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Technical Memorandum

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Subject: **Mosquito Creek Flood Risk Mapping from Mitch Owens Road to Rideau River**

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Executive Summary

This report provides a summary of the analytical methods used and underlying assumptions applied in the preparation of flood plain mapping for Mosquito Creek from Mitch Owens Road to the Rideau River. The project has been completed in accordance with the technical guidelines set out under the Canada-Ontario Flood Damage Reduction Program (FDRP) (MNR, 1986), and the technical guide for the flood hazard delineation in Ontario (MNR, 2002) as laid out by the Ontario Ministry of Natural Resources. The 1:100 year flood lines delineated here are suitable for use in the RVCA's regulation limits mapping (as per Ontario Regulation 174/06) and in municipal land use planning and development approval processes under the Planning Act.

Contents

1. Introduction

In September 2017, The City of Ottawa and three conservation authorities (Mississippi, Rideau and South Nation) initiated the second phase of the flood risk mapping program within the boundary of the City (the first phase ran from 2012 through 2018). A multi-year plan for mapping a number of high priority rivers and streams was made. As part of this program, the RVCA has identified four streams, where the existing mapping would be updated or mapping will be created for the first time. Mosquito Creek is one of them.

There is no previous flood mapping of Mosquito Creek. However, engineered flood risk mapping is available for the Rideau River (RVCA, 2017a). Information from this study, when found useful, is used in the present study. Summary of available information has recently been compiled by RVCA in a catchment report card of Mosquito Creek (RVCA, 2013).

This report provides a summary of the analytical methods used and underlying assumptions applied in the preparation of flood plain mapping for Mosquito Creek from Mitch Owens Road to the confluence with the Rideau River (Figures 1 and 2). The project has been done in accordance with the technical guidelines set out under the Canada-Ontario Flood Damage Reduction Program (FDRP) (MNR, 1986), and the technical guide for the flood hazard delineation in Ontario (MNR, 2002) as laid out by the Ontario Ministry of Natural Resources. It also conforms to the 'generic regulation' guidelines of Conservation Ontario (2005). The 1:100 year flood lines delineated here are suitable for use in the RVCA's regulation limits mapping (as per Ontario Regulation 174/06) and in municipal land use planning and development approval processes under the Planning Act.

2. Study Area

A total of 11.1 km of Mosquito Creek and its tributaries has been mapped (Figures 2 and 17). The study area is in the south-central region of the City of Ottawa and has significant existing development (Figure 4). About 50% of the area is currently developed or slated for future development (residential, commercial, institutional, streets, and recreational). About 35% is agricultural and about 12% is forest. Quarries cover about 2% of the watershed area, while wetlands and open water makes up for the remaining 1%.

The following streams were modeled and mapped:

- Mosquito Creek (7 km)
- Tributary A or Spratt Drain (2.5 km)
- Tributary B or Nolan Drain (1.6 km)

3. Data Used

LIDAR: High quality topography is the key to high quality flood risk mapping. Digital Elevation Models (DEM) were derived from the 2015 LIDAR data procured by the City of Ottawa (Appendix C). The 2015 data set has an acquisition density of about 10.4 points per square meter, and an estimated consolidated vertical accuracy (CVA) of 19.3 cm (Airborne Imagery, 2015). The vertical datum was CGVD28 HT2.0. The spatial extent of the data set is shown in Figure C.3 in Appendix C. The City also provided 0.25 m contour lines that were derived from LIDAR data. However, we only used the LIDAR points directly for this study, and the contour lines were never used.

The accuracy of the LIDAR data was checked in the field by RVCA staff in July-August 2016. The true elevations of on-the-ground features that are identifiable on the mapping were determined using RVCA's survey grade GPS equipment (Trimble R8/R10) and were compared with the elevations indicated by the LIDAR spot heights, to determine that any differences between mapped and true elevations were within the accuracy prescribed by the FDRP standards.

In total, 277 spot heights were verified (see Table C.1 and Figure C.1 in Appendix C). As described in the FDRP guidelines (MNR 1986), the spot height checks are considered satisfactory when 90% of the data points are within 0.33 m of the field measurement. As shown in Table C.1, this criterion has been adequately met[1]. On average, the spot heights are within 3.0 cm (Table C.1).

Watercourses: A GIS-based watercourse layer was obtained from the City of Ottawa. It was a flow network generated by the City using their LiDAR topography, augmented by culvert and bridge overrides to ensure hydraulic connectivity. This layer was modified by RVCA's GIS staff using the DRAPE 2014 imagery (Fugro, 2015) and following the procedures outline by the MNR (2011). The resultant watercourses were integrated into a jurisdiction-wide dataset maintained by RVCA's GIS department.

Catchment Delineation: Catchments were derived using the ArcHydro and Spatial Analyst extensions in ESRI's ArcMap. The LIDAR topography was processed into a 1 m DEM and then augmented by the RVCA watercourse layer. The augmentation involved

[1] FDRP (1986) Manual also specifies criteria for checking contour crossings. However, in this study we used only LIDAR spot heights, not contour lines. Therefore, we did not check the accuracy of contour lines supplied by the City of Ottawa.

'burning down' the watercourses into the LiDAR surface and then filling the areas back up, along with all other depressions, to form a cohesive surface devoid of localized sinks. This hydrologically-corrected DEM ensures hydraulic connectivity throughout the analysis surface. The subcatchments of the Mosquito Creek basin were generated off this surface via pour points placed at key stream confluences and road crossings. The resulting catchments were validated via the LIDAR topography and visual interpretation using DRAPE 2014 imagery (Fugro, 2015).

Drape Imagery: The Drape imagery was collected during a period from 28 April through 7 June 2014 with a horizontal accuracy of ±0.5 metre (Fugro, 2015). This high-quality colored photo clearly shows the rivers, creeks, land use, houses, buildings, roads, infrastructure, vegetation and other details.

2017 Aerial photo: The 2017 aerial photo was captured during May 16-20, 2017. It was provided to us by the City of Ottawa. It is accurate, sharp and in colour, and shows various natural and man-made features clearly.

Building footprint: The 'building footprint' layer was provided by the City of Ottawa for the area inside the urban boundary (Figure 6). It enables us to accurately draw flood lines around buildings. This data layer contained information collected over a number of years.

Land use: A GIS-based land use data set, containing information updated in 2010, was obtained from the City of Ottawa. RVCA's GIS staff further updated the data based on information related to planning and regulations programs. Locations where land uses had changed (e.g., forest cover replaced with agriculture) were identified by visual inspection of the DRAPE 2014 imagery (Fugro, 2015) and recent observations by RVCA staff. RVCA's Planning staff provided Official Plans for the City of Ottawa (2018); the future land use has been combined with the existing land use in Figure 4, but can be more clearly seen in Figure 5, where future city center, commercial, employment, mixed residential and low residential areas are identified. This future or ultimate land use has been used for the estimation of hydrological parameters.

Imperviousness: A GIS-based data layer showing the impervious surfaces was obtained from the City of Ottawa. It identified various impervious surfaces such as roads, parking lots, buildings, etc. (Figure 5). This data was based on information collected over

a number of years up to 2011 and was directly used in imperviousness calculation. Designs for areas of future development were compared against the surrounding community and conservatively correlated to TR-55 cover types: low-density residential correlated to ½ acre lots (25% impervious); medium-density residential correlated to ¼ acre lots (38% impervious); high-density residential correlated to town houses (65% impervious); and commercial (85% impervious). This correlation guided the selection of community-level imperviousness values for future development areas used to augment the City of Ottawa data (Figure 5). The imperviousness varied in the range from 2% to 51% for the sub-catchments, with an average of 21% for the entire Mosquito catchment (Table 3a). This data set was used in the hydrologic analysis.

Soil classification: A soils classification layer was obtained from MNRF's LIO (Land Information Ontario) database, details of which are documented in a report by MNR (2012). Soil is classified into four categories (A, B, C and D) based on infiltration capacity.

Group A soils have a high infiltration rate (low runoff potential) when thoroughly wet; these consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B soils have a moderate infiltration rate and consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture; these soils have a moderate rate of water transmission.

Group C soils have a slow infiltration rate and consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture; these soils have a slow rate of water transmission.

Group D soils have a very slow infiltration rate (high runoff potential) and consist chiefly of clays that have high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material; these soils have a very slow rate of water transmission.

This report (MNR, 2012) describes the infiltration rate in qualitative terms without giving numerical values. However, it appears to be based on the SCS's original

classification. USDA-SCS (1986) gives specific range of infiltration or transmission rate (Group A: greater than 0.30 inch/hour; Group B: 0.15-0.30 inch/hour; Group C: 0.05-0.15 inch/hour; Group D: 0-0.05 inch/hour). This soil information was used in hydrological parameter estimation.

As shown in Table 2a and Figure 3a, Soil Group D is predominant (35%) in the Mosquito catchment, followed by Group C (22%), B (21%) and A (12%). Thus, the soil in this area has a good representation from all soil groups. Groups D and C with low infiltration rate covers mainly the lower part of the watershed (Figures 3a and 3b); the soil is fine sand and clay with low rate of water transmission. In the upper part of the watershed, Groups B and A with high infiltration rate dominate; the soil is coarse and gravely sand, well drained, and has a high rate of water transmission.

Soil in about 10% of the basin remains 'unclassified'. For the purposes of hydrologic parameter estimation, the unclassified soils have been assigned an approximate soil group based on available information (Table 2a).

Soil Permeability: A GIS-based data layer showing the soil permeability was obtained from the Ontario Geological Survey (2010). Four categories of soil permeability were identified: high, low-medium, variable and low. These categories roughly coincided with the soil groups (A, B, C and D). Table 2b and Figure 3b show soil permeability information in Mosquito catchment. This information was not directly used in the present analysis but was only used for corroborating soil classification data.

4. Hydrological Computations

4.1 Overall Methodology

In the absence of any streamflow measurement – a common situation in many small catchments – we have used a single-event hydrological model to estimate flood flows at key locations along Mosquito Creek. This approach is sometimes referred to as the 'return period design storm' method and is one of the acceptable flow estimation procedures discussed in the provincial guidelines (MNR, 1986, 2002). In this method, a synthetic design storm (hyetograph) of specified return period is fed into a rainfall-runoff model to generate the corresponding peak flow, which is generally assumed to have the same return period. This procedure is quite popular and is regularly used in studies related to drainage, stormwater, flooding, and so on. This method is also accepted by FEMA (2009), although they call it simply 'rainfall-runoff modeling'.

For small catchments of this size, floods generated by summer storms are expected to be larger compared to spring freshet and should therefore be used in flood risk mapping. Past studies in this area support this notion[2].

Suitable data for calibrating the SWMHYMO model was not available. Therefore, we have estimated the flood quantiles based on theoretical (or synthetic) storms and uncalibrated hydrologic modeling as the best available methodology at the present time. As described later in the report, lack of data also prevented calibration of the hydraulic model.

Synthetic storms of various types and durations were first used to estimate the 1:100 year flood flows. Based largely on engineering judgement, one of the storms was selected as suitable for the flood mapping purposes within the Mosquito Creek basin. The selected storm was then used to estimate the flood quantiles for various return periods (2, 5, 10, 20, 50, 100, 200, 350 and 500 years).

[2] For example, the 1:100 year summer and spring floods of Flowing Creek (with an area of 49.5 km^2) were estimated at 51 and 46 cms respectively by PRS/JFSA (2005) during a larger mapping study on the Jock watershed; it was recommended that the summer flows be used for flood mapping. MVCA (2015) analyzed snowmelt events using the Ottawa Airport data and concluded that 'if a location on a river has a response time somewhat longer than 12 hours, it would be expected that snow melt would govern" (as opposed to summer rainfall). Within the Mosquito area, catchments response time is much lower (1.4 to 2.6 hours); therefore, summer rainfall is expected to produce larger runoff than spring snowmelt.

4.2 SWMHYMO Model

We have used version 4.02 of SWMHYMO model (JFSA, 2000) for estimating the summer floods. This model is used widely in Ontario for both urban and rural catchments.

As shown in Figures 2 and 7, the Mosquito basin has been divided into ten catchments, and flood quantiles have been estimated at twelve nodes and ten catchment outlets along the river and its tributaries (Figure 13, Tables 6 and 8). A schematic of the SWMHYMO model is shown in Figure 8, where both the catchments and channel segments used for flow routing are included.

The Mosquito catchment is within the City of Ottawa. Pertinent Official Plan (City of Ottawa, 2003) and a recent Official Plan Amendment # 222 (City of Ottawa, 2018) indicate a good amount of land use change in this area, culminating to about 55% developed area within the planning horizon. This is concentrated in five development areas (see Figures 4, 5 and 6). We have used this information for the hydrologic analysis. The hydrologic analysis therefore is based on the future condition as required by the provincial guideline (MNR, 2002).

Among the available runoff-generating modules in SWMHYMO model, two commands (CALIB NASHYD and CALIB STANDHYD) were considered for calculating runoff from rural and urban catchments respectively. In case of Mosquito Creek, five catchments are rural (imperviousness less than 20%) and five are urban (with imperviousness higher than 20%). Therefore, both the CALIB STANDHYD and CALIB NASHYD commands were used.

The CALIB NASHYD command, used for rural areas with imperviousness less than 20%, requires the following input:

$AREA$ = area of the catchment (hectares),

DWF = dry weather flow component (m^3/s),

CN or $CN*$ = original or conjugate (modified) curve number,

IA = initial abstraction (mm)

DT = computational time step (minutes),

N = number of lineal reservoirs, and

T_p = time to peak (hour).

Tables 3a-b list the parameters for all ten catchments within the Mosquito basin. The dry weather flow or base flow was assumed to be zero (DWF = 0.0). A one minute time step was used (DT = 1.0 minute). The number of linear reservoirs was set at three (N = 3). These are typical values that hydrologists use in the absence of more site-specific information.

For the catchments with more than 20% imperviousness, CALIB STANDHYD command was used. Five catchments were in this category. The future land use was used in the hydrologic analysis and flood risk delineation, in accordance with MNR (2002) guidelines. CALIB STANDHYD command requires the following input parameters:

$AREA$ = area of the catchment (hectares),

DWF = dry weather flow component (m^3/s),

CN or $CN*$ = original or conjugate (modified) curve number
(for pervious surface only),

$TIMP$ = total imperviousness ratio (between 0.0 and 1.0),

$XIMP$ = directly connected imperviousness ratio (between 0.0 and 1.0),

$LOSS$ = type of loss over impervious surface,

DT = computational time step (minutes),

$IAper$ = initial abstraction on pervious surface (mm),

$SLPP$ = average pervious surface slope (%),

LGP = average lot depth (m),

MNP = roughness coefficient for pervious surface,

SCP = linear reservoir storage coefficient for pervious surface (minutes),

$IAimp$ = initial abstraction on impervious surface (mm),

$SLPI$ = average impervious surface slope (%),

LGI = average overflow travel length (m),

MNI = roughness coefficient for impervious surface, and

SCI = linear reservoir storage coefficient for impervious surface (minutes).

Table 3b lists CALIB STANHYD parameters for all catchments and the CALIB STANHYD is applied to those that meet the imperviousness criterion. The dry weather flow or base flow was assumed to be zero (DWF = 0.0). A one-minute time step was used (DT = 1.0 minute). These are typical values that hydrologists use in the absence of

more site-specific information. The rest of the parameters and how they were estimated are explained in Table 3b.

The CALIB STANHYD command of SWMHYMO model (JFSA, 2000, page 7.14) requires that the calculation of CN/CN* reflects the pervious surfaces only. This calculation should not include impervious surface. We followed this requirement, as explained further in Tables 3a-b. We note that this is not a requirement of the original SCS CN method (USDA-SCS, 1986).

Two parameters (curve number and time to peak) are very important in SWMHYMO modeling and therefore require elaborate discussion.

Curve Number Method: The curve number (CN) method of estimating runoff was first introduced by US Department of Agriculture's Soil Conservation Service (USDA-SCS 1986) and is widely used in North America and elsewhere. This method is used in the SWMHYMO model too. The curve number (CN) was calculated based on land use and soil type (Tables 1 and 2a). Equivalent land use and associated CN from TR-55 were first selected for each of the 39 land cover and 4 soils types found in this region (Table 4). For each elemental area with a particular land cover-soil combination, the appropriate CN value was chosen; these CN values were then area-averaged over the whole catchment to find the aggregate CN for the catchment. CN values varied from 66 to 87 for different sub-catchments, with an average value of 75.1 for the entire Mosquito catchment (Tables 3a-b).

Both the original SCS curve number method and its 'conjugate' or modified version can be used in SWMHYMO. For this study, we have used the modified method – commonly known as the $CN*$ method – because this method was used for most of the small subwatersheds within the City of Ottawa in the past. For parameter estimation and calculation procedures, we have closely followed the original SCS manual (USDA-SCS, 1986) and a recent, comprehensive state-of-the-art review done by a task committee (Hawkins et al., 2009).

The first step is estimating the CN value based on land use and soil type as given in the SCS manual (USDA-SCS, 1986). We have used the following information:

- 2010 land use data set from the City of Ottawa

- 2012 soil classification by LIO/OMAFRA/MNR (MNR, 2012)

Both data sets were available in digital format. Tables 1, 2a and 4 summarizes parameters related to the estimation of CN and $CN*$. This process was automated in the GIS system.

Once CN was estimated, then the initial abstraction (IA) in mm was calculated as:

$$IA = 0.2S$$

where the soil storage capacity (S) in mm is related to CN and by the relation:

$$CN = \frac{25400}{254 + S}$$

The 'conjugate' or modified curve number $CN*$ was calculated using the following equation:

$$CN* = \frac{100}{1.879(\frac{100}{CN} - 1)^{1.15} + 1}$$

The corresponding soil storage capacity ($S*$) in mm was related to $CN*$ by the relation:

$$CN* = \frac{25400}{254 + S*}$$

And the corresponding initial abstraction ($IA*$) in mm was calculated as:

$$IA* = 0.05S*$$

The above equations were taken from Hawkins et al. (2009; page 35, 9 and 34 respectively).

While using the NASHYD command in the SWMHYMO model, we have calculated the initial abstraction (IA and $IA*$) values as a function of CN and $CN*$, using the above equations. The same was done while using the STANHYD command for pervious surfaces, with calculations described in Table 3b. However, while using the STANHYD command for impervious surfaces, the initial abstraction (IA and $IA*$) values were taken from the City of Ottawa Sewer Guidelines (City of Ottawa, 2012, page 5.28).

While the original CN was estimated based on the assumption of an initial abstraction equal to 20% of the soil moisture capacity, subsequent research revealed that the initial abstraction equal to 5% of the soil moisture capacity may be more appropriate. The new curve number was called $CN*$, and the relationship between CN and $CN*$ was established. At present, both the original and the modified methods are widely used, with more and more practitioners preferring the latter. However, given that they can be readily converted to each other, one has the option to use any of them.

In this study, we have used the modified CN method, which means we have used the $CN*$ and $IA*$ combination as input to the hydrologic model. Parameters for the original CN method, namely CN and the associated IA, were calculated and presented in Table 3a for information only but were not used in the hydrologic calculations.

Time to Peak: The time of concentration (T_c) of a watershed is defined as the time required for water to move from the most remote part of the watershed to its outlet. Many methods are available, mostly empirical and developed for specific conditions, to estimate T_c. Here, we have used the 'velocity method' originally introduced by Soil Conservation Service (USDA-SCS, 1986) and later elaborated by Natural Resources Conservation Service (USDA-NRCS, 2010). This method has a sound physical basis[3],

[3] The SCS velocity method is generally considered to have a sound physical basis and is often used as a yardstick to evaluate other methods (see, for instance, McCuen et al. 1984; Grimaldi et al. 2012 and Sharifi and Hosseini 2011). Grimaldi et al. found that as much as 500% variation is quite common when using different methods to estimate time of concentration. They also made an interesting remark: "Indeed, it a paradox that advanced hydraulic models, such as 2-D flood propagation models for hydraulic risk mapping based on very expensive topographic and remote sensing data, are actually limited by design hydrographs based on anachronistic parameters, such as Tc." This is consistent with the commonly observed fact that hydraulic calculations are much more accurate than hydrologic calculations. Also, from the practitioner's point of view, "as a general rule, methods that compute individual travel times for various types of flow

i.e., the movement of water over the land and along the channel, although estimating parameters – as the case frequently is in hydrology – is at best an approximation.

