**	Callander Bay
Structure Number:	22	**Date of Construction:**	n/a
Coordinates E:	626875.077m	**Temporary Benchmark**	
N:	5120619.329m	**Elev.**	n/a
Structure Shape:	culvert	n/a	
Structure Material:	Corrugated Steel Pipe		

Opening Characteristics

Cell Shape:	Circular	**Cells:**	1				
Material:	n/a	**Rise:**	1.6m	**Sag Elevation:**	214.18		
Diameter:	1600mm	**Span:**	1.6m	**Railing Height:**	n/a	**Length:**	n/a
Pier Configuration		**Number:**	n/a	**Elev. Left:**	n/a	**Elev. Right:**	n/a
Width:	n/a	**Location:**	n/a	**Length of Culvert/Crossing:**	15		
End Treatment:				**Skew Angle:**	n/a	**Rise:**	n/a
n/a				**Opening Face Width:**	n/a		

Upstream Treatment:	**Downstream Treatment:**
n/a	n/a

Upstream Elevations:		**Downstream Elevations:**	
Invert	212.33	**Invert**	212.26
Obvert	213.94	**Obvert**	213.57
Top	n/a	**Top**	n/a

Comments:

Description: Looking u/s

Description: Looking at u/s face

Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

Surveyor:	Eh Klay Law		
Street Location:	Highway 94		
Structure Number:	23		
Coordinates	**E:**	626892.8290m	
	N:	5120641.3590m	
Structure Shape:	culvert		
Structure Material:	Concrete		
Opening Characteristics			
Cell Shape:	Box	**Cells:**	1
Material:	n/a	**Rise:**	1m
Diameter:	n/a	**Span:**	2.5m
Pier Configuration		**Number:**	n/a
Width:	n/a	**Location:**	n/a
End Treatment:	n/a		
Upstream Treatment:	n/a		
Upstream Elevations:			
Invert	212.72		
Obvert	213.75		
Top	214.34		

Survey Date:	May 15, 2023		
Watercourse:	Lansdowne Creek		
Municipality:	Callander Bay		
Date of Construction:	n/a		
Temporary Benchmark			
Elev.	n/a		
n/a			
Sag Elevation:	214.89		
Railing Height:	n/a	**Length:**	n/a
Elev. Left:	n/a	**Elev. Right:**	n/a
Length of Culvert/Crossing:	12.4		
Skew Angle:	1°	**Rise:**	n/a
Opening Face Width:	n/a		
Downstream Treatment:	n/a		
Downstream Elevations:			
Invert	212.49		
Obvert	213.63		
Top	214.22		

Comments: failing and eroding box culvert.

Description: Looking u/s

Description: Looking at u/s face

Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

		Survey Date:	May 16, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Pedestrian Bridge (1743 Lan	**Municipality:**	Callander Bay
Structure Number:	24	**Date of Construction:**	n/a
Coordinates **E:**	627027.5790m	**Temporary Benchmark**	
N:	5120676.7810m	**Elev.** n/a	
Structure Shape:	bridge	n/a	
Structure Material:	Wood		
Opening Characteristics			
Cell Shape: Irregular	**Cells:** 1		
Material: n/a	**Rise:** 1.4m	**Sag Elevation:**	214.05
Diameter: n/a	**Span:** 6.7m	**Railing Height:** n/a	**Length:** n/a
Pier Configuration	**Number:** n/a	**Elev. Left:** n/a	**Elev. Right:** n/a
Width: n/a	**Location:** n/a	**Length of Culvert/Crossing:**	2.4
End Treatment:		**Skew Angle:** n/a	**Rise:** n/a
Wooden Gabion as butment on the right		**Opening Face Width:**	n/a
Upstream Treatment:		**Downstream Treatment:**	
Wooden Gabion on the right		Wooden Gabion on the right	
Upstream Elevations:		**Downstream Elevations:**	
Invert	212.35	**Invert**	212.43
Obvert	213.75	**Obvert**	213.84
Top	214.23	**Top**	214.26
Comments:			