The time to peak (T_p) is defined as the time between rainfall event and the corresponding peak flow. It is related to the time of concentration as (USDA-NRCS 2010, page 15-3):

$$T_p = 0.6T_c$$

Both T_c and T_p were calculated using the method detailed in the USDA-NRCS (2010) manual. The time to peak (T_p) was an input to SWMHYMO model (Table 3a). It varied from 1.4 to 2.6 hours.

All estimated parameters necessary for the SWMHYMO modeling of the Mosquito catchments are listed in Tables 3a and 3b.

Channel Routing: The ROUTE CHANNEL command of the SWMHYMO model was used for routing the flow along rivers and streams. The model requires channel length, slope, roughness, and a typical channel cross-section. Channel length and slope are given in Table 3c. Figures 7 and 8 shows how the channels fit within the overall model structure. Typical cross-section for each channel was based on the characteristic main channel and adjacent floodplains where applicable. Manning's roughness coefficients for the main channel and floodplain were also assigned based on land use and expected flow conditions. Care was taken to ensure that parameter values used in SWMHYMO were consistent with those used in HEC-RAS model.

4.3 Selection of Design Storm

A wide variety of design (or synthetic) storms are available. However, a particular storm is generally selected for flood mapping purposes after appropriate scrutiny. For this study, synthetic storms of two types (Chicago and SCS Type II) and four durations (3, 6, 12 and 24 hours) were considered for hydrologic modeling (Table 5). These storms are

segments (for example, overland flows and channelized flows), and then sum the individual travel times to estimate the total travel time, are thought to be the most reliable" (Bentley Systems 2007b).

routinely used in Canada for both stormwater management and flood risk studies. Recent studies in neighboring conservation authorities (SNCA 2014; MVCA 2015) as well as within the RVCA (RVCA 2014, 2017b, 2017c, 2017d, 2018a, 2018b, 2018c, 2019, 2020, 2021) confirm the suitability of these storms for the purposes of floodplain mapping in small basins.

The following synthetic storms were considered:

- 3 hour SCS Type II storm
- 6 hour SCS Type II storm
- 12 hour SCS Type II storm
- 24 hour SCS Type II storm
- 3 hour Chicago storm
- 6 hour Chicago storm
- 12 hour Chicago storm
- 24 hour Chicago storm

Hyetographs corresponding to these storms were generated from the most recent IDF curve at Ottawa Airport (Station ID 6106000), obtained from Environment Canada[4]. This IDF curve was based on the most recent analysis using 39 years of data from 1967 to 2007 (with 2001 and 2005 data missing)[5]. Generally, the curve for a certain return period follows an equation like:

$$I = \frac{a}{(b+t)^c}$$

where,

I = rainfall intensity (mm/hour), and

a, b, c = constants.

[4] Information on IDF curve was obtained from Environment Canada's website [http://climate.weather.gc.ca/prods_servs/engineering_e.html].

[5] City of Ottawa's Sewer Design Guidelines (2012) contain an old IDF curve based on 1961-1990 data, which yields somewhat smaller storm depths than the more recent IDF curve (based on 1967-2007 data). We have opted to use the most recent IDF curve because it reflects recent climatic conditions, is based on more data (39 years as opposed to 31 years), and is slightly conservative (produces bigger storms). The FDRP Manual (MNR 1986) also recommends the use of most recent IDF information.

From the EC IDF curve (Figure 9), equations were fitted via the STORM software and constants determined for all return periods (Figure 10). These equations were then used to generate rainfall hyetographs, for which we used the STORMS 2010 utility software (version 3.0.1) from JFSA (2011). Figure 11 shows the storm hyetographs. Hyetographs were input to SWMHYMO model, where they drive the rainfall-runoff computation. This procedure was followed for all Chicago storms and the SCS 24 hour storm. For all other SCS storms (3, 6, 12 hour durations), the distribution was taken from the City of Ottawa Sewer Guidelines (2012; page 5.18).

Using the eight synthetic storms, the 1:100 year flows were computed for all sub-catchments and at key locations along the stream (Table 6), which were then scrutinized to select an appropriate storm for the purposes of flood mapping. This step is somewhat subjective and requires engineering judgement. As expected, the longer duration storms produced higher flows; usually the flow corresponding to a 3 hour storm was about 65-80% of that produced by a 24 hour storm. The 24 hour SCS storms produced slightly higher flows (8% on average) compared to Chicago storms. This relationship gradually reversed with shorter storm durations, with 3 hour Chicago storms producing higher flows than SCS storms (8% on average). This aligns well with expectations based on the spatial distribution of land cover in the watershed.

The estimated flows from various storms were thus within the typical variation associated with hydrologic computation; no storm produced extremely high or low flows. This appears to endorse the notion that all storms considered here and associated flows were within the realm of hydrological plausibility. No storm stood out as an outlier or as unrealistic. In the selection of a storm for flood mapping purposes, we wanted to be as close as possible to reality with a slight degree of conservatism. Considering all, we selected the 24 hour SCS Type II storm as the most suitable for Mosquito Creek flood mapping[6]. As can be seen in Table 6 and Figure 12, it produced the higher flows, but only marginally so (6% higher than those produced by the Chicago storm). This selection was

[6] The hydrological analyses done here and the results obtained therefrom are considered suitable for the purposes of floodplain mapping of Mosquito Creek only, and for no other purpose. It should be emphasized that the methodology, storms considered and selected, modeling, and the estimated flood quantiles may not be suitable for any other purpose, including land drainage, stormwater management and infrastructure design. Any subsequent use of the data, model and other information contained in this report should be made only after independent verification and scrutiny by qualified engineers/hydrologists.

consistent with our philosophy of being as close as possible to reality, with only a slight degree of conservatism to account for the uncertainty.

4.4 Estimated Flood Quantiles

After the 24 hour SCS Type II storm was selected for the flood mapping purposes, the SYMHYMO model was run for all events with return periods from 2 to 500 years (Table 7). Input and output files of the SWMHYMO model are included in Appendix D. Estimated flood quantiles at key locations were tabulated (Table 8 and Figures 13 and 14a-b). Flood flows from this table were then used in the hydraulic modeling; thus, this table is the link between hydrologic and hydraulic computations.

4.5 Comparison with Other Methods

In order to assess the reasonableness of the flood quantiles computed here (with SCS Type II 24 hour storm), a comparison was made to those computed at other small catchments elsewhere (Figures 15 and 16). Besides comparing the data points to each other, three lines were drawn to provide the context. They are:

- Area pro-rating: based on Jock River at Moodie Drive; 1:100 year spring flood of 196 cms based on measured data (PSR/JFSA 2004a)
- 1:100 year floods computed by the Index Flood Method (MNR, 1986)
- Creager envelope curve with a coefficient of 30 (Watt et al. 1989)

Figures 15 and 16 show that, in general, the Mosquito Creek flows are in the same range as other catchments within the RVCA (taken from PSR/JFSA 2005; JFSA 2009; RVCA 2014, 2017b, 2017c, 2017d, 2018a, 2018b, 2018c, 2019, 2020, 2021) and from adjacent conservation authorities (SNCA, 2014; MVCA, 2015). One notable exception is Bilberry Creek, which is fully urbanized with soils mostly composed of clay with a low infiltration rate and shows higher flows. Urban catchments in Mosquito basin also show similarly high flows. Some of the urban catchments within the Jock watershed also have higher flows comparable to those in Bilberry basin.

We note that all of the estimated floods within the Mosquito basin are higher than those given by the Index Flood Method, which was based on measured streamflow data and was prescribed by MNR (1986) for estimating floods in the absence of better

information. All data points are below the Creager envelope curve, which is the upper-most limit of extreme flood flows in Canada. On the balance, we found that the estimated Mosquito Creek flows are congruent with other information and are within the confines of pertinent estimation methods.

5. Hydraulic Computations

5.1 HEC-RAS Model

Following standard procedures (MNR, 1986; USACE, 1990, 2010), a steady-state hydraulic model of Mosquito Creek and its tributaries was built. The HEC-RAS software (version 4.1.0) developed by the US Army Corps of Engineers (USACE, 2010) was used. It uses the same back water calculation procedure as HEC-2 (USACE, 1990), which has been the industry standard since the 1970s, but with improved data processing and graphical capabilities. About 11 km of streams was included in the HEC-RAS model.

Cross-Sections: The cross-sections used in the modeling were generated from the latest topography (2015 LIDAR; Airborne Imagery, 2015) using GIS tools. While the above-water part of the cross-sections generated from LIDAR is accurate (especially in deep ravines), the under-water portion of the channel is sometimes not adequate in flatter areas. In such cases, the under-water portion of the cross-section was adjusted from field observation conducted specifically for this project and also from other available sources (RVCA, 2015). Since the LIDAR were flown during low flow conditions, the adjustment required for under-water channel was usually minor (less than 30-50 cm). The probable impact of such minor adjustments on 1:100 year flood level is expected to be insignificant as well. Therefore, the cross-sectional data was considered adequate for the purposes of flood mapping.

In total, 176 cross-sections were used in our HEC-RAS model. Figure 17 shows a schematic of the HEC-RAS model. Drawing MQ-1 in Appendix F shows the cross-sections in greater detail, along with the computed Regulatory Flood Levels (RFLs) and flood risk limits. The location and alignment of river cross-sections within the model were based on engineering judgment as related to the expected flow conditions during high flood events.

The cross-sections were designated as ‘ineffective’ and ‘blocked’ when required. This was done to distinguish between conveying and non-conveying cross-sectional areas. This was geared towards making the best use of a one-dimensional model to mimic three-dimensional river flows.

The location and alignment of river cross-sections within the model were based on engineering judgment as related to the expected flow conditions during high flood

events. After the first iteration of flood line was plotted, the probable streamflow lines along the actively conveying waterbody were drawn, taking into consideration the presence of local topography, islands, roads, and bridges. This offered an overall view of the regional flow pattern in plan view. Ineffective flow areas were then identified on this plan and were entered into the model. This afforded a holistic and more realistic identification of ineffective flow areas than would be possible when single cross-sections are considered in isolation.

Channel Roughness: Based on our best understanding of the expected channel, flow and vegetation conditions, the Manning's roughness coefficient was estimated to be 0.027 to 0.050 in the main channel and 0.033-0.08 for the overbank areas (Table B.1 in Appendix B). These values were consistent with standard values, such as those recommended by Chow (1959).

Bridges/Culverts: Within the study area there are twelve road crossings (Table 11). As-built drawings were obtained from the municipalities. Moreover, field survey by RVCA staff during 2019 and 2020 were used for determining bridge/culvert dimensions. Road crossings and associated cross-sections were updated to match the as-built information.

In modeling bridges in HEC-RAS, we meticulously followed the guidance provided by USACE (2010). In this model, each bridge structure requires both a low flow and high flow modelling method to be selected. None of the bridges modeled along Mosquito Creek had piers; as such selecting the Energy Method for low flow computations was most appropriate. High flow computations were also set to the Energy Method, except for the following case where the Pressure/Weir Method was used:

- River Road (between cross-section 1135 and 1140) as the bridge deck and road embankment obstruct the flow, creating a backwater effect.

Flood Quantiles: The estimated design flows from the hydrologic analysis (discussed above), with return periods ranging from 2 to 500 years (Table 8), were used in the HEC-RAS model. Table 9 shows the flows that were input to the HEC-RAS model.

For each channel reach, flows at both upstream and downstream ends were estimated form the SWMHYMO model (Table 8) and are listed in Table 9. As is the usual practice, the higher of these two flows – almost always the downstream one – was used for the hydraulic calculation in the HEC-RAS model. However, an exception was noticed for the reaches between N3 and N4, and also for J2 and N5 of Mosquito Creek. Here the SWMHYMO-generated flows at Node N4 were slightly lower than the flows at Node N3 for all events (Table 9 and Figure 14a). Likewise, the flows at Node N5 were slightly lower than flows at Junction J2. For the HEC-RAS model we have taken the greater of the two for all individual events[7] (Table 9).

Downstream Boundary Condition: Known or estimated water levels are usually used as downstream boundary conditions in HEC-RAS models. In this case, estimated spring flood levels and summer navigation level in the Rideau River are known (RVCA, 2017a), as shown in Table 10. However, the spring flood levels were not used because the modeling of the Mosquito was done for the summer condition. The navigation level was also found unsuitable because of grade difference (there was a 1 to 2 m drop of water surface from Mosquito Creek to the Rideau River). This left us with the option of using either a critical or normal depth condition. We have chosen the normal depth condition because it was conservative and produced more plausible water surface profiles.

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

[7] This can be explained by the presence of deep ravines and valleys along this reach. During small storm events (e.g., 2 to 20 year), the flow in this reach is mainly contained within the main channel, the valley storage does not come into play, and the downstream (peak) flow is greater than the upstream flow. However, during high flow events (50 year and up), the flow fills the valley, the valley attenuates the flow to a large degree, and the downstream (peak) flow becomes smaller than the upstream flow. In other words, in this case, the attenuating effect of deep valley storage is more profound than the locally generated runoff.

Suitable data to calibrate or validate the HEC-RAS model was not available. Therefore, no calibration was done[8]. However, we exercised professional judgement and tried to be slightly on the conservative side. Our approach of slight conservatism (a combination of hydrologic and hydraulic computations) is also congruent with the current notion of the Precautionary Principle, which applies when there exist considerable scientific uncertainties about causality, magnitude, probability, and consequences of different course of action (UNESCO 2005). The Precautionary Principle is also a key policy of Environment Canada[9].

5.2 Computed Water Surface Profiles

The HEC-RAS model was run with the design floods. The 1:100 year computed water surface elevations and other parameters are shown in Table 13. Typical water surface profiles and all cross-sections are included in Appendix B.

Computed water surface elevations for various flood events with return periods ranging from 2 to 500 years are presented in Tables 14 and 15. It should be pointed out that the model has been built for the expected conditions prevailing during intense rainfall-generated flood events in the summer. Caution should be used when applying this model to simulate water surface profiles for events of other magnitude and during other seasons of the year.

Computed head losses across road crossings are listed in Table 12.

In cold climate areas like Ontario, spring floods may also be accompanied by ice jams. Here we have only analyzed the summer floods, not the spring floods. We are unaware of any ice-related flooding that caused significant concern in this area.

[8] Given the constraints, this HEC-RAS model is the best we could build for the limited purpose of floodplain mapping at this time. We recognize that this model may not be suitable for other purposes. Further model improvement/adjustment/modification may be necessary for other purposes; it all depends on the purpose of the modeling and the features and phenomena a model is meant to capture. We therefore caution against using this model for other purposes without first confirming its suitability.

[9] Canada's environmental policy is also guided by the precautionary principle and is reflected in the Federal Sustainable Development Act (2008), which states that the Minister of Environment must "develop a Federal Sustainable Development Strategy based on the precautionary principle". The precautionary principle states that: "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation". In other words, the absence of complete scientific evidence to take precautions does not mean that precautions should not be taken – especially when there is a possibility of irreversible damage (Environment Canada, 2010).

5.3 Sensitivity Analysis

Flood quantiles have the highest degree of uncertainty in our computation and is most likely to affect the water surface profile. Therefore, we decided to test the sensitivity of water surface profile to a wide variation in flow.

The sensitivity analysis was conducted to determine how much the computed water surface elevations will vary with changes in the value used for the 1:100 year discharge. Six flow conditions were tested:

- 1:100 year flow increased by 10%
- 1:100 year flow increased by 25%
- 1:100 year flow increased by 50%
- 1:100 year flows decreased by 10%
- 1:100 year flow decreased by 25%
- 1:100 year flow decreased by 50%

Figures 18a-c and 19a-c show the computed water surface profiles and the differences in computed water levels for each condition. Figures 18a-c indicate that the computed water surface elevations are less sensitive to the discharge value in the steeper portions of the reach and more sensitive upstream of road crossings. The sensitivity analysis indicates that the computed water level can vary in the range from -1.75 m to 0.80 m for a ±25% variation in flow along most of the river reach, which is typical in the hydrologic estimation of design flow. For a 50% increase in flow, the water level, on average, can go up by about 0.30-1.10 m. This analysis indicates that the road crossings have a significant effect on the flood level, especially in the downstream reach of Mosquito Creek.

The sensitivity analysis provides an indication of the potential implications of inaccuracies in flow estimation, and changes in the expected flood flows that might result from urbanization and climate change.

6. Selection of Regulatory Flood Levels

As per Section 3 of the Provincial Policy Statement under the Planning Act (MMAH, 2005, 2014, 2020), the regulatory flood in Zone 2, which includes the RVCA, is the 1:100 year flood. Depending on the local hydraulic conditions, the computed water surface elevation, the energy grade or a value in between is generally taken as the Regulatory Flood Level (RFL). Engineering judgment is applied to recommend an appropriate value for the regulatory flood level at each cross-section, using the model outputs and considering hydraulic characteristics of the river reach, and the inherent limitations of numerical modeling.

When the stream velocity is relatively low and varies only gradually over relatively long river reaches, the water surface can generally be taken as the RFL.

However, near bridges, culverts and other water control structures and on steeper reaches where streamflow velocities are higher, and may change more abruptly, the computed water surface elevation may be substantially lower than the energy grade level, with the possibility that the water level may rise to the energy grade near obstacles and irregularities in the channel profile or cross-section which may not be represented in the hydraulic model. In such cases, the regulatory flood level is generally based on the computed energy grade as a conservative approach, given that the model-generated water surface elevation is less likely to be a true representation of flood risk in such situations.

Another possible situation arises when the computed water surface profile is undulating, with downstream water levels occasionally higher than upstream levels. When this occurs, it is more often an artifact from the simplifying assumptions of the modeling scheme than a reliable prediction of the actual differences in streamflow velocity and depth (and hence energy grade) from one cross-section to the next. Accordingly, the regulatory flood level at the upstream cross-section is taken to be equivalent to the downstream water surface elevation in these situations.

In all cases, the RFL is always between the computed water level and energy grade line. Hence, for the sake of simplicity and consistency, the energy grade elevation is often used as the RFL as a standard practice in delineating flood hazard areas.

For the present study, the regulatory flood levels were set equal to the computed energy grade and are tabulated in Table 13, along with the computed water surface elevations and energy grades at each cross-section in the model.

7. Flood Line Delineation

7.1 General

Once the RFLs are established, the plotting of 1:100 year flood lines or flood risk limits is a relatively straightforward matter. Given the topographical information in the form of LIDAR spot heights, the inundated area below the RFLs can be easily delineated manually or by using automated computer programs. In the present case, the automated process was used for most of the river reach. However, it was done manually in areas with complex topography, infrastructure, and overbank flow paths. The raw LIDAR spot heights were extensively used in the plotting the flood risk limit.

Field surveys were conducted by RVCA staff in August of 2020 to verify hydraulic connectivity through culvert openings and in flood prone areas (Table 17). This information was used to plot the areas flooded through road openings.

The record of site-specific information associated with RVCA's regulatory approval process since 2011 was checked (Table 16). It was found that two site-specific work would affect the flood risk lines. Appropriate adjustment of the flood lines were made.

Drawings MQ-1 and MQ-2 in Appendix F depict the delineated floodplain.

7.2 Buildings in the Floodplain

Presence of existing buildings within the floodplain and associated variation in the way a building could be exposed to flood risk required special attention. Recently, RVCA has consolidated a few rules for drawing flood lines in the vicinity of buildings (Appendix A), which have been followed in this study. Due to the limitations of the data and methodology used in the current mapping done at a large scale, and the small degree of (inevitable) subjectivity in drawing flood lines around buildings at a smaller scale, RVCA recommends that, should the need arise for accurate flood line delineation near buildings, site-specific information be taken into account when dealing with flood risk at these locations. It is the practice of RVCA to refine flood lines when more accurate information becomes available.

7.3 Islands in the Floodplain

Presence of small islands, especially those associated with septic beds, within the floodplain also requires special attention. Recently, RVCA has decided to show small islands with an area less than 1000 m^2 as flood risk area (Appendix A) This guidance was followed during this study.

7.4 Spill Sections

Four spill sections have been identified (Drawing MQ-1). All of them are minor in nature and are expected to convey insignificant flow. Therefore, no flow adjustment has been made. The spill from the Mosquito Creek near its outfall to the Rideau River seems to be along an abandoned branch of the Rideau River. The other three spills flow out of municipal drains and appear to be manifestations of local micro-topography.

7.5 Flood Mapping Data in GIS

The regulatory flood lines and cross-sections have been incorporated as separate layers in RVCA's Geographical Information System (GIS). In this system, one can view the flood lines, cross-sections, design flow, water level, energy grade, RFL, and other computed parameters. The flood lines can be overlain on the aerial photography or any other base mapping layers that are in the system and at any scale that suits the user's need.

The regulatory flood line layer is maintained and updated as required according to the established procedures of the RVCA (RVCA 2005).

Drawings MQ-1 and MQ-2 show the flood risk limits as delineated in this study. At all cross-section locations, the RFL is indicated. The general surroundings and landmarks are also included for easy referencing.

8. Project Deliverables

The key information or knowledge products generated from this project are:

1) The Flood Mapping Report (this Technical Memorandum) – which summarizes the analytical methods that were used and the underlying assumptions
2) SWMHYMO model files
3) HEC-RAS model files
4) The flood risk limit lines in GIS format (shape files) – identifying the extent of lands which are considered to be vulnerable to flooding during a regulatory flood event (1:100 year flood)
5) The position and orientation of cross-sections used in the HEC-RAS model, in GIS format (shape files) – which, when used in conjunction with the HEC-RAS model output files, informs the user as to the estimated 1:100 year water surface elevation and the regulatory flood level for any location in the study area

A "documentation folder" containing working notes and relevant background information accumulated during the study process is maintained by the water resources engineering unit within RVCA's Watershed Science and Engineering Services department.

9. Closure

The hydrotechnical and cartographic procedures used in this study generally conform to present day standards for flood hazard delineation, as set out in the MNR's Natural Hazards Technical Guide (MNR, 2002). The resulting 1:100 year flood lines are suitable for use in the RVCA's regulation limits mapping (as per Ontario Regulation 174/06) and in municipal land use planning and development approval processes under the Planning Act.

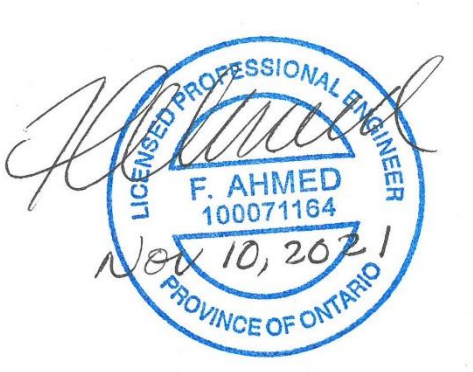

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Table 1 Land use breakdown in the Mosquito Basin

		Catchment	M1		M2		*M3*		M4		M5		TA1	
	Code	Land use description	Area (km^2)	*%*	Area (km^2)	*%*	Area (km^2)	*%*	Area (km^2)	*%*	Area (km2)	*%*	Area (km2)	*%*
1	R1	Single -detached residential	0.35	*3.96*	0.68	*30.59*	0.47	*7.84*	0.07	*13.31*	0.07	*4.58*	0.61	*9.62*
2	R1-L	Linked Single	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
3	R2	Semi -detached residential	0.28	*3.15*	0.23	*10.45*	0.50	*8.30*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
4	R3	Row and townhouse	0.16	*1.88*	0.09	*4.26*	0.07	*1.23*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
5	R3-S	Stacked townhouse	0.00	*0.00*	0.01	*0.44*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
6	R4-X	Duplex, triplex, single dwelling with apartment unit	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
7	R4	Apartment	0.18	*2.02*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
8	R5	Mobile	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.06	*0.92*
9	C1	Regional shopping center	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
10	C2	Community shopping center	0.02	*0.19*	0.01	*0.49*	0.04	*0.71*	0.00	*0.00*	0.00	*0.00*	0.07	*1.12*
11	C3	Other Commercial	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.02	*0.39*
12	I1	Elementary school	0.07	*0.75*	0.01	*0.33*	0.07	*1.09*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
13	I2	Secondary school	0.06	*0.67*	0.00	*0.00*	0.05	*0.78*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
14	I3	Post-secondary school	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
15	I3-r	Student campus residences	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
16	I4	Hospital, rehabilitation, nursing home	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
17	I5	Other Institution	0.01	*0.11*	0.02	*1.12*	0.02	*0.34*	0.00	*0.00*	0.00	*0.00*	0.03	*0.48*
18	M1	Industrial	0.07	*0.84*	0.00	*0.00*	0.86	*14.29*	0.10	*19.21*	0.49	*32.18*	0.07	*1.08*
19	M2	Industrial mall-condo	0.12	*1.32*	0.36	*16.41*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
20	TR	Transportation	0.00	*0.00*	0.00	*0.00*	0.63	*10.60*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
21	UT	Utility	0.00	*0.00*	0.00	*0.00*	0.01	*0.09*	0.00	*0.00*	0.00	*0.00*	0.00	*0.01*
22	COMM	Communications	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
23	OF	Office	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
24	RE-A	Active recreation	1.21	*13.83*	0.05	*2.03*	0.30	*5.04*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
25	RE-A-s	Active recreation on school property	0.00	*0.00*	0.00	*0.00*	0.05	*0.84*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
26	RE-P	Passive Recreation	0.36	*4.14*	0.22	*10.05*	0.42	*7.08*	0.25	*48.88*	0.06	*3.81*	0.00	*0.00*
27	RE-P-s	Passive recreation on school property	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
28	OS	Open space	0.00	*0.00*	0.00	*0.00*	0.00	*0.02*	0.00	*0.00*	0.01	*0.48*	0.00	*0.00*
29	ROS	Idle and shrub Land	1.25	*14.31*	0.02	*1.10*	1.43	*23.90*	0.06	*12.28*	0.17	*11.03*	1.67	*26.30*
30	AG	Agriculture	3.36	*38.39*	0.09	*4.15*	0.15	*2.53*	0.00	*0.00*	0.60	*39.60*	1.12	*17.62*
31	V1	Vacant Land	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
32	V2	Vacant building	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
33	FT	Forest	0.71	*8.07*	0.01	*0.38*	0.48	*7.96*	0.00	*0.00*	0.00	*0.00*	1.50	*23.66*
34	ST	Street	0.43	*4.86*	0.37	*16.63*	0.44	*7.30*	0.02	*3.19*	0.11	*7.45*	0.27	*4.29*
35	QS	Quarry	0.03	*0.33*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.77	*12.15*
36	WL	Wetland	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.03	*0.51*
37	WL-FT	Wetland	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.01*
38	WATER	Water	0.01	*0.17*	0.01	*0.48*	0.00	*0.04*	0.02	*3.13*	0.01	*0.84*	0.00	*0.00*
39	IW	Water	0.09	*1.00*	0.02	*1.09*	0.00	*0.00*	0.00	*0.00*	0.00	*0.04*	0.12	*1.84*
		Total	8.76	*100*	2.22	*100*	5.98	*100*	0.51	*100*	1.52	*100*	6.36	*100*

Note: Land use is based on City of Ottawa parcels which conform to the projected land use zoning according to the Official Plan of 2003, updated to Official Plan Amendment #222 in 2018, and as outlined in Riverside South CDP Draft Land Use Plan (Rev. 7). Smaller adjustments were made to account for additional developments outside of the CDP.

Table 1 Land use breakdown in the Mosquito Basin (continued)

		Catchment	*TA2*		TB1		TB2		TC1		Entire Mosquito	
	Code	Land use description	Area (km2)	%	Area (km2)	%	Area (km^2)	%	Area (km^2)	%	Area (km^2)	%
1	R1	Single -detached residential	0.10	*4.63*	0.98	*29.63*	0.36	*17.17*	2.00	*30.19*	5.69	*14.37*
2	R1-L	Linked Single	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
3	R2	Semi -detached residential	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.72	*10.88*	1.73	*4.36*
4	R3	Row and townhouse	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.37	*5.60*	0.70	*1.78*
5	R3-S	Stacked townhouse	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.01	*0.11*	0.02	*0.04*
6	R4-X	Duplex, triplex, single dwelling with apartment unit	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
7	R4	Apartment	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.18	*0.45*
8	R5	Mobile	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.06	*0.15*
9	C1	Regional shopping center	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
10	C2	Community shopping center	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.05	*0.79*	0.19	*0.49*
11	C3	Other Commercial	0.00	*0.00*	0.01	*0.35*	0.00	*0.00*	0.04	*0.63*	0.08	*0.20*
12	I1	Elementary school	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.18	*2.76*	0.32	*0.81*
13	I2	Secondary school	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.08	*1.17*	0.18	*0.46*
14	I3	Post-secondary school	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
15	I3-r	Student campus residences	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
16	I4	Hospital, rehabilitation, nursing home	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
17	I5	Other Institution	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.03	*0.41*	0.11	*0.29*
18	M1	Industrial	0.00	*0.00*	0.00	*0.12*	0.00	*0.00*	0.00	*0.00*	1.59	*4.01*
19	M2	Industrial mall-condo	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.26	*3.99*	0.74	*1.88*
20	TR	Transportation	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.05	*0.70*	0.68	*1.72*
21	UT	Utility	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.01	*0.02*
22	COMM	Communications	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
23	OF	Office	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.02*	0.00	*0.00*
24	RE-A	Active recreation	0.00	*0.00*	0.37	*11.06*	0.00	*0.00*	0.30	*4.54*	2.23	*5.62*
25	RE-A-s	Active recreation on school property	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.03	*0.38*	0.08	*0.19*
26	RE-P	Passive Recreation	0.04	*1.71*	0.05	*1.42*	0.00	*0.00*	0.46	*6.90*	1.86	*4.69*
27	RE-P-s	Passive recreation on school property	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.01	*0.11*	0.01	*0.02*
28	OS	Open space	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.01	*0.02*
29	ROS	Idle and shrub Land	0.74	*33.41*	0.27	*8.01*	0.17	*7.78*	0.10	*1.52*	5.88	*14.84*
30	AG	Agriculture	0.51	*23.15*	0.76	*23.01*	1.04	*49.09*	0.41	*6.24*	8.06	*20.34*
31	V1	Vacant Land	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
32	V2	Vacant building	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*
33	FT	Forest	0.64	*28.81*	0.66	*20.01*	0.43	*20.12*	0.25	*3.70*	4.67	*11.78*
34	ST	Street	0.10	*4.51*	0.20	*6.11*	0.10	*4.53*	1.23	*18.56*	3.26	*8.23*
35	QS	Quarry	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.80	*2.02*
36	WL	Wetland	0.08	*3.52*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.11	*0.28*
37	WL-FT	Wetland	0.01	*0.25*	0.00	*0.00*	0.03	*1.32*	0.00	*0.00*	0.03	*0.09*
38	WATER	Water	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.00	*0.00*	0.06	*0.14*
39	IW	Water	0.00	*0.00*	0.01	*0.27*	0.00	*0.00*	0.05	*0.79*	0.29	*0.73*
		Total	2.21	*100*	3.31	*100*	2.12	*100*	6.62	*100*	39.61	*100*

Note: Land use is based on City of Ottawa parcels which conform to the projected land use zoning according to the Official Plan of 2003, updated to Official Plan Amendment #222 in 2018, and as outlined in Riverside South CDP Draft Land Use Plan (Rev. 7). Smaller adjustments were made to account for additional developments outside of the CDP.

Table 2a Hydrological Soil Groups in Mosquito Basin

		Soil Group area (km^2)					as percent (%) of catchment area				
Catchment	Area (km^2)	A	B	C	D	Unclassified	A	B	C	D	Unclassified
M1	8.73	1.53	3.00	0.93	2.45	0.83	17.48	34.33	10.59	28.10	9.49
M2	2.22	0.00	0.26	0.08	1.71	0.17	0.00	11.66	3.74	77.05	7.54
M3	5.98	1.16	0.27	0.73	2.78	1.04	19.38	4.43	12.27	46.53	17.39
M4	0.51	0.00	0.00	0.00	0.34	0.17	0.00	0.00	0.00	66.61	33.39
M5	1.52	0.00	0.00	0.20	1.10	0.22	0.00	0.00	13.16	72.25	14.59
TA1	6.36	1.27	0.77	3.27	0.10	0.94	19.99	12.18	51.46	1.57	14.79
TA2	2.21	0.11	1.01	0.84	0.12	0.13	4.99	45.71	37.96	5.42	5.92
TB1	3.31	0.65	0.85	1.23	0.42	0.15	19.69	25.79	37.26	12.62	4.64
TB2	2.12	0.00	1.01	0.61	0.51	0.00	0.00	47.70	28.48	23.81	0.00
TC1	6.62	0.00	1.04	1.08	4.21	0.29	0.00	15.72	16.24	63.64	4.41
Entire Mosquito	39.59	4.72	8.21	8.97	13.74	3.95	11.92	20.75	22.65	34.72	9.97

Note: Based on MNRF's LIO (Land Information System) database and documentation by MNR (2012)

Note: Unclassified soils adjacent to stream channels were treated as HSG D. This was guided by an inspection of Figure 3a, where such areas were generally surrounded by HSG D. These areas are also likely to have fine sediments deposited along the channel and surrounding banks, reducing permeability as seen in Figure 3b. Low permeability areas generally coincide with HSG D.

Note: Unclassified soils in all other areas were treated as HSG B. This was also guided by an inspection of Figure 3a, where the areas were generally surrounded by HSG A and HSG B. Many of these areas coincided with high permeability in Figure 3b, however, many were associated with human activities (golf course, quarry, subdivision, etc) and as such compaction and other degradations of the soils can be assumed. Undisturbed sites were either associated with lower permeability in Figure 3b, or were surrounded by HSG B or HSG C. As such, an assumption of HSG B is only mildly conservative.

Table 2b Permeability in Mosquito Basin

		Permeability area (km^2)				as percent (%) of catchment area			
Catchment	Area (km^2)	High	Variable	Low-medium	Low	High	Variable	Low-medium	Low
M1	8.73	3.48	0.29	1.03	3.94	39.87	3.29	11.78	45.06
M2	2.22	0.00	0.22	0.08	1.92	0.00	9.77	3.61	86.63
M3	5.98	2.79	0.00	0.07	3.13	46.63	0.00	1.14	52.24
M4	0.51	0.00	0.00	0.00	0.51	0.00	0.00	0.00	100.00
M5	1.52	0.00	0.00	0.00	1.52	0.00	0.00	0.00	100.00
TA1	6.36	5.78	0.26	0.31	0.00	90.97	4.09	4.94	0.00
TA2	2.21	0.84	0.26	0.84	0.26	38.08	11.86	38.13	11.93
TB1	3.31	2.28	0.06	0.98	0.00	68.72	1.75	29.53	0.00
TB2	2.12	0.79	0.02	0.88	0.43	37.30	1.04	41.56	20.10
TC1	6.62	0.21	0.03	1.47	4.91	3.15	0.41	22.26	74.18
Entire Mosquito	39.59	16.17	1.13	5.67	16.61	40.85	2.86	14.32	41.97

Note: Based on Ontario Geological Survey surficial geology layer (OGS 2010)

Table 3a Estimated watershed parameters (Mosquito Creek)

Catchment	Area	Imperviousness	CN [1]	IA	CN* [2]	IA*	Tc [3]	Tp [4]	Model Method [5]
	(km^2)	(%)	---	(mm)	---	(mm)	(hr)	(hr)	---
M1	8.74	11.5	70.6	21.1	59.4	8.70	2.93	1.76	NASHYD
M2	2.22	50.9	86.7	7.8	82.2	2.75	---	---	STANDHYD
M3	5.99	31.2	75.2	16.7	65.6	6.66	---	---	STANDHYD
M4	0.51	31.9	85.0	9.0	79.6	3.25	---	---	STANDHYD
M5	1.52	29.1	86.4	8.0	81.7	2.84	---	---	STANDHYD
TA1	6.36	5.0	70.3	21.5	58.9	8.87	4.15	2.49	NASHYD
TA2	2.21	2.2	66.3	25.8	53.7	10.95	3.06	1.83	NASHYD
TB1	3.31	8.5	68.5	23.4	56.5	9.79	2.27	1.36	NASHYD
TB2	2.13	3.8	74.2	17.6	64.3	7.06	4.27	2.56	NASHYD
TC1	6.63	45.1	84.7	9.2	79.2	3.33	---	---	STANDHYD
Entire Mosquito	39.61	21.0	75.1	17.37	65.7	7.02	---	---	---

1) Calculated from land use and TR-55 Curve Number tables (Urban Hydrology for Small Watersheds by USDA-SCS, 1986)

2) Calculated based on equation $CN^*=100/(1.879((100/CN)-1)^{1.15}+1)$ (Curve Number Hydrology by Hawkins et al., 2009)

3) Calculated based on the velocity method (National engineering handbook Chapter 15 by USDA-NRCS, 2010)

4) Calculated based on $t_p = 0.6 \times t_c$

5) Watershed parameters presented here are suitable SWMHYMO inputs for NASHYD. Inputs for STANDHYD can be found in Table 3b

Note: CN* and IA* have been used in SWMHYMO; CN and IA are listed for information only.

Table 3b SWMHYMO STANDHYD parameters for urban catchments (Mosquito Creek)

Parameter	SWMHYMO Catchment ID									
	M1	**M2**	**M3**	**M4**	**M5**	**TA1**	**TA2**	**TB1**	**TB2**	**TC1**
AREA (ha)	874.0	222.3	598.8	50.7	152.0	636.3	220.8	331.3	212.6	662.6
TIMP	0.115	0.509	0.312	0.319	0.291	0.050	0.022	0.085	0.038	0.451
XIMP	---	0.458	0.281	0.288	0.262	---	---	---	---	0.406
LOSS	---	2	2	2	2	---	---	---	---	2
CNper	---	79.6	66.1	83.9	82.3	---	---	---	---	79.0
CNper*	---	71.8	53.4	78.0	75.7	---	---	---	---	70.9
Pervious surface										
AREAper (ha)	---	109.2	411.8	34.5	107.8	---	---	---	---	363.8
IAper (mm)	---	3.25	6.51	2.44	2.73	---	---	---	---	3.38
IAper* (mm)	---	4.99	11.08	3.58	4.08	---	---	---	---	5.21
SLPP (%)	---	2	2	2	2	---	---	---	---	2
LGP (m)	---	68	98	73	117	---	---	---	---	70
MNP	---	0.25	0.25	0.25	0.25	---	---	---	---	0.25
SCP (min)	---	0	0	0	0	---	---	---	---	0
Impervious surface										
AREAimp (ha)	---	113.1	187.0	16.2	44.3	---	---	---	---	298.8
IAimp (mm)	---	1.57	1.57	1.57	1.57	---	---	---	---	1.57
SLPI (%)	---	0.5	0.5	0.5	0.5	---	---	---	---	0.5
LGI (m)	---	1217	1998	582	1007	---	---	---	---	2102
MNI	---	0.013	0.013	0.013	0.013	---	---	---	---	0.013
SCI (min)	---	0	0	0	0	---	---	---	---	0

See notes on the next page.