Description: Looking u/s

Description: Looking at u/s face

Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

		Survey Date:	May 16, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Highway 11 Southbound 2	**Municipality:**	Callander Bay
Structure Number:	25	**Date of Construction:**	n/a
Coordinates **E:**	627279.133m	**Temporary Benchmark**	
N:	5121228.930m	**Elev.** n/a	
Structure Shape:	culvert	n/a	
Structure Material:	Concrete		
Opening Characteristics			
Cell Shape: Circular	**Cells:** 1		
Material: n/a	**Rise:** 1m	**Sag Elevation:**	n/a
Diameter: 1000mm	**Span:** 1m	**Railing Height:** 0.8	**Length:** n/a
Pier Configuration	**Number:** n/a	**Elev. Left:** 230.76	**Elev. Right:** 230.82
Width: n/a	**Location:** n/a	**Length of Culvert/Crossing:**	40
End Treatment:		**Skew Angle:** 45°	**Rise:** n/a
n/a		**Opening Face Width:**	n/a
Upstream Treatment:		**Downstream Treatment:**	
n/a		n/a	
Upstream Elevations:		**Downstream Elevations:**	
Invert	226.76	**Invert**	226.42
Obvert	227.32	**Obvert**	227.40
Top	227.56	**Top**	227.66
Comments:			


Description: Looking u/s


Description: Looking at u/s face


Description: Looking d/s


Description: Looking at d/s face

Lansdowne Creek Structures Inventory

		Survey Date:	May 16, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Highway 11 Northbound 2	**Municipality:**	Callander Bay
Structure Number:	26	**Date of Construction:**	n/a
Coordinates **E:**	627316.550m	**Temporary Benchmark**	
N:	5121254.042m	**Elev.** n/a	
Structure Shape:	culvert	n/a	
Structure Material:	Concrete		

Opening Characteristics							
Cell Shape:	Circular	**Cells:**	1				
Material:	n/a	**Rise:**	1m	**Sag Elevation:**		n/a	
Diameter:	1000mm	**Span:**	1m	**Railing Height:**	0.8m	**Length:**	n/a
Pier Configuration		**Number:**	n/a	**Elev. Left:**	232.06	**Elev. Right:**	232.02
Width:	n/a	**Location:**	n/a	**Length of Culvert/Crossing:**		37	
End Treatment:				**Skew Angle:**	15°	**Rise:**	n/a
n/a				**Opening Face Width:**		n/a	
Upstream Treatment:				**Downstream Treatment:**			
n/a				n/a			

Upstream Elevations:		**Downstream Elevations:**	
Invert	226.55	**Invert**	226.33
Obvert	227.65	**Obvert**	227.36
Top	227.78	**Top**	227.40

Comments:

Description: Looking u/s

Description: Looking at u/s face

Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

		Survey Date:	May 16, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Railway 2	**Municipality:**	Callander Bay
Structure Number:	27	**Date of Construction:**	n/a
Coordinates E:	627362.5120m	**Temporary Benchmark**	
N:	5121266.0930m	**Elev.** n/a	
Structure Shape:	culvert	n/a	
Structure Material:	Corrugated Steel Pipe		

Opening Characteristics							
Cell Shape:	Circular	**Cells:**	1				
Material:	n/a	**Rise:**	n/a	**Sag Elevation:**	230.19		
Diameter:	1000mm	**Span:**	n/a	**Railing Height:**	n/a	**Length:**	n/a
Pier Configuration		**Number:**	n/a	**Elev. Left:**	n/a	**Elev. Right:**	n/a
Width:	n/a	**Location:**	n/a	**Length of Culvert/Crossing:**	25		
End Treatment:				**Skew Angle:**	9°	**Rise:**	n/a
n/a				**Opening Face Width:**	n/a		
Upstream Treatment:				**Downstream Treatment:**			
n/a				n/a			

Upstream Elevations:		**Downstream Elevations:**	
Invert	226.63	**Invert**	226.70
Obvert	n/a	**Obvert**	227.81
Top	n/a	**Top**	227.84

Comments: Upstream culvert covered with dirt and debris. Upstream side of the culvert has no defined channel and mostly just wetland.