Table 3b(continued) SWMHYMO STANDHYD parameters for urban catchments (Mosquito Creek)

Parameter	Description
AREA (ha)	Catchment area. Calculated based on topography.
TIMP	Ratio of total impervious area to catchment area. Calculated based on building footprint, roads, and the projected land use.
XIMP	Ratio of directly connected impervious area to catchment area. Estimated to be 90% of TIMP, based on results from catchment-specific GIS analysis and guidance for similar hydrologic models (Civica, 2018, pg. 5). The selected relationship was deemed slightly conservative and more representative than the 80% of TIMP relationship that was used by others (SNCA 2014, JFSA 2014).
LOSS	A pointer used to select the procedure to be used to calculate the losses over pervious surface. Optoins are: 1= Horton infiltration equation; 2= SCS CN procedure; 3= proportional loss coeffient). We used option 2, which ties well with the overall CN-based calculation.
CNper	Pervious Curve Number as per CALIB STANDHYD description for CN, "The SCS Curve Number for pervious surfaces", on pg. 7.14 of the SWMHYMO Manual (JFSA, 2000). Undeveloped land uses, such as Agriculture or Forest, were not modified. Developed land uses, such as Residential or Commercial, were processed in GIS to remove their impervious areas and the remaining pervious elements were assigned the CN for Open Space in Good Condition as per TR-55 (USDA-SCS, 1986, Table 2-2a, pg. 2-5). Refer Table 4b. This is not an input to SWMHYMO, it is an intermediate value needed to calculate CNper*.
CNper*	Conjugate of pervious Curve Number, calculated based on equation $CN^*=100/(1.879((100/CN)-1)^{1.15}+1)$ (Hawkins et al., 2009, Eq. 47, Pg, 35)
Pervious surface	
AREAper (ha)	Area of the pervious elements of the subcatchment, calculated as: AREAper = AREA(1-TIMP). This is not an input to SWMHYMO, provided for reference only.
IAper (mm)	Initial abstraction for pervious surfaces, calculated as IAper = 0.2((25400/CNper)-254) as adapted from Eq. 2-2 and 2-4 of TR-55 (USDA-SCS, 1986, pg. 2-1). This is not an input to SWMHYMO, provided for reference only.
IAper* (mm)	Initial abstraction conjugate for pervious surfaces, calculated as IAper* = 0.05((25400/CNper*)-254) as adapted from Eq. 2-2 of TR-55 (USDA-SCS, 1986, pg.2-1) and, assuming λ=0.05, the conjugate CN methodology detailed in Curve Number Hydrology (Hawkins et al., 2009, pg. 34-36).
SLPP (%)	Average pervious surface slope over which runoff travels. The values of SLPP usually represents the value of an average subdivision lot. This value is typical in the City of Ottawa and widely used by others (SNCA 2014, JFSA 2014).
LGP (m)	The average distance which surface water has to travel before it reaches the drainage system (i.e. street, ditch, creek, etc), for residential land uses the average lot depth is appropriate while for other land uses an average distance needs estimation. Estimates for each land use were made in GIS, as detailed in Table 4b, and used to generate area-weighted estimates for each catchment.
MNP	The representative roughness coefficient of the pervious surface over which water travels before reaching the street or the sewer system. Value selected is typical for SWMHYMO to represent sheet flow over a residential lot, as iidentified by the SWMHYMO Manual (JFSA, 2000, pg. 7.15).
SCP (min)	The storage coefficient for the linear reservoir of the pervious portion of the area. When set to '0', the model will compute the value of SCP based on the values of LGP, MNP, SLPP and maximum effective rainfall intensity over the pervious area; as described in the SWMHYMO Manual (JFSA, 2000, pg. 7.15).
Impervious surface	
AREAimp (ha)	Area of the impervious elements of the subcatchment, calculated as: AREAimp = AREA(TIMP). This not an input to SWMHYMO, provided for reference only.
IAimp (mm)	Initial abstraction for impervious surface. Typical value selected as per the City of Ottawa Sewer Design Guideline (2012, pg. 5.28).
SLPI (%)	Average impervious surface slope over which runoff travels. The values of SLPI usually represents the slope of conveyance pipes. This value is typical in the City of Ottawa and widely used by others (SNCA 2014, JFSA 2014).
LGI (m)	The drainage area's average representative overflow travel length of the main conveyance system which usually includes sewer pipes and roadside ditches. As per SWMHYMO Manual (JFSA, 2000, pg. 7.16), LGI = (AREA/CLI)^(0.5); where CLI = 1.5 as suggested for a similar hydrologic model (Civica, 2018, pg. 7).
MNI	The average roughness coefficient of the impervious surface over which water travels. For urban subdivisions this is assumed to be a mix of asphalt and concrete, and 0.013 is an appropriate value as per the SWMHYMO Manual (JFSA, 2000, pg. 7.16).
SCI (min)	The storage coefficient for the linear reservoir of the impervious portion of the area. When set to '0', the model will compute the value of SCI based on the values of LGI, MNI, SLPI and maximum effective rainfall intensity as per SWMHYMO Manual (JFSA, 2000, pg. 7.16). No other option is available.

Table 3c Estimated channel parameters (Mosquito Creek)

Channel	Length [1] (m)	Slope [2] (%)	Manning's "n" [3] ($s/m^{1/3}$)		
			LOB	Channel	ROB
C1	2670	0.205	0.061	0.039	0.062
C2	1580	0.178	0.059	0.038	0.058
C3	390	0.234	0.053	0.039	0.049
C4	1460	0.297	0.078	0.040	0.071
C5	980	0.094	0.054	0.031	0.057
C6	2390	0.199	0.063	0.032	0.055
C7	1590	0.168	0.061	0.028	0.055
Entire Mosquito	11060	0.198	0.062	0.035	0.059

1) Length of HEC-RAS centerline flowpath for the 100-yr event, within associated routing catchment.

2) Slope = Rise/Run, where Rise was the difference in minimum channel elevations of HEC-RAS cross-sections closest to channel ends.

3) Obtained by averaging the HEC-RAS values within each channel, which themselves were determined from site visits and DRAPE (2014) photography using roughness coefficients outlined by Chow (1959).

Table 4a Curve number for different land use and soil groups

	City of Ottawa Land Use [1]		Corresponding TR-55 land cover category [2]		Assigned Curve Number (CN) [3]			
			Cover description		Soil group			
	LU_2010 code	Land use description	Cover type	Hydrologic condition	A	B	C	D
1	R1	Single -detached residential	Residential district (average lot size 2 acres)	N/A	46	65	77	82
2	R1-L	Linked Single	Residential district (average lot size 2 acres)	N/A	46	65	77	82
3	R2	Semi -detached residential	Residential district (average lot size 1/4 acre)	N/A	61	75	83	87
4	R3	Row and townhouse	Residential district (average lot size 1/8 acre or less (townhouse))	N/A	77	85	90	92
5	R3-S	Stacked townhouse	Residential district (average lot size 1/8 acre or less (townhouse))	N/A	77	85	90	92
6	R4-X	Duplex, triplex, single dwelling with apartment unit	Residential district (average lot size 1/4 acre)	N/A	61	75	83	87
7	R4	Apartment	Residential district (average lot size 1 acre)	N/A	51	68	79	84
8	R5	Mobile	Residential district (average lot size 1/8 acre or less (townhouse))	N/A	77	85	90	92
9	C1	Regional shopping center	Commercial and business	N/A	89	92	94	95
10	C2	Community shopping center	Commercial and business	N/A	89	92	94	95
11	C3	Other Commercial	Commercial and business	N/A	89	92	94	95
12	I1	Elementary school	Commercial and business	N/A	89	92	94	95
13	I2	Secondary school	Commercial and business	N/A	89	92	94	95
14	I3	Post-secondary school	Commercial and business	N/A	89	92	94	95
15	I3-r	Student campus residences	Commercial and business	N/A	89	92	94	95
16	I4	Hospital, rehabilitation, nursing home	Commercial and business	N/A	89	92	94	95
17	I5	Other Institution	Commercial and business	N/A	89	92	94	95
18	M1	Industrial	Industrial	N/A	81	88	91	93
19	M2	Industrial mall-condo	Industrial	N/A	81	88	91	93
20	TR	Transportation	Paved Parking lots, roofs, driveways. Etc (excluding right of way)	N/A	98	98	98	98
21	UT	Utility	Industrial	N/A	81	88	91	93
22	COMM	Communications	Industrial	N/A	81	88	91	93
23	OF	Office	Industrial	N/A	81	88	91	93
24	RE-A	Active recreation	Open space (lawns, parks, golf courses, cemeteries, etc)	Good condition (grass cover >75%)	39	61	74	80
25	RE-A-s	Active recreation on school property	Open space (lawns, parks, golf courses, cemeteries, etc)	Good condition (grass cover >75%)	39	61	74	80
26	RE-P	Passive Recreation	Open space (lawns, parks, golf courses, cemeteries, etc)	Fair condition (Grass cover 50% to 75%)	49	69	79	84
27	RE-P-s	Passive recreation on school property	Open space (lawns, parks, golf courses, cemeteries, etc)	Fair condition (Grass cover 50% to 75%)	49	69	79	84
28	OS	Open space	Open space (lawns, parks, golf courses, cemeteries, etc)	Fair condition (Grass cover 50% to 75%)	49	69	79	84
29	ROS	Idle and shrub Land	Brush--brush weed grass mixture with brush the major element	Good (>75% ground cover)	30	48	65	73
30	AG	Agriculture	Row Crops	Good	64	75	82	85
31	V1	Vacant Land	Brush--brush weed grass mixture with brush the major element	Good (>75% ground cover)	30	48	65	73
32	V2	Vacant building	Residential district (average lot size 1/8 acre or less (townhouse))	N/A	77	85	90	92
33	FT	Forest	Wood	Good	30	55	70	77
34	ST	Street	Streets and roads	N/A	98	98	98	98
35	QS	Quarry	Industrial	N/A	81	88	91	93
36	WL	Wetland	N/A	N/A	98	98	98	98
37	WL-FT	Wetland	N/A	N/A	98	98	98	98
38	WATER	Water	N/A	N/A	98	98	98	98
39	IW	Water	N/A	N/A	98	98	98	98

1) Land use codes based on City of Ottawa Parcels LU_2010 recived in 2015

2) Values and descriptors extracted from TR-55 "Urban Hydrology for Small Watersheds", USDA, Natural Resources Conservation Service, June 1986

Table 4b CNper and LGP lookups for CALIB STANDHYD in SWMHYMO

	City of Ottawa Land Use [1]		Corresponding TR-55 land cover category [2]		Assigned Curve Number (CN) [3]				Average Percent Impervious [4]	LGP [5]
			Cover description		Soil group					
	LU_2010 code	Land use description	Cover type	Hydrologic condition	A	B	C	D		(m)
1	R1	Single -detached residential	Residential district (average lot size 2 acres)	N/A	39	61	74	80	12	40
2	R1-L	Linked Single	Residential district (average lot size 2 acres)	N/A	39	61	74	80	12	40
3	R2	Semi -detached residential	Residential district (average lot size 1/4 acre)	N/A	39	61	74	80	38	40
4	R3	Row and townhouse	Residential district (average lot size 1/8 acre or less (townhouse))	N/A	39	61	74	80	65	40
5	R3-S	Stacked townhouse	Residential district (average lot size 1/8 acre or less (townhouse))	N/A	39	61	74	80	65	40
6	R4-X	Duplex, triplex, single dwelling with apartment unit	Residential district (average lot size 1/4 acre)	N/A	39	61	74	80	20	40
7	R4	Apartment	Residential district (average lot size 1 acre)	N/A	39	61	74	80	20	40
8	R5	Mobile	Residential district (average lot size 1/8 acre or less (townhouse))	N/A	39	61	74	80	12	40
9	C1	Regional shopping center	Commercial and business	N/A	39	61	74	80	85	90
10	C2	Community shopping center	Commercial and business	N/A	39	61	74	80	85	90
11	C3	Other Commercial	Commercial and business	N/A	39	61	74	80	85	90
12	I1	Elementary school	Commercial and business	N/A	39	61	74	80	72	90
13	I2	Secondary school	Commercial and business	N/A	39	61	74	80	72	90
14	I3	Post-secondary school	Commercial and business	N/A	39	61	74	80	72	90
15	I3-r	Student campus residences	Commercial and business	N/A	39	61	74	80	72	90
16	I4	Hospital, rehabilitation, nursing home	Commercial and business	N/A	39	61	74	80	72	90
17	I5	Other Institution	Commercial and business	N/A	39	61	74	80	72	90
18	M1	Industrial	Industrial	N/A	39	61	74	80	72	100
19	M2	Industrial mall-condo	Industrial	N/A	39	61	74	80	72	100
20	TR	Transportation	Paved Parking lots, roofs, driveways. Etc (excluding right of way)	N/A	98	98	98	98	100	90
21	UT	Utility	Industrial	N/A	39	61	74	80	72	80
22	COMM	Communications	Industrial	N/A	39	61	74	80	72	100
23	OF	Office	Industrial	N/A	39	61	74	80	85	90
24	RE-A	Active recreation	Open space (lawns, parks, golf courses, cemeteries, etc)	Good condition (grass cover >75%)	39	61	74	80	0	80
25	RE-A-s	Active recreation on school property	Open space (lawns, parks, golf courses, cemeteries, etc)	Good condition (grass cover >75%)	39	61	74	80	0	80
26	RE-P	Passive Recreation	Open space (lawns, parks, golf courses, cemeteries, etc)	Fair condition (Grass cover 50% to 75%)	49	69	79	84	0	80
27	RE-P-s	Passive recreation on school property	Open space (lawns, parks, golf courses, cemeteries, etc)	Fair condition (Grass cover 50% to 75%)	49	69	79	84	0	80
28	OS	Open space	Open space (lawns, parks, golf courses, cemeteries, etc)	Fair condition (Grass cover 50% to 75%)	49	69	79	84	0	40
29	ROS	Idle and shrub Land	Brush--brush weed grass mixture with brush the major element	Good (>75% ground cover)	30	48	65	73	0	100
30	AG	Agriculture	Row Crops	Good	64	75	82	85	0	150
31	V1	Vacant Land	Brush--brush weed grass mixture with brush the major element	Good (>75% ground cover)	30	48	65	73	0	100
32	V2	Vacant building	Residential district (average lot size 1/8 acre or less (townhouse))	N/A	39	61	74	80	65	40
33	FT	Forest	Wood	Good	30	55	70	77	0	200
34	ST	Street	Streets and roads	N/A	98	98	98	98	100	0
35	QS	Quarry	Industrial	N/A	39	61	74	80	85	100
36	WL	Wetland	N/A	N/A	98	98	98	98	100	0
37	WL-FT	Wetland	N/A	N/A	98	98	98	98	100	0
38	WATER	Water	N/A	N/A	98	98	98	98	100	0
39	IW	Water	N/A	N/A	98	98	98	98	100	0

1) Land use codes based on City of Ottawa Parcels LU_2010 recived in 2015

2) Values and descriptors extracted from TR-55 "Urban Hydrology for Small Watersheds", USDA, Natural Resources Conservation Service, June 1986

3) For pervious CN calculations required for urban subcatchments, CN values for Open Space in Good Condition were used instead of the highlighted values, as described in TR55 "Urban Hydrology for Small Watersheds" (USDA-NRCS, 1986)

4) Values extracted from TR-55 "Urban Hydrology for Small Watersheds" (USDA-NRCS, 1986) in accordance with associated cover type. Used to develop imperviousness estimates for future developments identified in the City of Ottawa's Official Plan, as seen in Figure 5, where complete and detailed impervious GIS data does not yet exist.

5) LGP estimates are based on average lot depths for residential land uses and for other land uses was the average distance flows would travel before being intercepted by the drainage network.

Table 5 Characteristics of design storms

	Duration	Total volume	Peak intensity	Time step	Source of hyetograph shape
	(hour)	(mm)	(mm/hr)	(minutes)	
Chicago 3 hour	3	74.43	168.71	10	Generated by STORMS software
Chicago 6 hour	6	88.42	168.71	10	Generated by STORMS software
Chicago 12 hour	12	104.44	168.71	10	Generated by STORMS software
Chicago 24 hour	24	123.02	168.71	10	Generated by STORMS software
SCS 3 hour	3	74.47	80.87	30	City of Ottawa Sewer Design Guidelines 2012
SCS 6 hour	6	88.43	85.25	30	City of Ottawa Sewer Design Guidelines 2012
SCS 12 hour	12	104.44	89.40	30	City of Ottawa Sewer Design Guidelines 2012
SCS 24 hour	24	123.01	93.49	30	Generated by STORMS software

Table 6 Estimated peak flows generated by various storms

Storm	3H Chicago	6H Chicago	12H Chicago	24H Chicago	3H SCS	6H SCS	12H SCS	**24H SCS**
Return Period	100 year	100 year	100 year	100 year	100 year	100 year	100 year	**100 year**
Flow	(cms)	(cms)	(cms)	(cms)	(cms)	(cms)	(cms)	**(cms)**
Catchments								
M1	11.95	13.60	15.39	17.44	12.55	15.09	17.49	**20.30**
M2	30.65	31.88	33.21	34.29	22.95	25.76	28.91	**32.02**
M3	38.40	39.63	41.19	43.01	30.46	34.02	38.41	**43.96**
M4	6.39	6.89	7.28	7.65	4.96	5.83	6.70	**7.61**
M5	14.14	15.12	15.97	17.06	11.19	13.38	15.55	**18.01**
TA1	6.45	7.66	8.62	9.73	6.61	8.36	9.68	**11.18**
TA2	2.32	2.67	3.04	3.48	2.43	2.98	3.49	**4.11**
TB1	4.81	5.48	6.26	7.16	5.19	6.17	7.22	**8.47**
TB2	2.59	3.05	3.41	3.81	2.65	3.31	3.79	**4.32**
TC1	67.51	70.44	73.89	76.85	55.19	62.33	69.98	**77.80**
Nodes								
N1	23.70	28.13	31.81	35.94	24.37	30.87	35.79	**41.05**
N2	30.68	31.94	33.35	37.36	23.43	31.56	37.25	**42.02**
N3	64.18	66.78	69.85	73.20	51.79	57.95	66.09	**76.61**
N4	53.70	56.00	58.55	61.34	49.55	53.86	58.87	**66.33**
N5	105.80	112.35	118.30	124.39	100.68	109.43	119.11	**132.08**
N6	6.45	7.66	8.62	9.73	6.61	8.36	9.68	**11.18**
N7	8.07	9.75	11.00	12.32	8.26	10.63	12.25	**13.99**
N8	4.81	5.48	6.26	7.16	5.19	6.17	7.22	**8.47**
N9	6.99	7.97	8.99	10.14	7.31	8.82	10.16	**11.72**
N10	67.51	70.44	73.89	76.85	55.19	62.33	69.98	**77.80**
J1	14.74	17.36	19.64	22.13	15.25	19.11	22.08	**25.33**
J2	115.42	121.01	127.18	132.95	101.28	112.00	124.04	**138.75**

Table 7 SCS Type II 24 hour design storms for different return periods

Return Period	Total volume	Peak intensity	Time step	hyetograph generated by
(year)	(mm)	(mm/hr)	(minutes)	
2	50.48	38.08	30	STORMS software
5	70.01	53.21	30	STORMS software
10	82.57	62.75	30	STORMS software
20	95.07	72.25	30	STORMS software
50	110.92	84.3	30	STORMS software
100	**123.01**	**93.49**	**30**	**STORMS software**
200	134.57	102.27	30	STORMS software
350	144.20	109.59	30	STORMS software
500	150.84	114.64	30	STORMS software

Table 8 Estimated peak flows for SCS Type II 24 hour design storm

Storm	24 hour SCS Type II								
Return Period	2 year	5 year	10 year	20 year	50 year	**100 year**	200 year	350year	500 year
Flow	(cms)	(cms)	(cms)	(cms)	(cms)	**(cms)**	(cms)	(cms)	(cms)
Catchments									
M1	3.31	6.89	9.62	12.64	16.85	**20.30**	23.77	26.78	28.92
M2	8.66	14.09	17.90	22.07	27.51	**32.02**	36.32	40.08	42.52
M3	11.15	17.99	23.10	28.78	36.99	**43.96**	51.06	57.46	62.04
M4	1.81	3.19	4.12	5.14	6.53	**7.61**	8.70	9.66	10.27
M5	3.97	6.87	9.21	11.68	15.12	**18.01**	20.63	23.03	24.83
TA1	1.81	3.78	5.28	6.95	9.27	**11.18**	13.09	14.76	15.94
TA2	0.58	1.29	1.85	2.48	3.37	**4.11**	4.86	5.51	5.98
TB1	1.28	2.77	3.91	5.19	6.99	**8.47**	9.97	11.28	12.20
TB2	0.79	1.56	2.13	2.76	3.62	**4.32**	5.02	5.62	6.05
TC1	19.73	32.84	42.33	52.48	66.44	**77.80**	89.37	99.11	106.20
Nodes									
N1	6.31	13.73	19.24	25.56	34.41	**41.05**	47.44	53.07	57.06
N2	8.78	14.64	19.99	26.24	35.19	**42.02**	48.66	54.44	58.54
N3	19.54	31.60	40.33	50.47	64.63	**76.61**	88.80	99.68	107.03
N4	17.85	29.76	38.53	46.53	57.17	**66.33**	75.93	84.79	90.94
N5	34.95	57.45	74.03	90.52	113.07	**132.08**	151.39	169.01	181.60
N6	1.81	3.78	5.28	6.95	9.27	**11.18**	13.09	14.76	15.94
N7	2.16	4.67	6.62	8.79	11.79	**13.99**	16.26	18.28	19.70
N8	1.28	2.77	3.91	5.19	6.99	**8.47**	9.97	11.28	12.20
N9	1.90	4.01	5.63	7.41	9.80	**11.72**	13.65	15.31	16.53
N10	19.73	32.84	42.33	52.48	66.44	**77.80**	89.37	99.11	106.20
J1	3.92	8.37	11.83	15.84	21.26	**25.33**	29.40	32.93	35.46
J2	37.24	61.95	79.24	96.04	119.48	**138.75**	158.77	176.92	189.90

Table 9 Estimated flows for hydraulic modeling (HEC-RAS)

		Return Period (year)	2	5	10	20	50	**100**	200	350	500
Stream	Reach	Nearest Cross Section	Distance from Rideau Confluence (m)	Flow (cms)								
Mosquito Creek	Reach1	1630	7066	3.92	8.37	11.83	15.84	21.26	**25.33**	29.40	32.93	35.46
Mosquito Creek	Reach1	1590	6500	6.31	13.73	19.24	25.56	34.41	**41.05**	47.44	53.07	57.06
Mosquito Creek	Reach1	1415	4222	8.78	14.64	19.99	26.24	35.19	**42.02**	48.66	54.44	58.54
Mosquito Creek	Reach1	1305	2821	19.54	31.60	40.33	50.47	64.63	**76.61**	88.80	99.68	107.03
Mosquito Creek	Reach1	1265	2404	17.85 *19.54*	29.76 *31.60*	38.53 *40.33*	46.53 *50.47*	57.17 *64.63*	**66.33** ***76.61***	75.93 *88.80*	84.79 *99.68*	90.94 *107.03*
Mosquito Creek	Reach1	1190	977	37.24	61.95	79.24	96.04	119.48	**138.75**	158.77	176.92	189.90
Mosquito Creek	Reach1	1175	807	34.95 *37.24*	57.45 *61.95*	74.03 *79.24*	90.52 *96.04*	113.07 *119.48*	**132.08** ***138.75***	151.39 *158.77*	169.01 *176.92*	181.60 *189.90*
Tributary A	Reach1	2275	7266	1.81	3.78	5.28	6.95	9.27	**11.18**	13.09	14.76	15.94
Tributary A	Reach1	2210	9064	2.16	4.67	6.62	8.79	11.79	**13.99**	16.26	18.28	19.70
Tributary B	Reach1	3225	7803	1.28	2.77	3.91	5.19	6.99	**8.47**	9.97	11.28	12.20
Tributary B	Reach1	3215	7512	1.90	4.01	5.63	7.41	9.80	**11.72**	13.65	15.31	16.53

Note: Cells with two values identify reaches where upstream flows were greater than downstream flows in the hydrologic (SWMHYMO) model. As attenuation would not occur immediately, the underlined values representing upstream flows were used throughout the reach in the HEC-RAS model to remain conservative.

Table 10 Computed water level and energy grade at Rideau River

Return Period (years)	Water Level Cross Section 10575 (m)	Energy Grade Cross Section 10575 (m)
2	78.25	78.26
5	78.62	78.64
10	78.79	78.82
20	78.92	78.95
50	79.06	79.09
100	79.15	79.19
200	79.24	79.27
350	79.29	79.32
500	79.33	79.37

Source: RVCA (2017) Rideau River Flood Risk Mapping from Hogs Back to Kars, 17 July 2017. (https://www.rvca.ca/media/k2/attachments/RideauMappingHBtoKars.pdf)

Notes: 1) The navigation level of the Rideau River at the mouth of Mosquito Creek is 77.8 masl.
2) A normal depth boundary condition of 0.001 m/m was approximated from nearby bed slopes and was used in the Mosquito Creek HEC-RAS model.

Table 11 Structures on Mosquito Creek

Stream	Location	Bridge or Culvert	Chainage (m)	Bounding Cross Sections	Width[1,2] (m)	Height[1] (m)	Length[3] (m)	Upstream Invert[1] (m)	Downstream Invert[1] (m)	Upstream Obvert[1] (m)	Downstream Obvert[1] (m)	Source(s)
Mosquito Creek	River Road	B	535	1135 & 1140	18.10	3.86	13.50	75.96	75.56	79.82	79.58	RVCA Survey May 6th 2019, and City of Ottawa drawing: Nixon's Bridge Reconstruction, Drawing # B-270207-3, -5 Parker Consultants. May 1987.
Mosquito Creek	Leitrim Road	C	774	1165 & 1170	7.22	4.66	32.72	75.84	75.84	80.50	80.50	RVCA Survey May 6th 2019, and City of Ottawa drawing: Mulligans Bridge Structure No. 2701, Drawing # B-270109-3, -5, -6. August 1984.
Mosquito Creek	Spratt Road	C	2630	1285 & 1290	6.00	2.75	52.50	81.56	81.54	84.31	84.29	RVCA Survey May 6th 2019, and City of Ottawa drawing: Spratt Road Crossing of Mosquito Creek, Drawing # 15, S-CPCU, D-2 Stantec. June 2002.
Mosquito Creek	Limebank Road	B	3518	1355 & 1360	17.60	6.05	28.30	84.02	84.50	91.12	90.55	RVCA Survey May 6th 2019, and City of Ottawa drawing: Limebank Road Widening - Phase 2, Drawing # B22703002-001 Remisz Consulting Engineers. March 2009.
Mosquito Creek	Earl Armstrong Road	C	4386	1425 & 1430	4.08 (4.37)	2.87	20.70	85.54	85.50	88.41	88.37	RVCA Survey May 6th 2019, and City of Ottawa drawing: Culvert Replacement Culvert No. 040 Armstrong Road, Drawing # 040-1 DS-Lea Associates. August 1996.
Tributary A	Rideau Road	C	7099	2105 & 2110	3.82 (3.89)	2.69	22.40	91.27	91.16	93.96	93.85	RVCA Survey May 6th 2019, and City of Ottawa drawing: Rideau Road Culvert Replacements, Drawing # C-22708000/C-22709000-001 Dillon Consulting. March 2009.
Tributary A	Osgoode Link Pathway	C	9247	2220 & 2225	3.82 (3.89)	2.69	16.00	96.18	95.96	98.87	98.65	RVCA Survey May 6th 2019, and City of Ottawa drawing: Osgoode Trail Culvert WP598, Drawing # 1 McCormick Rankin. December 2011.
Tributary A	Bowesville Road	C	9436	2250 & 2255	3.56 (3.65)	2.28	24.50	96.50	96.30	98.78	98.58	RVCA Survey May 6th 2019, and City of Ottawa drawing: Culvert 2720 Replacement Bowesville Road, Drawing # B22720001-001. February 2004.
Tributary B	Rideau Road	C	7100	3105 & 3110	2.40	2.40	17.80	91.41	91.32	93.81	93.72	RVCA Survey May 6th 2019, and City of Ottawa drawing: Rideau Road Culvert Replacements, Drawing # C-22708000/C-22709000-001 Dillon Consulting. March 2009.
Tributary B	Lot 26 Farm Access	C	7484	3145 & 3150	2.34	1.65	4.88	92.30	92.33	93.95	93.98	RVCA Survey August 19th 2020, and City of Ottawa Report: Engineer's Report - Nolan Municipal Drain. Graham, Berman and Associates Ltd. August 1968.
Tributary B	Lot 27 Farm Access	C	7696	3160 & 3165	2.34	1.65	4.88	92.69	92.68	94.34	94.33	RVCA Survey August 19th 2020, and City of Ottawa Report: Engineer's Report - Nolan Municipal Drain. Graham, Berman and Associates Ltd. August 1968.
Tributary B	Downey road	C	7925	3145 & 3150	3.00	1.80	12.50	92.93	92.84	94.73	94.64	RVCA Survey May 6th 2019, and City of Ottawa drawing: Downey Road Bridge Culvert over Nolan MD (SN227100), Drawing # 002, 003 Morrison Hershfield. November 2016.

1) From design drawings, confirmed by RVCA field measurements (2019/2020).
2) Bracketed values are design dimensions which did not work within HEC-RAS's options, modeled dimensions were selected to minimize difference while remaining mildly conservative.

Table 12 Calculated head loss at road crossings (during 1:100 Year flood)

Stream	Location	Chainage from Rideau River (m)	Bounding Cross Sections	Upstream Energy Grade (m)	Downstream Energy Grade (m)	Head Loss (cm)	Road Overtopped
Mosquito Creek	River road	535	1135 & 1140	80.50	80.07	43	No
Mosquito Creek	Leitrim Road	774	1165 & 1170	83.22	80.80	242	Yes
Mosquito Creek	Spratt Road	2630	1285 & 1290	88.04	84.88	316	Yes
Mosquito Creek	Limebank Road	3518	1355 & 1360	88.16	88.13	3	No
Mosquito Creek	Earl Armstrong Road	4386	1425 & 1430	90.34	88.52	182	No
Tributary A	Rideau Road (East of Downey Road)	7099	2105 & 2110	94.48	94.02	46	No
Tributary A	Osgoode Link Pathway	9247	2220 & 2225	98.19	97.74	45	No
Tributary A	Bowesville road	9436	2250 & 2255	98.66	98.32	34	No
Tributary B	Rideau Road (West of Downey Road)	7100	3105 & 3110	94.93	94.01	92	Yes
Tributary B	Lot 26 Farm Access	7484	3145 & 3150	94.94	94.94	0	Yes
Tributary B	Lot 27 Farm Access	7696	3160 & 3165	94.96	94.95	1	Yes
Tributary B	Downey Road	7925	3180 & 3185	95.37	95.04	33	No

Table 13 Regulatory Flood Levels for 100 Year Flood Event

River	Reach	Xsec ID #	Q (total) (cms)	Computed WSEL (m)	EGL (m)	RFL (m)
Mosquito Creek	Reach 1	1100	138.75	78.79	78.94	---
	Reach 1	1105	138.75	78.93	79.01	---
	Reach 1	1110	138.75	78.99	79.12	79.12
	Reach 1	1111	138.75	79.03	79.19	79.19
	Reach 1	1115	138.75	79.06	79.24	79.24
	Reach 1	1116	138.75	79.17	79.30	79.30
	Reach 1	1120	138.75	79.15	79.42	79.42
	Reach 1	1125	138.75	79.02	79.80	79.80
	Reach 1	1130	138.75	79.84	80.04	80.04
	Reach 1	1135	138.75	79.88	80.07	80.07
	Reach 1	1138	River Road			
	Reach 1	1140	138.75	80.43	80.50	80.50
	Reach 1	1145	138.75	80.43	80.53	80.53
	Reach 1	1150	138.75	80.40	80.57	80.57
	Reach 1	1155	138.75	80.51	80.62	80.62
	Reach 1	1160	138.75	80.49	80.69	80.69
	Reach 1	1165	138.75	80.40	80.80	80.80
	Reach 1	1168	Leitrim Road			
	Reach 1	1170	138.75	83.21	83.22	83.22
	Reach 1	1175	138.75	83.21	83.22	83.22
	Reach 1	1180	138.75	83.22	83.22	83.22
	Reach 1	1185	138.75	83.22	83.23	83.23
	Reach 1	1190	138.75	83.22	83.23	83.23
	Reach 1	1195	76.61	83.22	83.23	83.23
	Reach 1	1200	76.61	83.22	83.23	83.23
	Reach 1	1205	76.61	83.23	83.23	83.23
	Reach 1	1210	76.61	83.22	83.24	83.24
	Reach 1	1215	76.61	83.24	83.24	83.24
	Reach 1	1220	76.61	83.24	83.25	83.25
	Reach 1	1225	76.61	83.25	83.26	83.26
	Reach 1	1230	76.61	83.26	83.27	83.27
	Reach 1	1235	76.61	83.26	83.28	83.28
	Reach 1	1240	76.61	83.27	83.28	83.28
	Reach 1	1245	76.61	83.28	83.29	83.29
	Reach 1	1250	76.61	83.29	83.30	83.30
	Reach 1	1255	76.61	83.30	83.33	83.33
	Reach 1	1260	76.61	83.33	83.37	83.37
	Reach 1	1261	76.61	83.26	83.44	83.44
	Reach 1	1265	76.61	83.39	83.59	83.59
	Reach 1	1266	76.61	83.55	83.71	83.71
	Reach 1	1270	76.61	83.48	83.96	83.96
	Reach 1	1271	76.61	84.07	84.24	84.24
	Reach 1	1275	76.61	84.12	84.41	84.41
	Reach 1	1280	76.61	84.52	84.68	84.68
	Reach 1	1285	76.61	84.60	84.88	84.88
	Reach 1	1288	Spratt Road			
	Reach 1	1290	76.61	88.03	88.04	88.04
	Reach 1	1295	76.61	88.03	88.04	88.04
	Reach 1	1300	76.61	88.03	88.04	88.04
	Reach 1	1305	76.61	88.04	88.04	88.04
	Reach 1	1310	42.02	88.04	88.04	88.04

River	Reach	Xsec ID #	Q (total) (cms)	Computed WSEL (m)	EGL (m)	RFL (m)
Mosquito Creek	Reach 1	1315	42.02	88.04	88.04	88.04
	Reach 1	1320	42.02	88.04	88.05	88.05
	Reach 1	1325	42.02	88.04	88.05	88.05
	Reach 1	1330	42.02	88.05	88.05	88.05
	Reach 1	1335	42.02	88.05	88.05	88.05
	Reach 1	1340	42.02	87.99	88.09	88.09
	Reach 1	1345	42.02	88.09	88.12	88.12
	Reach 1	1350	42.02	88.12	88.12	88.12
	Reach 1	1355	42.02	88.12	88.13	88.13
	Reach 1	1358	Limebank Road			
	Reach 1	1360	42.02	88.16	88.16	88.16
	Reach 1	1365	42.02	88.15	88.16	88.16
	Reach 1	1370	42.02	88.16	88.17	88.17
	Reach 1	1375	42.02	88.17	88.18	88.18
	Reach 1	1380	42.02	88.17	88.19	88.19
	Reach 1	1385	42.02	88.19	88.20	88.20
	Reach 1	1390	42.02	88.19	88.21	88.21
	Reach 1	1395	42.02	88.21	88.22	88.22
	Reach 1	1400	42.02	88.20	88.24	88.24
	Reach 1	1405	42.02	88.25	88.26	88.26
	Reach 1	1410	42.02	88.25	88.28	88.28
	Reach 1	1415	42.02	88.30	88.31	88.31
	Reach 1	1420	41.05	88.31	88.33	88.33
	Reach 1	1425	41.05	88.20	88.52	88.52
	Reach 1	1428	Earl Armstrong Road			
	Reach 1	1430	41.05	90.30	90.34	90.34
	Reach 1	1435	41.05	90.34	90.35	90.35
	Reach 1	1440	41.05	90.34	90.36	90.36
	Reach 1	1445	41.05	90.34	90.38	90.38
	Reach 1	1450	41.05	90.38	90.40	90.40
	Reach 1	1455	41.05	90.40	90.45	90.45
	Reach 1	1456	41.05	90.41	90.54	90.54
	Reach 1	1460	41.05	90.54	90.66	90.66
	Reach 1	1461	41.05	90.66	90.74	90.74
	Reach 1	1465	41.05	90.73	90.80	90.80
	Reach 1	1470	41.05	90.82	90.84	90.84
	Reach 1	1475	41.05	90.87	90.90	90.90
	Reach 1	1480	41.05	90.85	90.94	90.94
	Reach 1	1485	41.05	90.93	90.97	90.97
	Reach 1	1490	41.05	90.92	91.01	91.01
	Reach 1	1495	41.05	91.01	91.09	91.09
	Reach 1	1500	41.05	91.12	91.22	91.22
	Reach 1	1505	41.05	91.33	91.38	91.38
	Reach 1	1510	41.05	91.38	91.46	91.46
	Reach 1	1515	41.05	91.57	91.65	91.65
	Reach 1	1520	41.05	91.70	91.75	91.75
	Reach 1	1525	41.05	91.71	91.80	91.80
	Reach 1	1530	41.05	91.90	91.94	91.94
	Reach 1	1535	41.05	91.98	92.07	92.07
	Reach 1	1540	41.05	92.13	92.24	92.24
	Reach 1	1545	41.05	92.31	92.41	92.41
	Reach 1	1550	41.05	92.48	92.53	92.53

River	Reach	Xsec ID #	Q (total) (cms)	Computed WSEL (m)	EGL (m)	RFL (m)
Mosquito Creek	Reach 1	1555	41.05	92.53	92.64	92.64
	Reach 1	1560	41.05	92.72	92.82	92.82
	Reach 1	1565	41.05	92.81	92.89	92.89
	Reach 1	1570	41.05	92.87	92.91	92.91
	Reach 1	1575	41.05	92.87	92.92	92.92
	Reach 1	1580	41.05	92.83	92.96	92.96
	Reach 1	1585	41.05	93.15	93.25	93.25
	Reach 1	1590	41.05	93.44	93.51	93.51
	Reach 1	1595	25.33	93.54	93.56	93.56
	Reach 1	1600	25.33	93.56	93.58	93.58
	Reach 1	1605	25.33	93.59	93.61	93.61
	Reach 1	1610	25.33	93.63	93.66	93.66
	Reach 1	1615	25.33	93.66	93.71	93.71
	Reach 1	1620	25.33	93.76	93.80	93.80
	Reach 1	1625	25.33	93.83	93.90	93.90
	Reach 1	1630	25.33	93.94	93.99	93.99
Tributary A	Reach 1	2100	13.99	93.94	94.01	94.01
	Reach 1	2105	13.99	93.97	94.02	94.02
	Reach 1	2108	Rideau Road (East of Downey Road)			
	Reach 1	2110	13.99	94.46	94.48	94.48
	Reach 1	2115	13.99	94.48	94.49	94.49
	Reach 1	2120	13.99	94.49	94.49	94.49
	Reach 1	2125	13.99	94.50	94.50	94.50
	Reach 1	2130	13.99	94.52	94.52	94.52
	Reach 1	2135	13.99	94.56	94.57	94.57
	Reach 1	2140	13.99	94.61	94.67	94.67
	Reach 1	2145	13.99	94.82	94.97	94.97
	Reach 1	2150	13.99	95.13	95.17	95.17
	Reach 1	2155	13.99	95.21	95.41	95.41
	Reach 1	2160	13.99	95.58	95.64	95.64
	Reach 1	2165	13.99	95.71	95.74	95.74
	Reach 1	2170	13.99	95.83	95.89	95.89
	Reach 1	2175	13.99	96.00	96.04	96.04
	Reach 1	2180	13.99	96.14	96.24	96.24
	Reach 1	2185	13.99	96.52	96.59	96.59
	Reach 1	2190	13.99	96.68	96.72	96.72
	Reach 1	2195	13.99	96.81	96.90	96.90
	Reach 1	2200	13.99	97.03	97.08	97.08
	Reach 1	2205	13.99	97.16	97.20	97.20
	Reach 1	2210	13.99	97.39	97.48	97.48
	Reach 1	2215	11.18	97.62	97.67	97.67
	Reach 1	2220	11.18	97.58	97.74	97.74
	Reach 1	2223	Osgoode Link Pathway			
	Reach 1	2225	11.18	98.16	98.19	98.19
	Reach 1	2230	11.18	98.15	98.20	98.20
	Reach 1	2235	11.18	98.22	98.23	98.23
	Reach 1	2240	11.18	98.23	98.25	98.25
	Reach 1	2245	11.18	98.24	98.29	98.29
	Reach 1	2250	11.18	98.23	98.32	98.32
	Reach 1	2253	Bowesville Road			
	Reach 1	2255	11.18	98.61	98.66	98.66

River	Reach	Xsec ID #	Q (total) (cms)	Computed WSEL (m)	EGL (m)	RFL (m)
Tributary A	Reach 1	2260	11.18	98.64	98.68	98.68
	Reach 1	2265	11.18	98.65	98.69	98.69
	Reach 1	2270	11.18	98.69	98.72	98.72
	Reach 1	2275	11.18	98.74	98.79	98.79
Tributary B	Reach 1	3100	11.72	93.98	94.00	94.00
	Reach 1	3105	11.72	93.98	94.01	94.01
	Reach 1	3108	Rideau Road (West of Downey Road)			
	Reach 1	3110	11.72	94.93	94.93	94.93
	Reach 1	3115	11.72	94.93	94.93	94.93
	Reach 1	3120	11.72	94.93	94.93	94.93
	Reach 1	3125	11.72	94.93	94.94	94.94
	Reach 1	3130	11.72	94.94	94.94	94.94
	Reach 1	3135	11.72	94.94	94.94	94.94
	Reach 1	3140	11.72	94.94	94.94	94.94
	Reach 1	3145	11.72	94.94	94.94	94.94
	Reach 1	3148	Lot 26 Farm Access			
	Reach 1	3150	11.72	94.94	94.94	94.94
	Reach 1	3155	11.72	94.95	94.95	94.95
	Reach 1	3160	11.72	94.95	94.95	94.95
	Reach 1	3163	Lot 27 Farm Access			
	Reach 1	3165	11.72	94.95	94.96	94.96
	Reach 1	3170	11.72	94.96	94.97	94.97
	Reach 1	3175	11.72	94.98	95.02	95.02
	Reach 1	3180	11.72	94.99	95.04	95.04
	Reach 1	3183	Downey Road			
	Reach 1	3185	11.72	95.36	95.37	95.37
	Reach 1	3190	11.72	95.35	95.39	95.39
	Reach 1	3195	11.72	95.38	95.40	95.40
	Reach 1	3200	11.72	95.38	95.44	95.44
	Reach 1	3205	11.72	95.46	95.48	95.48
	Reach 1	3210	11.72	95.54	95.59	95.59
	Reach 1	3215	11.72	95.63	95.68	95.68
	Reach 1	3220	8.47	95.77	95.80	95.80
	Reach 1	3225	8.47	95.90	95.94	95.94