Description: Looking u/s

Description: Looking at u/s face

Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

		Survey Date:	May 16, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Highway 11 Southbound	**Municipality:**	Callander Bay
Structure Number:	28	**Date of Construction:**	n/a
Coordinates E:	627236.672m	**Temporary Benchmark**	
N:	5120732.787m	**Elev.** n/a	
Structure Shape:	culvert	n/a	
Structure Material:	Concrete		

Opening Characteristics			
Cell Shape:	Circular	**Cells:**	1
Material:	n/a	**Rise:**	1.8m
Diameter:	1800mm	**Span:**	1.8m
Pier Configuration		**Number:**	n/a
Width:	n/a	**Location:**	n/a

Sag Elevation:		n/a	
Railing Height:	0.8m	**Length:**	n/a
Elev. Left:	229.16	**Elev. Right:**	229.13
Length of Culvert/Crossing:		38	
Skew Angle:	4°	**Rise:**	n/a
Opening Face Width:		n/a	

End Treatment:
n/a

Upstream Treatment:
n/a

Downstream Treatment:
n/a

Upstream Elevations:		**Downstream Elevations:**	
Invert	n/a	**Invert**	222.20
Obvert	n/a	**Obvert**	224.06
Top	n/a	**Top**	224.16

Comments:

Description: Looking d/s from highway

Description: pool infront of outlet

Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

		Survey Date:	May 16, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Highway 11 Northbound	**Municipality:**	Callander Bay
Structure Number:	29	**Date of Construction:**	n/a
Coordinates E:	627274.149m	**Temporary Benchmark**	
N:	5120731.756m	**Elev.** n/a	
Structure Shape:	culvert	n/a	
Structure Material:	Concrete		

Opening Characteristics							
Cell Shape:	Circular	**Cells:**	1				
Material:	n/a	**Rise:**	1.8m	**Sag Elevation:**	n/a		
Diameter:	1800mm	**Span:**	1.8m	**Railing Height:**	0.8m	**Length:**	n/a
Pier Configuration		**Number:**	n/a	**Elev. Left:**	230.73	**Elev. Right:**	230.73
Width:	n/a	**Location:**	n/a	**Length of Culvert/Crossing:**	40		
End Treatment:				**Skew Angle:**	4°	**Rise:**	n/a
n/a				**Opening Face Width:**	n/a		
Upstream Treatment:				**Downstream Treatment:**			
n/a				n/a			

Upstream Elevations:		**Downstream Elevations:**	
Invert	223.94	**Invert**	n/a
Obvert	225.67	**Obvert**	n/a
Top	225.78	**Top**	n/a

Comments:

Description: Looking u/s

Description: Looking at u/s face

Description: Looking u/s from highway

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

		Survey Date:	May 16, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Railway	**Municipality:**	Callander Bay
Structure Number:	30	**Date of Construction:**	n/a
Coordinates E:	627320.2640m	**Temporary Benchmark**	
N:	5120732.8440m	**Elev.** n/a	
Structure Shape:	culvert	n/a	
Structure Material:	Corrugated Steel Pipe		

Opening Characteristics							
Cell Shape:	Circular	**Cells:**	1				
Material:	n/a	**Rise:**	1.8m	**Sag Elevation:**	231.48		
Diameter:	1800mm	**Span:**	1.8m	**Railing Height:**	n/a	**Length:**	n/a
Pier Configuration		**Number:**	n/a	**Elev. Left:**	n/a	**Elev. Right:**	n/a
Width:	n/a	**Location:**	n/a	**Length of Culvert/Crossing:**	32.84		
End Treatment:				**Skew Angle:**	11°	**Rise:**	n/a
n/a				**Opening Face Width:**	n/a		
Upstream Treatment:				**Downstream Treatment:**			
n/a				n/a			

Upstream Elevations:		**Downstream Elevations:**	
Invert	223.57	**Invert**	223.72
Obvert	225.68	**Obvert**	225.40
Top	n/a	**Top**	n/a

Comments: Culvert bottom of the upstream side completly gone/eroded.