Table 14 Flows and computed water levels for the 2, 5, 10, and 20 year flood events

River	Reach	Xsec ID	Flow (m^3/s) and Computed WSEL (m) for Different Flood Events							
			Q2	WL2	Q5	WL5	Q10	WL10	Q20	WL20
Mosquito Creek	Reach1	1100	37.24	77.54	61.95	77.97	79.24	78.22	96.04	78.41
	Reach1	1105	37.24	77.63	61.95	78.10	79.24	78.35	96.04	78.56
	Reach1	1110	37.24	77.71	61.95	78.14	79.24	78.42	96.04	78.61
	Reach1	1111	37.24	77.84	61.95	78.29	79.24	78.48	96.04	78.67
	Reach1	1115	37.24	77.87	61.95	78.32	79.24	78.51	96.04	78.70
	Reach1	1116	37.24	77.95	61.95	78.43	79.24	78.63	96.04	78.81
	Reach1	1120	37.24	78.02	61.95	78.45	79.24	78.63	96.04	78.81
	Reach1	1125	37.24	78.13	61.95	78.55	79.24	78.71	96.04	78.84
	Reach1	1130	37.24	78.31	61.95	78.82	79.24	79.07	96.04	79.30
	Reach1	1135	37.24	78.37	61.95	78.89	79.24	79.15	96.04	79.37
	Reach1	1138	River Road							
	Reach1	1140	37.24	78.37	61.95	78.94	79.24	79.28	96.04	79.57
	Reach1	1145	37.24	78.41	61.95	78.99	79.24	79.30	96.04	79.58
	Reach1	1150	37.24	78.43	61.95	78.98	79.24	79.28	96.04	79.55
	Reach1	1155	37.24	78.59	61.95	79.14	79.24	79.43	96.04	79.71
	Reach1	1160	37.24	78.65	61.95	79.15	79.24	79.43	96.04	79.70
	Reach1	1165	37.24	78.66	61.95	79.15	79.24	79.41	96.04	79.66
	Reach1	1168	Leitrim Road							
	Reach1	1170	37.24	79.03	61.95	79.91	79.24	80.49	96.04	81.09
	Reach1	1175	37.24	79.13	61.95	80.05	79.24	80.65	96.04	81.26
	Reach1	1180	37.24	79.17	61.95	80.08	79.24	80.69	96.04	81.29
	Reach1	1185	37.24	79.16	61.95	80.08	79.24	80.69	96.04	81.29
	Reach1	1190	37.24	79.18	61.95	80.09	79.24	80.70	96.04	81.30
	Reach1	1195	19.54	79.23	31.60	80.11	40.33	80.71	50.47	81.31
	Reach1	1200	19.54	79.23	31.60	80.11	40.33	80.71	50.47	81.31
	Reach1	1205	19.54	79.26	31.60	80.13	40.33	80.72	50.47	81.32
	Reach1	1210	19.54	79.32	31.60	80.14	40.33	80.73	50.47	81.32
	Reach1	1215	19.54	79.37	31.60	80.18	40.33	80.75	50.47	81.34
	Reach1	1220	19.54	79.40	31.60	80.19	40.33	80.76	50.47	81.35
	Reach1	1225	19.54	79.49	31.60	80.24	40.33	80.80	50.47	81.37
	Reach1	1230	19.54	79.60	31.60	80.30	40.33	80.83	50.47	81.39
	Reach1	1235	19.54	79.64	31.60	80.32	40.33	80.84	50.47	81.40
	Reach1	1240	19.54	79.76	31.60	80.41	40.33	80.90	50.47	81.44
	Reach1	1245	19.54	79.99	31.60	80.62	40.33	81.01	50.47	81.49
	Reach1	1250	19.54	80.16	31.60	80.78	40.33	81.14	50.47	81.55
	Reach1	1255	19.54	80.38	31.60	80.93	40.33	81.25	50.47	81.63
	Reach1	1260	19.54	80.85	31.60	81.15	40.33	81.47	50.47	81.78
	Reach1	1261	19.54	81.68	31.60	81.95	40.33	82.08	50.47	82.22
	Reach1	1265	19.54	82.21	31.60	82.48	40.33	82.65	50.47	82.83
	Reach1	1266	19.54	82.33	31.60	82.62	40.33	82.79	50.47	82.97
	Reach1	1270	19.54	82.66	31.60	82.94	40.33	83.03	50.47	83.21
	Reach1	1271	19.54	83.12	31.60	83.39	40.33	83.56	50.47	83.70
	Reach1	1275	19.54	83.22	31.60	83.47	40.33	83.63	50.47	83.77
	Reach1	1280	19.54	83.50	31.60	83.82	40.33	83.99	50.47	84.16
	Reach1	1285	19.54	83.61	31.60	83.91	40.33	84.07	50.47	84.24
	Reach1	1288	Spratt Road							
	Reach1	1290	19.54	84.32	31.60	85.17	40.33	85.92	50.47	86.87
	Reach1	1295	19.54	84.43	31.60	85.20	40.33	85.93	50.47	86.88
	Reach1	1300	19.54	84.44	31.60	85.21	40.33	85.94	50.47	86.88
	Reach1	1305	19.54	84.48	31.60	85.22	40.33	85.94	50.47	86.89
	Reach1	1310	8.78	84.51	14.64	85.23	19.99	85.95	26.24	86.89

River	Reach	Xsec ID	Flow (m^3/s) and Computed WSEL (m) for Different Flood Events							
			Q2	WL2	Q5	WL5	Q10	WL10	Q20	WL20
Mosquito Creek	Reach1	1315	8.78	84.51	14.64	85.23	19.99	85.95	26.24	86.89
	Reach1	1320	8.78	84.55	14.64	85.25	19.99	85.96	26.24	86.89
	Reach1	1325	8.78	84.58	14.64	85.25	19.99	85.96	26.24	86.89
	Reach1	1330	8.78	84.66	14.64	85.29	19.99	85.98	26.24	86.90
	Reach1	1335	8.78	84.84	14.64	85.34	19.99	85.98	26.24	86.90
	Reach1	1340	8.78	85.22	14.64	85.43	19.99	85.86	26.24	86.83
	Reach1	1345	8.78	85.63	14.64	85.95	19.99	86.21	26.24	86.96
	Reach1	1350	8.78	85.79	14.64	86.10	19.99	86.34	26.24	87.01
	Reach1	1355	8.78	85.81	14.64	86.10	19.99	86.34	26.24	87.01
	Reach1	1358	Limebank Road							
	Reach1	1360	8.78	85.87	14.64	86.18	19.99	86.42	26.24	87.05
	Reach1	1365	8.78	85.88	14.64	86.18	19.99	86.42	26.24	87.05
	Reach1	1370	8.78	85.92	14.64	86.24	19.99	86.47	26.24	87.07
	Reach1	1375	8.78	86.02	14.64	86.36	19.99	86.57	26.24	87.11
	Reach1	1380	8.78	86.04	14.64	86.39	19.99	86.58	26.24	87.10
	Reach1	1385	8.78	86.10	14.64	86.46	19.99	86.66	26.24	87.14
	Reach1	1390	8.78	86.18	14.64	86.53	19.99	86.71	26.24	87.16
	Reach1	1395	8.78	86.21	14.64	86.57	19.99	86.78	26.24	87.20
	Reach1	1400	8.78	86.23	14.64	86.60	19.99	86.78	26.24	87.19
	Reach1	1405	8.78	86.34	14.64	86.72	19.99	86.91	26.24	87.29
	Reach1	1410	8.78	86.49	14.64	86.86	19.99	87.06	26.24	87.34
	Reach1	1415	8.78	86.62	14.64	87.01	19.99	87.22	26.24	87.47
	Reach1	1420	6.31	86.84	13.73	87.24	19.24	87.45	25.56	87.62
	Reach1	1425	6.31	86.89	13.73	87.27	19.24	87.47	25.56	87.61
	Reach1	1428	Earl Armstrong Road							
	Reach1	1430	6.31	87.00	13.73	87.65	19.24	88.12	25.56	88.64
	Reach1	1435	6.31	87.00	13.73	87.66	19.24	88.12	25.56	88.67
	Reach1	1440	6.31	87.27	13.73	87.78	19.24	88.18	25.56	88.68
	Reach1	1445	6.31	87.62	13.73	88.00	19.24	88.25	25.56	88.70
	Reach1	1450	6.31	88.16	13.73	88.60	19.24	88.76	25.56	88.91
	Reach1	1455	6.31	88.58	13.73	89.03	19.24	89.24	25.56	89.42
	Reach1	1456	6.31	88.95	13.73	89.29	19.24	89.41	25.56	89.67
	Reach1	1460	6.31	89.32	13.73	89.76	19.24	89.99	25.56	90.14
	Reach1	1461	6.31	89.42	13.73	89.87	19.24	90.09	25.56	90.26
	Reach1	1465	6.31	89.51	13.73	89.95	19.24	90.16	25.56	90.33
	Reach1	1470	6.31	89.64	13.73	90.09	19.24	90.27	25.56	90.44
	Reach1	1475	6.31	89.77	13.73	90.21	19.24	90.38	25.56	90.53
	Reach1	1480	6.31	89.79	13.73	90.23	19.24	90.38	25.56	90.52
	Reach1	1485	6.31	89.83	13.73	90.27	19.24	90.43	25.56	90.59
	Reach1	1490	6.31	89.85	13.73	90.29	19.24	90.45	25.56	90.59
	Reach1	1495	6.31	89.90	13.73	90.39	19.24	90.56	25.56	90.70
	Reach1	1500	6.31	89.98	13.73	90.49	19.24	90.66	25.56	90.81
	Reach1	1505	6.31	90.16	13.73	90.66	19.24	90.82	25.56	90.98
	Reach1	1510	6.31	90.25	13.73	90.73	19.24	90.89	25.56	91.05
	Reach1	1515	6.31	90.39	13.73	90.91	19.24	91.09	25.56	91.25
	Reach1	1520	6.31	90.45	13.73	91.00	19.24	91.19	25.56	91.36
	Reach1	1525	6.31	90.45	13.73	91.00	19.24	91.19	25.56	91.36
	Reach1	1530	6.31	90.65	13.73	91.19	19.24	91.40	25.56	91.57
	Reach1	1535	6.31	90.74	13.73	91.28	19.24	91.50	25.56	91.66
	Reach1	1540	6.31	90.84	13.73	91.41	19.24	91.64	25.56	91.81
	Reach1	1545	6.31	90.99	13.73	91.58	19.24	91.83	25.56	92.01
	Reach1	1550	6.31	91.07	13.73	91.65	19.24	91.91	25.56	92.12

River	Reach	Xsec ID	Flow (m^3/s) and Computed WSEL (m) for Different Flood Events							
			Q2	WL2	Q5	WL5	Q10	WL10	Q20	WL20
Mosquito Creek	Reach1	1555	6.31	91.22	13.73	91.79	19.24	92.07	25.56	92.21
	Reach1	1560	6.31	91.37	13.73	91.93	19.24	92.20	25.56	92.37
	Reach1	1565	6.31	91.43	13.73	91.99	19.24	92.25	25.56	92.44
	Reach1	1570	6.31	91.47	13.73	92.05	19.24	92.30	25.56	92.49
	Reach1	1575	6.31	91.46	13.73	92.03	19.24	92.29	25.56	92.48
	Reach1	1580	6.31	91.45	13.73	92.01	19.24	92.25	25.56	92.44
	Reach1	1585	6.31	91.75	13.73	92.37	19.24	92.63	25.56	92.82
	Reach1	1590	6.31	92.09	13.73	92.68	19.24	92.93	25.56	93.12
	Reach1	1595	3.92	92.21	8.37	92.77	11.83	93.03	15.84	93.22
	Reach1	1600	3.92	92.24	8.37	92.79	11.83	93.04	15.84	93.24
	Reach1	1605	3.92	92.29	8.37	92.83	11.83	93.08	15.84	93.27
	Reach1	1610	3.92	92.35	8.37	92.90	11.83	93.13	15.84	93.32
	Reach1	1615	3.92	92.36	8.37	92.91	11.83	93.15	15.84	93.34
	Reach1	1620	3.92	92.60	8.37	93.11	11.83	93.30	15.84	93.46
	Reach1	1625	3.92	92.78	8.37	93.25	11.83	93.40	15.84	93.55
	Reach1	1630	3.92	92.93	8.37	93.41	11.83	93.53	15.84	93.67
Tributary A	Reach1	2100	2.16	92.95	4.67	93.43	6.62	93.55	8.79	93.68
	Reach1	2105	2.16	92.96	4.67	93.44	6.62	93.57	8.79	93.71
	Reach1	2108	Rideau Road (East of Downey Road)							
	Reach1	2110	2.16	92.98	4.67	93.51	6.62	93.68	8.79	93.90
	Reach1	2115	2.16	92.98	4.67	93.51	6.62	93.69	8.79	93.91
	Reach1	2120	2.16	92.99	4.67	93.51	6.62	93.70	8.79	93.92
	Reach1	2125	2.16	93.14	4.67	93.57	6.62	93.74	8.79	93.95
	Reach1	2130	2.16	93.32	4.67	93.69	6.62	93.84	8.79	94.01
	Reach1	2135	2.16	93.54	4.67	93.91	6.62	94.04	8.79	94.16
	Reach1	2140	2.16	93.68	4.67	94.05	6.62	94.19	8.79	94.30
	Reach1	2145	2.16	93.95	4.67	94.27	6.62	94.45	8.79	94.59
	Reach1	2150	2.16	94.41	4.67	94.69	6.62	94.83	8.79	94.94
	Reach1	2155	2.16	94.51	4.67	94.81	6.62	94.94	8.79	95.04
	Reach1	2160	2.16	94.62	4.67	94.96	6.62	95.14	8.79	95.30
	Reach1	2165	2.16	94.75	4.67	95.13	6.62	95.36	8.79	95.49
	Reach1	2170	2.16	94.93	4.67	95.35	6.62	95.54	8.79	95.64
	Reach1	2175	2.16	95.09	4.67	95.54	6.62	95.70	8.79	95.80
	Reach1	2180	2.16	95.30	4.67	95.81	6.62	95.90	8.79	95.98
	Reach1	2185	2.16	95.65	4.67	96.12	6.62	96.25	8.79	96.37
	Reach1	2190	2.16	95.84	4.67	96.27	6.62	96.44	8.79	96.59
	Reach1	2195	2.16	95.96	4.67	96.35	6.62	96.53	8.79	96.69
	Reach1	2200	2.16	96.11	4.67	96.52	6.62	96.73	8.79	96.86
	Reach1	2205	2.16	96.24	4.67	96.64	6.62	96.84	8.79	96.98
	Reach1	2210	2.16	96.48	4.67	96.86	6.62	97.05	8.79	97.19
	Reach1	2215	1.81	96.67	3.78	97.04	5.28	97.25	6.95	97.40
	Reach1	2220	1.81	96.66	3.78	97.03	5.28	97.23	6.95	97.38
	Reach1	2223	Osgoode Link Pathway							
	Reach1	2225	1.81	96.96	3.78	97.24	5.28	97.47	6.95	97.69
	Reach1	2230	1.81	96.97	3.78	97.25	5.28	97.47	6.95	97.68
	Reach1	2235	1.81	97.08	3.78	97.37	5.28	97.57	6.95	97.78
	Reach1	2240	1.81	97.18	3.78	97.48	5.28	97.69	6.95	97.87
	Reach1	2245	1.81	97.26	3.78	97.57	5.28	97.76	6.95	97.90
	Reach1	2250	1.81	97.29	3.78	97.60	5.28	97.78	6.95	97.92
	Reach1	2253	Bowesville Road							
	Reach1	2255	1.81	97.32	3.78	97.66	5.28	97.89	6.95	98.10

River	Reach	Xsec ID	Flow (m^3/s) and Computed WSEL (m) for Different Flood Events							
			Q2	WL2	Q5	WL5	Q10	WL10	Q20	WL20
Tributary A	Reach1	2260	1.81	97.32	3.78	97.66	5.28	97.89	6.95	98.10
	Reach1	2265	1.81	97.40	3.78	97.74	5.28	97.96	6.95	98.15
	Reach1	2270	1.81	97.46	3.78	97.82	5.28	98.03	6.95	98.22
	Reach1	2275	1.81	97.60	3.78	97.93	5.28	98.14	6.95	98.34
Tributary B	Reach1	3100	1.90	92.93	4.01	93.44	5.63	93.57	7.41	93.71
	Reach1	3105	1.90	92.97	4.01	93.44	5.63	93.57	7.41	93.71
	Reach1	3108	Rideau Road (West of Downey Road)							
	Reach1	3110	1.90	93.02	4.01	93.57	5.63	93.80	7.41	94.10
	Reach1	3115	1.90	93.02	4.01	93.57	5.63	93.81	7.41	94.11
	Reach1	3120	1.90	93.05	4.01	93.57	5.63	93.81	7.41	94.11
	Reach1	3125	1.90	93.11	4.01	93.60	5.63	93.82	7.41	94.12
	Reach1	3130	1.90	93.18	4.01	93.64	5.63	93.85	7.41	94.14
	Reach1	3135	1.90	93.23	4.01	93.65	5.63	93.86	7.41	94.14
	Reach1	3140	1.90	93.30	4.01	93.70	5.63	93.89	7.41	94.16
	Reach1	3145	1.90	93.36	4.01	93.74	5.63	93.93	7.41	94.18
	Reach1	3148	Lot 26 Farm Access							
	Reach1	3150	1.90	93.43	4.01	93.92	5.63	94.06	7.41	94.19
	Reach1	3155	1.90	93.50	4.01	93.97	5.63	94.11	7.41	94.25
	Reach1	3160	1.90	93.71	4.01	94.15	5.63	94.31	7.41	94.40
	Reach1	3163	Lot 27 Farm Access							
	Reach1	3165	1.90	93.76	4.01	94.30	5.63	94.38	7.41	94.42
	Reach1	3170	1.90	93.85	4.01	94.37	5.63	94.47	7.41	94.55
	Reach1	3175	1.90	94.04	4.01	94.50	5.63	94.64	7.41	94.74
	Reach1	3180	1.90	94.08	4.01	94.53	5.63	94.67	7.41	94.78
	Reach1	3183	Downey Road							
	Reach1	3185	1.90	94.09	4.01	94.57	5.63	94.76	7.41	94.93
	Reach1	3190	1.90	94.06	4.01	94.55	5.63	94.73	7.41	94.90
	Reach1	3195	1.90	94.19	4.01	94.59	5.63	94.78	7.41	94.94
	Reach1	3200	1.90	94.35	4.01	94.67	5.63	94.84	7.41	94.99
	Reach1	3205	1.90	94.45	4.01	94.76	5.63	94.92	7.41	95.07
	Reach1	3210	1.90	94.71	4.01	95.04	5.63	95.18	7.41	95.30
	Reach1	3215	1.90	94.83	4.01	95.15	5.63	95.31	7.41	95.43
	Reach1	3220	1.28	95.00	2.77	95.32	3.91	95.47	5.19	95.58
	Reach1	3225	1.28	95.26	2.77	95.55	3.91	95.66	5.19	95.75

Table 15 Flows and computed water levels for the 50, 100, 200, 350, and 500 year flood events

River	Reach	Xsec ID	Flow (m^3/s) and Computed WSEL (m) for Different Flood Events									
			Q50	WL50	Q100	WL100	Q200	WL200	Q350	WL350	Q500	WL500
Mosquito Creek	Reach1	1100	119.48	78.63	138.75	78.79	158.77	78.94	176.92	79.06	189.90	79.15
	Reach1	1105	119.48	78.77	138.75	78.93	158.77	79.08	176.92	79.21	189.90	79.30
	Reach1	1110	119.48	78.83	138.75	78.99	158.77	79.15	176.92	79.27	189.90	79.36
	Reach1	1111	119.48	78.88	138.75	79.03	158.77	79.18	176.92	79.31	189.90	79.40
	Reach1	1115	119.48	78.91	138.75	79.06	158.77	79.21	176.92	79.34	189.90	79.42
	Reach1	1116	119.48	79.02	138.75	79.17	158.77	79.32	176.92	79.45	189.90	79.54
	Reach1	1120	119.48	79.00	138.75	79.15	158.77	79.29	176.92	79.41	189.90	79.50
	Reach1	1125	119.48	78.96	138.75	79.02	158.77	79.04	176.92	79.47	189.90	79.61
	Reach1	1130	119.48	79.60	138.75	79.84	158.77	80.11	176.92	80.30	189.90	80.39
	Reach1	1135	119.48	79.66	138.75	79.88	158.77	80.13	176.92	80.36	189.90	80.46
	Reach1	1138	River Road									
	Reach1	1140	119.48	80.04	138.75	80.43	158.77	80.88	176.92	81.26	189.90	81.40
	Reach1	1145	119.48	80.04	138.75	80.43	158.77	80.87	176.92	81.24	189.90	81.38
	Reach1	1150	119.48	79.99	138.75	80.40	158.77	80.85	176.92	81.22	189.90	81.36
	Reach1	1155	119.48	80.15	138.75	80.51	158.77	80.93	176.92	81.27	189.90	81.41
	Reach1	1160	119.48	80.13	138.75	80.49	158.77	80.90	176.92	81.25	189.90	81.38
	Reach1	1165	119.48	80.06	138.75	80.40	158.77	80.80	176.92	81.14	189.90	81.26
	Reach1	1168	Leitrim Road									
	Reach1	1170	119.48	82.04	138.75	83.21	158.77	83.58	176.92	83.75	189.90	83.84
	Reach1	1175	119.48	82.21	138.75	83.21	158.77	83.58	176.92	83.75	189.90	83.84
	Reach1	1180	119.48	82.24	138.75	83.22	158.77	83.58	176.92	83.76	189.90	83.85
	Reach1	1185	119.48	82.24	138.75	83.22	158.77	83.58	176.92	83.76	189.90	83.85
	Reach1	1190	119.48	82.25	138.75	83.22	158.77	83.59	176.92	83.77	189.90	83.85
	Reach1	1195	64.63	82.25	76.61	83.22	88.80	83.59	99.68	83.77	107.03	83.85
	Reach1	1200	64.63	82.25	76.61	83.22	88.80	83.59	99.68	83.77	107.03	83.86
	Reach1	1205	64.63	82.26	76.61	83.23	88.80	83.59	99.68	83.77	107.03	83.86
	Reach1	1210	64.63	82.26	76.61	83.22	88.80	83.59	99.68	83.77	107.03	83.86
	Reach1	1215	64.63	82.28	76.61	83.24	88.80	83.60	99.68	83.79	107.03	83.88
	Reach1	1220	64.63	82.28	76.61	83.24	88.80	83.61	99.68	83.79	107.03	83.88
	Reach1	1225	64.63	82.30	76.61	83.25	88.80	83.62	99.68	83.80	107.03	83.90
	Reach1	1230	64.63	82.30	76.61	83.26	88.80	83.62	99.68	83.81	107.03	83.90
	Reach1	1235	64.63	82.31	76.61	83.26	88.80	83.63	99.68	83.82	107.03	83.91
	Reach1	1240	64.63	82.33	76.61	83.27	88.80	83.64	99.68	83.83	107.03	83.92
	Reach1	1245	64.63	82.35	76.61	83.28	88.80	83.65	99.68	83.83	107.03	83.93
	Reach1	1250	64.63	82.37	76.61	83.29	88.80	83.65	99.68	83.84	107.03	83.93
	Reach1	1255	64.63	82.40	76.61	83.30	88.80	83.67	99.68	83.85	107.03	83.95
	Reach1	1260	64.63	82.46	76.61	83.33	88.80	83.69	99.68	83.88	107.03	83.98
	Reach1	1261	64.63	82.40	76.61	83.26	88.80	83.63	99.68	83.82	107.03	83.91
	Reach1	1265	64.63	83.05	76.61	83.39	88.80	83.72	99.68	83.90	107.03	84.00
	Reach1	1266	64.63	83.21	76.61	83.55	88.80	83.87	99.68	84.06	107.03	84.16
	Reach1	1270	64.63	83.31	76.61	83.48	88.80	83.82	99.68	84.03	107.03	84.14
	Reach1	1271	64.63	83.92	76.61	84.07	88.80	84.15	99.68	84.27	107.03	84.35
	Reach1	1275	64.63	83.97	76.61	84.12	88.80	84.20	99.68	84.31	107.03	84.39
	Reach1	1280	64.63	84.36	76.61	84.52	88.80	84.65	99.68	84.77	107.03	84.85
	Reach1	1285	64.63	84.44	76.61	84.60	88.80	84.74	99.68	84.86	107.03	84.94
	Reach1	1288	Spratt Road									
	Reach1	1290	64.63	87.86	76.61	88.03	88.80	88.14	99.68	88.24	107.03	88.29
	Reach1	1295	64.63	87.86	76.61	88.03	88.80	88.14	99.68	88.24	107.03	88.29
	Reach1	1300	64.63	87.86	76.61	88.03	88.80	88.14	99.68	88.24	107.03	88.29
	Reach1	1305	64.63	87.87	76.61	88.04	88.80	88.15	99.68	88.25	107.03	88.30
	Reach1	1310	35.19	87.87	42.02	88.04	48.66	88.15	54.44	88.25	58.54	88.30
	Reach1	1315	35.19	87.87	42.02	88.04	48.66	88.15	54.44	88.25	58.54	88.30
	Reach1	1320	35.19	87.87	42.02	88.04	48.66	88.16	54.44	88.26	58.54	88.31
	Reach1	1325	35.19	87.87	42.02	88.04	48.66	88.15	54.44	88.25	58.54	88.31
	Reach1	1330	35.19	87.88	42.02	88.05	48.66	88.17	54.44	88.27	58.54	88.32
	Reach1	1335	35.19	87.88	42.02	88.05	48.66	88.17	54.44	88.27	58.54	88.32
	Reach1	1340	35.19	87.83	42.02	87.99	48.66	88.09	54.44	88.18	58.54	88.22
	Reach1	1345	35.19	87.91	42.02	88.09	48.66	88.21	54.44	88.32	58.54	88.38
	Reach1	1350	35.19	87.94	42.02	88.12	48.66	88.25	54.44	88.36	58.54	88.43

River	Reach	Xsec ID	Flow (m^3/s) and Computed WSEL (m) for Different Flood Events									
			Q50	WL50	Q100	WL100	Q200	WL200	Q350	WL350	Q500	WL500
Mosquito Creek	Reach1	1355	35.19	87.93	42.02	88.12	48.66	88.25	54.44	88.36	58.54	88.42
	Reach1	1358	Limebank Road									
	Reach1	1360	35.19	87.96	42.02	88.16	48.66	88.29	54.44	88.41	58.54	88.48
	Reach1	1365	35.19	87.96	42.02	88.15	48.66	88.29	54.44	88.41	58.54	88.48
	Reach1	1370	35.19	87.97	42.02	88.16	48.66	88.29	54.44	88.41	58.54	88.48
	Reach1	1375	35.19	87.98	42.02	88.17	48.66	88.31	54.44	88.44	58.54	88.51
	Reach1	1380	35.19	87.98	42.02	88.17	48.66	88.31	54.44	88.43	58.54	88.50
	Reach1	1385	35.19	87.99	42.02	88.19	48.66	88.33	54.44	88.45	58.54	88.52
	Reach1	1390	35.19	88.00	42.02	88.19	48.66	88.33	54.44	88.46	58.54	88.53
	Reach1	1395	35.19	88.02	42.02	88.21	48.66	88.35	54.44	88.48	58.54	88.55
	Reach1	1400	35.19	88.01	42.02	88.20	48.66	88.35	54.44	88.47	58.54	88.54
	Reach1	1405	35.19	88.05	42.02	88.25	48.66	88.40	54.44	88.52	58.54	88.60
	Reach1	1410	35.19	88.05	42.02	88.25	48.66	88.40	54.44	88.52	58.54	88.60
	Reach1	1415	35.19	88.10	42.02	88.30	48.66	88.45	54.44	88.57	58.54	88.65
	Reach1	1420	34.41	88.12	41.05	88.31	47.44	88.45	53.07	88.58	57.06	88.66
	Reach1	1425	34.41	88.04	41.05	88.20	47.44	88.32	53.07	88.42	57.06	88.47
	Reach1	1428	Earl Armstrong Road									
	Reach1	1430	34.41	89.53	41.05	90.30	47.44	91.03	53.07	91.17	57.06	91.24
	Reach1	1435	34.41	89.57	41.05	90.34	47.44	91.03	53.07	91.17	57.06	91.24
	Reach1	1440	34.41	89.57	41.05	90.34	47.44	91.03	53.07	91.17	57.06	91.24
	Reach1	1445	34.41	89.57	41.05	90.34	47.44	91.03	53.07	91.17	57.06	91.24
	Reach1	1450	34.41	89.63	41.05	90.38	47.44	91.04	53.07	91.19	57.06	91.26
	Reach1	1455	34.41	89.76	41.05	90.40	47.44	91.05	53.07	91.19	57.06	91.26
	Reach1	1456	34.41	89.83	41.05	90.41	47.44	91.05	53.07	91.19	57.06	91.26
	Reach1	1460	34.41	90.32	41.05	90.54	47.44	91.09	53.07	91.23	57.06	91.31
	Reach1	1461	34.41	90.46	41.05	90.66	47.44	91.15	53.07	91.29	57.06	91.37
	Reach1	1465	34.41	90.54	41.05	90.73	47.44	91.19	53.07	91.33	57.06	91.41
	Reach1	1470	34.41	90.64	41.05	90.82	47.44	91.23	53.07	91.37	57.06	91.45
	Reach1	1475	34.41	90.71	41.05	90.87	47.44	91.25	53.07	91.39	57.06	91.46
	Reach1	1480	34.41	90.70	41.05	90.85	47.44	91.23	53.07	91.37	57.06	91.44
	Reach1	1485	34.41	90.77	41.05	90.93	47.44	91.28	53.07	91.42	57.06	91.50
	Reach1	1490	34.41	90.77	41.05	90.92	47.44	91.27	53.07	91.41	57.06	91.48
	Reach1	1495	34.41	90.88	41.05	91.01	47.44	91.32	53.07	91.45	57.06	91.52
	Reach1	1500	34.41	90.99	41.05	91.12	47.44	91.39	53.07	91.51	57.06	91.59
	Reach1	1505	34.41	91.18	41.05	91.33	47.44	91.53	53.07	91.65	57.06	91.73
	Reach1	1510	34.41	91.24	41.05	91.38	47.44	91.57	53.07	91.69	57.06	91.76
	Reach1	1515	34.41	91.44	41.05	91.57	47.44	91.73	53.07	91.84	57.06	91.91
	Reach1	1520	34.41	91.56	41.05	91.70	47.44	91.85	53.07	91.95	57.06	92.03
	Reach1	1525	34.41	91.57	41.05	91.71	47.44	91.86	53.07	91.97	57.06	92.04
	Reach1	1530	34.41	91.77	41.05	91.90	47.44	92.04	53.07	92.15	57.06	92.22
	Reach1	1535	34.41	91.85	41.05	91.98	47.44	92.11	53.07	92.21	57.06	92.28
	Reach1	1540	34.41	92.00	41.05	92.13	47.44	92.26	53.07	92.36	57.06	92.42
	Reach1	1545	34.41	92.20	41.05	92.31	47.44	92.42	53.07	92.51	57.06	92.57
	Reach1	1550	34.41	92.35	41.05	92.48	47.44	92.60	53.07	92.70	57.06	92.76
	Reach1	1555	34.41	92.40	41.05	92.53	47.44	92.64	53.07	92.74	57.06	92.80
	Reach1	1560	34.41	92.60	41.05	92.72	47.44	92.83	53.07	92.92	57.06	92.98
	Reach1	1565	34.41	92.67	41.05	92.81	47.44	92.92	53.07	93.01	57.06	93.07
	Reach1	1570	34.41	92.73	41.05	92.87	47.44	92.99	53.07	93.09	57.06	93.15
	Reach1	1575	34.41	92.72	41.05	92.87	47.44	92.99	53.07	93.09	57.06	93.16
	Reach1	1580	34.41	92.68	41.05	92.83	47.44	92.95	53.07	93.05	57.06	93.11
	Reach1	1585	34.41	93.02	41.05	93.15	47.44	93.26	53.07	93.36	57.06	93.42
	Reach1	1590	34.41	93.32	41.05	93.44	47.44	93.56	53.07	93.65	57.06	93.71
	Reach1	1595	21.26	93.42	25.33	93.54	29.40	93.66	32.93	93.74	35.46	93.82
	Reach1	1600	21.26	93.44	25.33	93.56	29.40	93.67	32.93	93.75	35.46	93.83
	Reach1	1605	21.26	93.47	25.33	93.59	29.40	93.70	32.93	93.79	35.46	93.86
	Reach1	1610	21.26	93.51	25.33	93.63	29.40	93.74	32.93	93.83	35.46	93.90
	Reach1	1615	21.26	93.54	25.33	93.66	29.40	93.77	32.93	93.86	35.46	93.93
	Reach1	1620	21.26	93.64	25.33	93.76	29.40	93.87	32.93	93.95	35.46	94.03
	Reach1	1625	21.26	93.72	25.33	93.83	29.40	93.94	32.93	94.02	35.46	94.09
	Reach1	1630	21.26	93.83	25.33	93.94	29.40	94.04	32.93	94.12	35.46	94.20

River	Reach	Xsec ID	Flow (m^3/s) and Computed WSEL (m) for Different Flood Events									
			Q50	WL50	Q100	WL100	Q200	WL200	Q350	WL350	Q500	WL500
Tributary A	Reach1	2100	11.79	93.84	13.99	93.94	16.26	94.04	18.28	94.11	19.70	94.19
	Reach1	2105	11.79	93.87	13.99	93.97	16.26	94.06	18.28	94.13	19.70	94.20
	Reach1	2108	Rideau Road (East of Downey Road)									
	Reach1	2110	11.79	94.21	13.99	94.46	16.26	94.74	18.28	94.86	19.70	94.89
	Reach1	2115	11.79	94.23	13.99	94.48	16.26	94.76	18.28	94.85	19.70	94.89
	Reach1	2120	11.79	94.24	13.99	94.49	16.26	94.76	18.28	94.86	19.70	94.90
	Reach1	2125	11.79	94.25	13.99	94.50	16.26	94.77	18.28	94.86	19.70	94.90
	Reach1	2130	11.79	94.28	13.99	94.52	16.26	94.78	18.28	94.87	19.70	94.91
	Reach1	2135	11.79	94.36	13.99	94.56	16.26	94.80	18.28	94.89	19.70	94.93
	Reach1	2140	11.79	94.45	13.99	94.61	16.26	94.82	18.28	94.92	19.70	94.96
	Reach1	2145	11.79	94.73	13.99	94.82	16.26	94.95	18.28	95.04	19.70	95.08
	Reach1	2150	11.79	95.06	13.99	95.13	16.26	95.18	18.28	95.24	19.70	95.28
	Reach1	2155	11.79	95.15	13.99	95.21	16.26	95.27	18.28	95.32	19.70	95.36
	Reach1	2160	11.79	95.49	13.99	95.58	16.26	95.66	18.28	95.71	19.70	95.75
	Reach1	2165	11.79	95.62	13.99	95.71	16.26	95.78	18.28	95.83	19.70	95.87
	Reach1	2170	11.79	95.75	13.99	95.83	16.26	95.89	18.28	95.95	19.70	95.98
	Reach1	2175	11.79	95.92	13.99	96.00	16.26	96.06	18.28	96.12	19.70	96.15
	Reach1	2180	11.79	96.08	13.99	96.14	16.26	96.19	18.28	96.23	19.70	96.26
	Reach1	2185	11.79	96.46	13.99	96.52	16.26	96.58	18.28	96.63	19.70	96.66
	Reach1	2190	11.79	96.62	13.99	96.68	16.26	96.73	18.28	96.78	19.70	96.80
	Reach1	2195	11.79	96.77	13.99	96.81	16.26	96.87	18.28	96.92	19.70	96.95
	Reach1	2200	11.79	96.97	13.99	97.03	16.26	97.09	18.28	97.14	19.70	97.17
	Reach1	2205	11.79	97.09	13.99	97.16	16.26	97.22	18.28	97.26	19.70	97.29
	Reach1	2210	11.79	97.32	13.99	97.39	16.26	97.45	18.28	97.50	19.70	97.54
	Reach1	2215	9.27	97.54	11.18	97.62	13.09	97.69	14.76	97.74	15.94	97.78
	Reach1	2220	9.27	97.51	11.18	97.58	13.09	97.64	14.76	97.68	15.94	97.71
	Reach1	2223	Osgoode Link Pathway									
	Reach1	2225	9.27	97.95	11.18	98.16	13.09	98.37	14.76	98.56	15.94	98.70
	Reach1	2230	9.27	97.94	11.18	98.15	13.09	98.37	14.76	98.57	15.94	98.70
	Reach1	2235	9.27	98.02	11.18	98.22	13.09	98.42	14.76	98.61	15.94	98.74
	Reach1	2240	9.27	98.06	11.18	98.23	13.09	98.43	14.76	98.61	15.94	98.74
	Reach1	2245	9.27	98.07	11.18	98.24	13.09	98.43	14.76	98.61	15.94	98.74
	Reach1	2250	9.27	98.08	11.18	98.23	13.09	98.41	14.76	98.58	15.94	98.71
	Reach1	2253	Bowesville Road									
	Reach1	2255	9.27	98.37	11.18	98.61	13.09	98.89	14.76	99.19	15.94	99.43
	Reach1	2260	9.27	98.38	11.18	98.64	13.09	98.92	14.76	99.22	15.94	99.46
	Reach1	2265	9.27	98.40	11.18	98.65	13.09	98.93	14.76	99.23	15.94	99.47
	Reach1	2270	9.27	98.47	11.18	98.69	13.09	98.95	14.76	99.24	15.94	99.48
	Reach1	2275	9.27	98.56	11.18	98.74	13.09	98.98	14.76	99.26	15.94	99.48
Tributary B	Reach1	3100	9.80	93.88	11.72	93.98	13.65	94.09	15.31	94.16	16.53	94.24
	Reach1	3105	9.80	93.87	11.72	93.98	13.65	94.08	15.31	94.15	16.53	94.23
	Reach1	3108	Rideau Road (West of Downey Road)									
	Reach1	3110	9.80	94.56	11.72	94.93	13.65	95.05	15.31	95.11	16.53	95.15
	Reach1	3115	9.80	94.58	11.72	94.93	13.65	95.05	15.31	95.11	16.53	95.15
	Reach1	3120	9.80	94.58	11.72	94.93	13.65	95.05	15.31	95.11	16.53	95.15
	Reach1	3125	9.80	94.58	11.72	94.93	13.65	95.05	15.31	95.12	16.53	95.16
	Reach1	3130	9.80	94.58	11.72	94.94	13.65	95.05	15.31	95.12	16.53	95.16
	Reach1	3135	9.80	94.58	11.72	94.94	13.65	95.05	15.31	95.12	16.53	95.16
	Reach1	3140	9.80	94.59	11.72	94.94	13.65	95.06	15.31	95.12	16.53	95.16
	Reach1	3145	9.80	94.60	11.72	94.94	13.65	95.06	15.31	95.12	16.53	95.16
	Reach1	3148	Lot 26 Farm Access									
	Reach1	3150	9.80	94.60	11.72	94.94	13.65	95.06	15.31	95.12	16.53	95.16
	Reach1	3155	9.80	94.61	11.72	94.95	13.65	95.06	15.31	95.13	16.53	95.17
	Reach1	3160	9.80	94.64	11.72	94.95	13.65	95.07	15.31	95.13	16.53	95.17
	Reach1	3163	Lot 27 Farm Access									
	Reach1	3165	9.80	94.63	11.72	94.95	13.65	95.07	15.31	95.13	16.53	95.17
	Reach1	3170	9.80	94.68	11.72	94.96	13.65	95.08	15.31	95.14	16.53	95.18
	Reach1	3175	9.80	94.82	11.72	94.98	13.65	95.08	15.31	95.14	16.53	95.18
	Reach1	3180	9.80	94.86	11.72	94.99	13.65	95.09	15.31	95.14	16.53	95.23
	Reach1	3183	Downey Road									