Description: Looking u/s

Description: Looking at u/s face

Description: Looking d/s

Description: Looking at d/s face

Lansdowne Creek Structures Inventory

		Survey Date:	May 15, 2023
Surveyor:	Eh Klay Law	**Watercourse:**	Lansdowne Creek
Street Location:	Derland Road	**Municipality:**	Callander Bay
Structure Number:	31	**Date of Construction:**	n/a
Coordinates E:	627882.6580m	**Temporary Benchmark**	
N:	5120814.7490m	**Elev.** n/a	
Structure Shape:	culvert	n/a	
Structure Material:	HDPE		

Opening Characteristics							
Cell Shape:	Circular	**Cells:**	1				
Material:	n/a	**Rise:**	0.8m	**Sag Elevation:**	230.53		
Diameter:	800mm	**Span:**	0.8m	**Railing Height:**	n/a	**Length:**	n/a
Pier Configuration		**Number:**	n/a	**Elev. Left:**	n/a	**Elev. Right:**	n/a
Width:	n/a	**Location:**	n/a	**Length of Culvert/Crossing:**	12.25		
End Treatment:				**Skew Angle:**	n/a	**Rise:**	n/a
n/a				**Opening Face Width:**	n/a		
Upstream Treatment:				**Downstream Treatment:**			
n/a				n/a			

Upstream Elevations:		**Downstream Elevations:**	
Invert	229.14	**Invert**	223.89
Obvert	229.90	**Obvert**	229.66
Top	229.98	**Top**	229.73

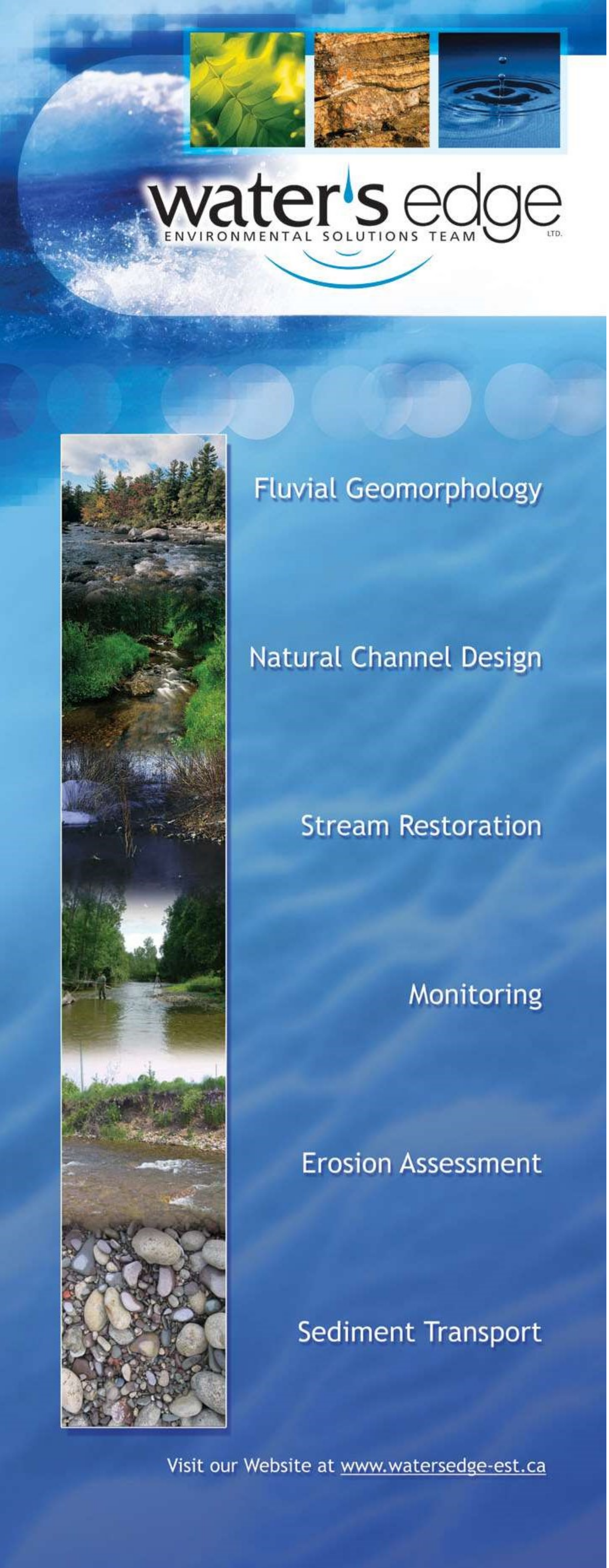
Comments:

Description: Looking u/s

Description: Looking at u/s face

Description: Looking d/s

Description: Looking at d/s face



APPENDIX D:

Full Size Maps