River	Reach	Xsec ID	Flow (m^3/s) and Computed WSEL (m) for Different Flood Events									
			Q50	WL50	Q100	WL100	Q200	WL200	Q350	WL350	Q500	WL500
Tributary B	Reach1	3185	9.80	95.12	11.72	95.36	13.65	95.60	15.31	95.79	16.53	95.88
	Reach1	3190	9.80	95.10	11.72	95.35	13.65	95.59	15.31	95.78	16.53	95.88
	Reach1	3195	9.80	95.13	11.72	95.38	13.65	95.62	15.31	95.81	16.53	95.89
	Reach1	3200	9.80	95.16	11.72	95.38	13.65	95.62	15.31	95.81	16.53	95.88
	Reach1	3205	9.80	95.25	11.72	95.46	13.65	95.66	15.31	95.83	16.53	95.90
	Reach1	3210	9.80	95.44	11.72	95.54	13.65	95.70	15.31	95.86	16.53	95.92
	Reach1	3215	9.80	95.55	11.72	95.63	13.65	95.75	15.31	95.88	16.53	95.94
	Reach1	3220	6.99	95.69	8.47	95.77	9.97	95.86	11.28	95.95	12.20	96.00
	Reach1	3225	6.99	95.84	8.47	95.90	9.97	95.95	11.28	96.01	12.20	96.04

Table 16 List of RVCA Regulation Permit Files (2011 to 31 May, 2019)

RVCA File #	Location	Year of Application	Flood Line Change Required?	Breif Description
18-GLO-LRE-0033	683 BALLYCASTLE CRESCENT	2018	No	LIFTING 30CM RESERVE
18-GLO-LRE-0119	692 BALLYCASTLE CRESCENT	2018	No	LIFTING 30CM RESERVE
18-GLO-SEV-0128	300, 302 COOKS MILL CRESCENT	2018	No	CONSENT
RV3-1218	Ottawa Capital Rail	2018	No	ALTERATION TO AN EXISTING WATERCOURSE - INSTALLATION OF A PATHWAY CULVERT
RV3-6318	Mitch Owens Rd	2018	No	ALTERWATER. - 2018 EXPEDITED CULVERTS - EAST
17-GLO-PIN-5011	RIDEAU RD	2017	No	PRECONSULT/INQUIRY
RV3-0917	LIMEBANK RD	2017	No	ALTERATION TO AN EXISTING WATERCOURSE - PROPOSED GAS PIPELINE CROSSING UNDER A CULVERT
RV3-5117	4450 LIMEBANK RD	2017	Yes	DEVELOPMENT - STRUCTURE - CONSTRUCT RESIDENCE & ALTER WATERCOURSE Project 160401232 - DWGs: GP-1 Rev 5 (Proposed Grading Plan) & SD-1 (Storm Drainage Plan), Stantec. May 2017.
RV3-0416	Earl Armostrong Rd	2016	No	ALTERATION TO AN EXISTING WATERCOURSE - TO REMOVE AND REPLACE EXISTING CULVERTS
RV3-0416	Spratt Rd	2016	No	ALTERATION TO AN EXISTING WATERCOURSE - TO REMOVE AND REPLACE EXISTING CULVERTS
RV3-1516	1423 EARL ARMSTRONG RD	2016	Yes	DEVELOPMENT - GRADING - FILL PLACEMENT & DRAINAGE TRENCHES TO ACHIEVE SLOPE STABILITY FOR PARKING AISLE Project 103121 - DWG: GR (Grading Plan), Novatech. January 2016. Project PG2776 - DWG: 2 & 4 (Geotechnical Investigation), PattersonGroup. September 2014.
RV3-2516	300 Hunt Club Road	2016	No	Outlet To Be Dug Into Bank Of Deniverville Drain & Rip Rap
RV3-5916	Spratt Drain	2016	No	ALTERATION TO AN EXISTING WATERCOURSE - DRAIN MAINTENANCE
RV3-1715	Thomas Gamble	2015	No	ALTERATION TO AN EXISTING WATERCOURSE - CROSS THE MUNICIPAL DRAIN FOR SITE SERVICING OF THE DEVELOPMENT
RV3-4315	Thomas Gamble	2015	No	ALTERATION TO AN EXISTING WATERCOURSE - REALIGNMENT OF A DITCH OFF OF THE THOMAS GAMBLE MUNC. DRAIN
RV3-7514	Lester Rd	2014	No	Replacement Of Existing Culverts
RV3-4613	Spratt Drain	2013	No	ALTERATION TO AN EXISTING WATERCOURSE - DRAIN MAINTENANCE OR REPAIR
RV3-7513	Thomas Gamble	2013	No	ALTERATION TO AN EXISTING WATERCOURSE - NOTIFICATION OF DRAIN MAINTENANCE OR REPAIR
RV3-2512T	MITCH OWENS R	2012	No	BRIDGE, CULVERT, ROAD CROSSING, MAJOR WORKS - REMOVE & REPLACE CULVERT -COMMENTS FIELD FROM OLD DATABASE: CULVERT
RV3-2612T	RIDEAU RD	2012	No	BRIDGE, CULVERT, ROAD CROSSING, MAJOR WORKS - REPLACE 3 CULVERTS -COMMENTS FIELD FROM OLD DATABASE: 3 CULVE
RV3-2712T	RIDEAU RD	2012	No	BRIDGE, CULVERT, ROAD CROSSING, MAJOR WORKS - REMOVE & REPLACE CULVERT -COMMENTS FIELD FROM OLD DATABASE: CULVERT
RV3-3512T	Gloucester Lot 28++ Concession 2+	2012	No	Bottom Only Cleanout And Brushing Of Top Bank
RV3-7612	554 River Rd	2012	No	Construct Addition To House And Construct Pool House -comments Field From Old Database: Additio
RV3-8712T	BOOTHFIELD ST	2012	No	BRIDGE, CULVERT, ROAD CROSSING, MAJOR WORKS - INTERIM DRAINAGE OUTLET PIPE FOR EXISTING SYPHON - PROVIDE A POSITIVE DRAINAGE OUTLET FOR AN EXISTING SYPHON DURING INTERIUM CONDITIONS
RV3-0811T	Bowesville Rd	2011	No	Culvert Replacement For Conversion Of Old Railway Line To Recreational Trail -comments Field From Old Database: Culvert
RV3-6411	Gloucester Lot 30 Concession 2	2011	No	Bottom Clean Out Of Nolan Municipal Drain - Snc Did The Review - comments Field From Old Database: Drain

Table 17: Culvert data used for floodline plotting (Mosquito Creek)

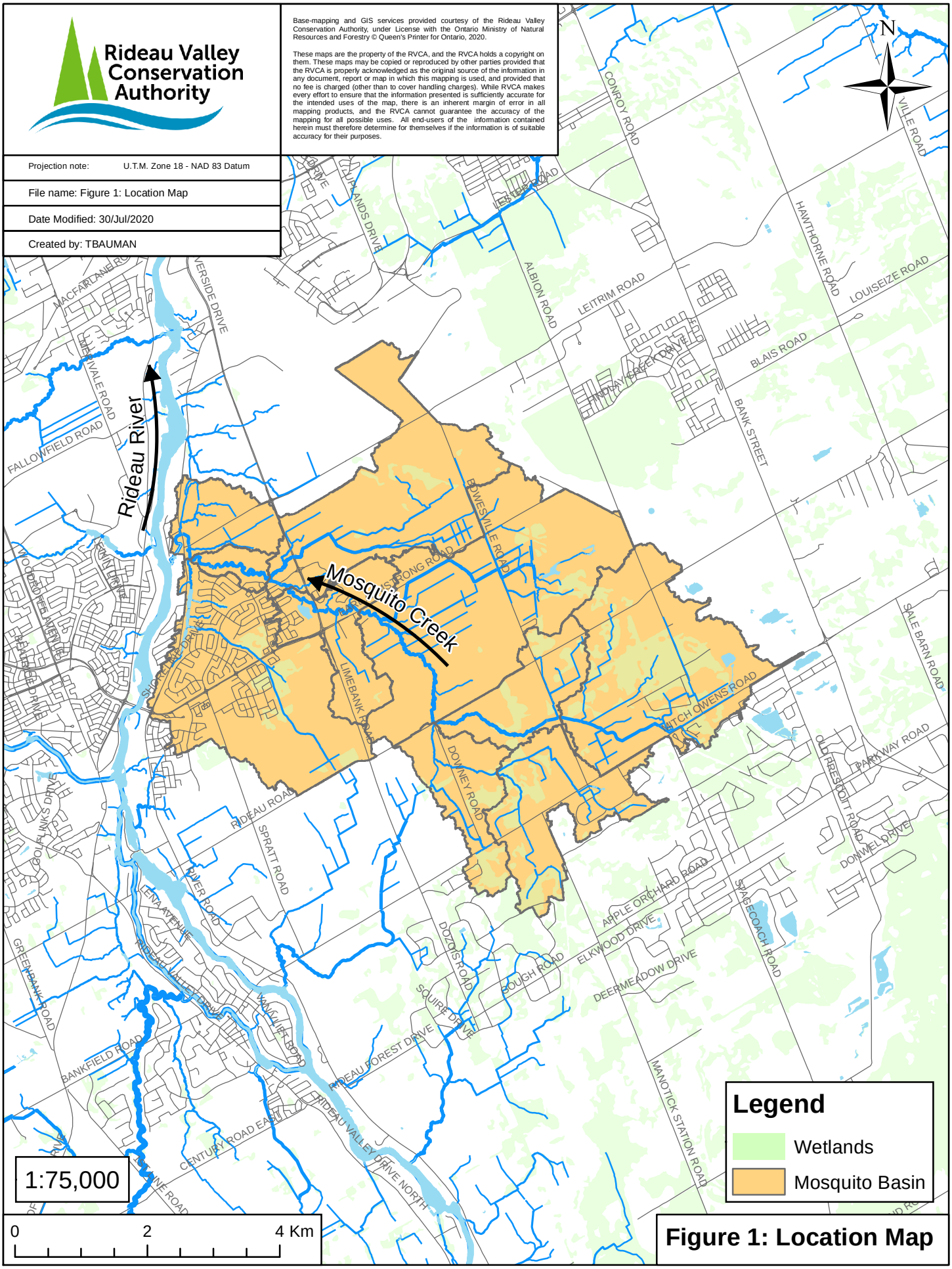
Serial	SN# *	Location	Draining to Watercourse	Downstream Invert	Upstream Invert	Downstream Obvert †	Upstream Obvert †	Shape	Survey Date **
				(m)	(m)	(m)	(m)		(dd/mm/yyyy)
1	220190	Mulligan Street near River Road	Mosquito Creek	76.96	77.17	78.26	78.47	Circular	19/08/2020
2	1439_Mulligan	Driveway of 1439 Mulligan Street	Mosquito Creek	79.13	79.27	---	---	Circular	19/08/2020
3	490_River	Driveway of 490 River Road	Mosquito Creek	79.36	79.43	---	---	Circular	19/08/2020
4	488_River	Driveway of 488 River Road	Mosquito Creek	---††	79.48	---	---	Circular	19/08/2020
5	Unnamed	River Road just north of Mulligan Street	Mosquito Creek	78.68	77.35	---	---	Circular	19/08/2020
6	5289_Downey	Driveway of 5289 Downey Road	Tributary B	95.09	95.12	---	---	Circular	19/08/2020
7	5265_Downey	Driveway of 5265 Downey Road	Tributary B	94.82	94.71	---	---	Circular	19/08/2020
8	5217_Downey	Driveway of 5217 Downey Road	Tributary B	93.96	94.01	94.80	---	Circular	19/08/2020
9	5196_Downey	Driveway of 5196 Downey Road	Tributary B	94.20	94.04	---	---	Circular	19/08/2020
10	5195_Downey	Driveway of 5195 Downey Road	Tributary B	94.27	94.31	---	---	Circular	19/08/2020
11	L27_C2	Road access for Lot 27, Concession 2	Tributary B	94.32	94.79	---	---	Circular	19/08/2020
12	5291_Bowesville	Driveway of 5291 Bowesville Road	Tributary A	98.60	---††	---	---	Circular	19/08/2020
13	5275_Bowesville	Driveway of 5275 Bowesville Road	Tributary A	97.10	97.51	97.72	98.01	Circular	19/08/2020
14	5263_Bowesville	Driveway of 5263 Bowesville Road	Tributary A	98.19	98.25	98.81	100.14	Circular	19/08/2020
15	OLP_Ditch	Private Access intersecting Osgoode Link Pathway	Tributary A	97.54	97.60	98.07	98.02	Circular	19/08/2020

* City of Ottawa Structure Numbers that were obtained from GIS and confirmed onsite during survey, except for driveways which were given an address reference.

** Surveys conducted by RVCA staff.

† Many obvert values were not obtained as the purpose of the data collection was to assess hydraulic connectivity and not for hydraulic computations.

†† Niether 488 River Road's downstream value or 5291 Bowesville Road's upstream value could be accurately obtained due to rocky and vegetative obstructions. Elevations were observed to closely match those at the other end of the culvert, confirming hydrauliuc flow capability.


Rideau Valley Conservation Authority
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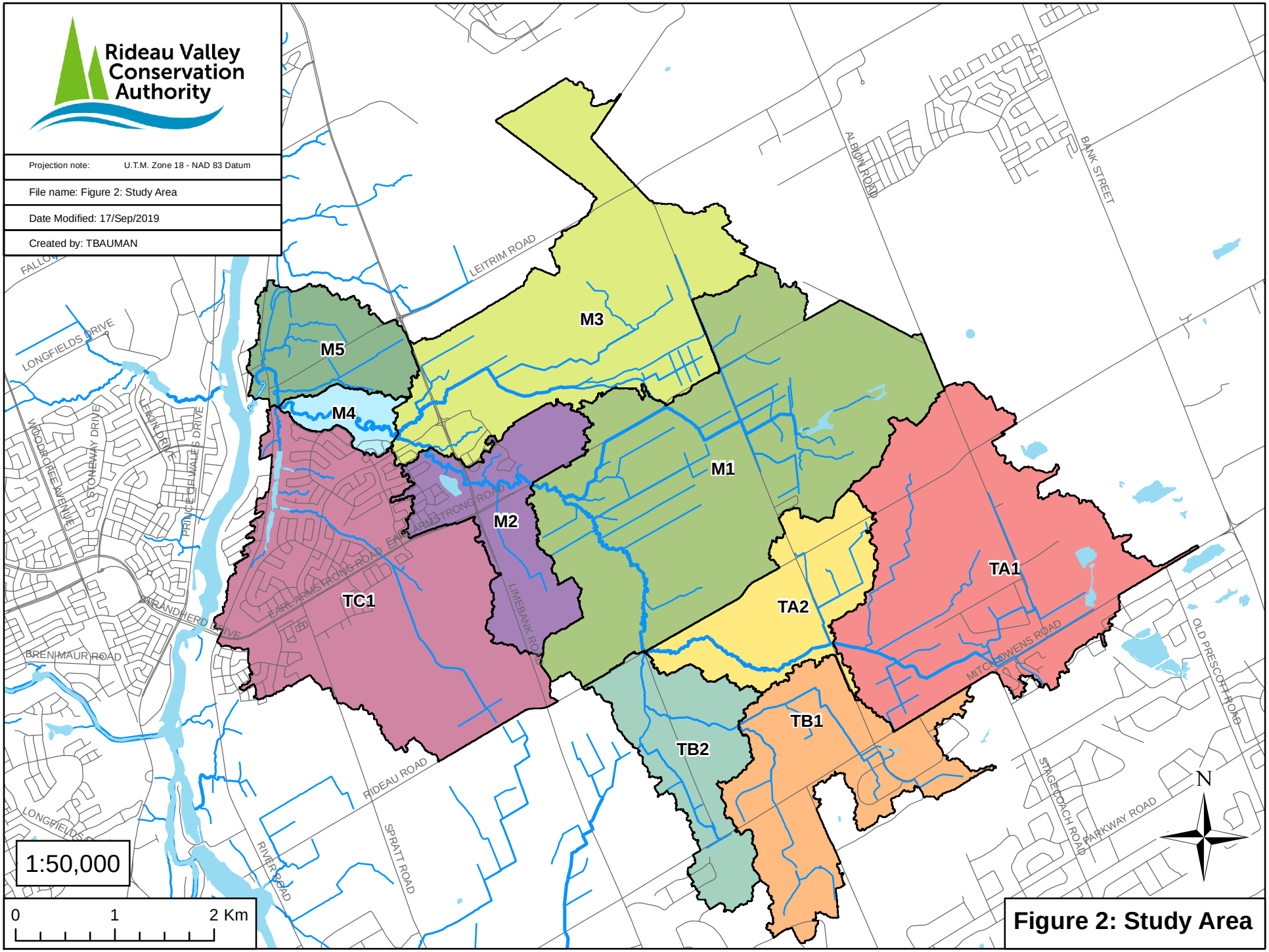
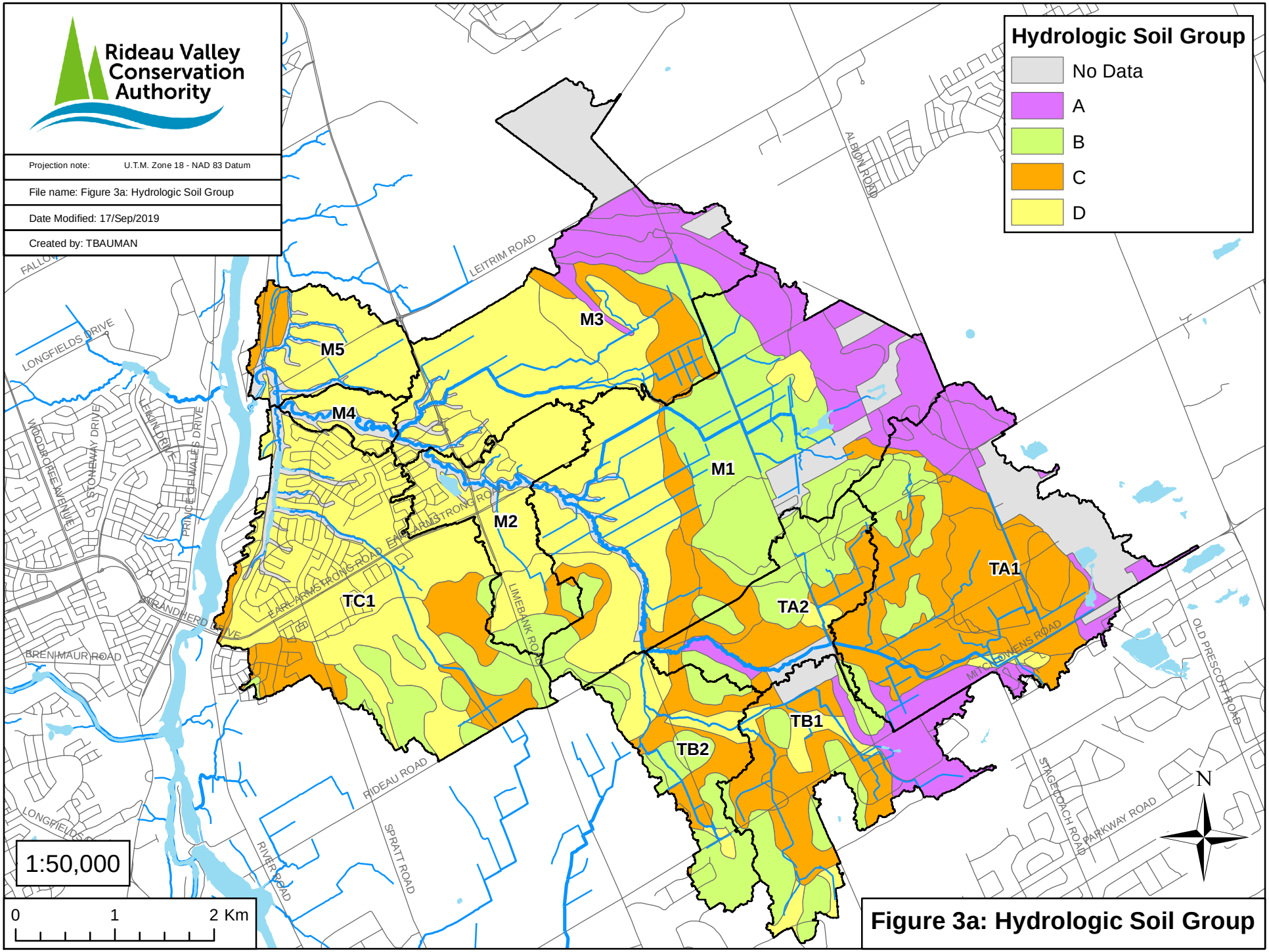
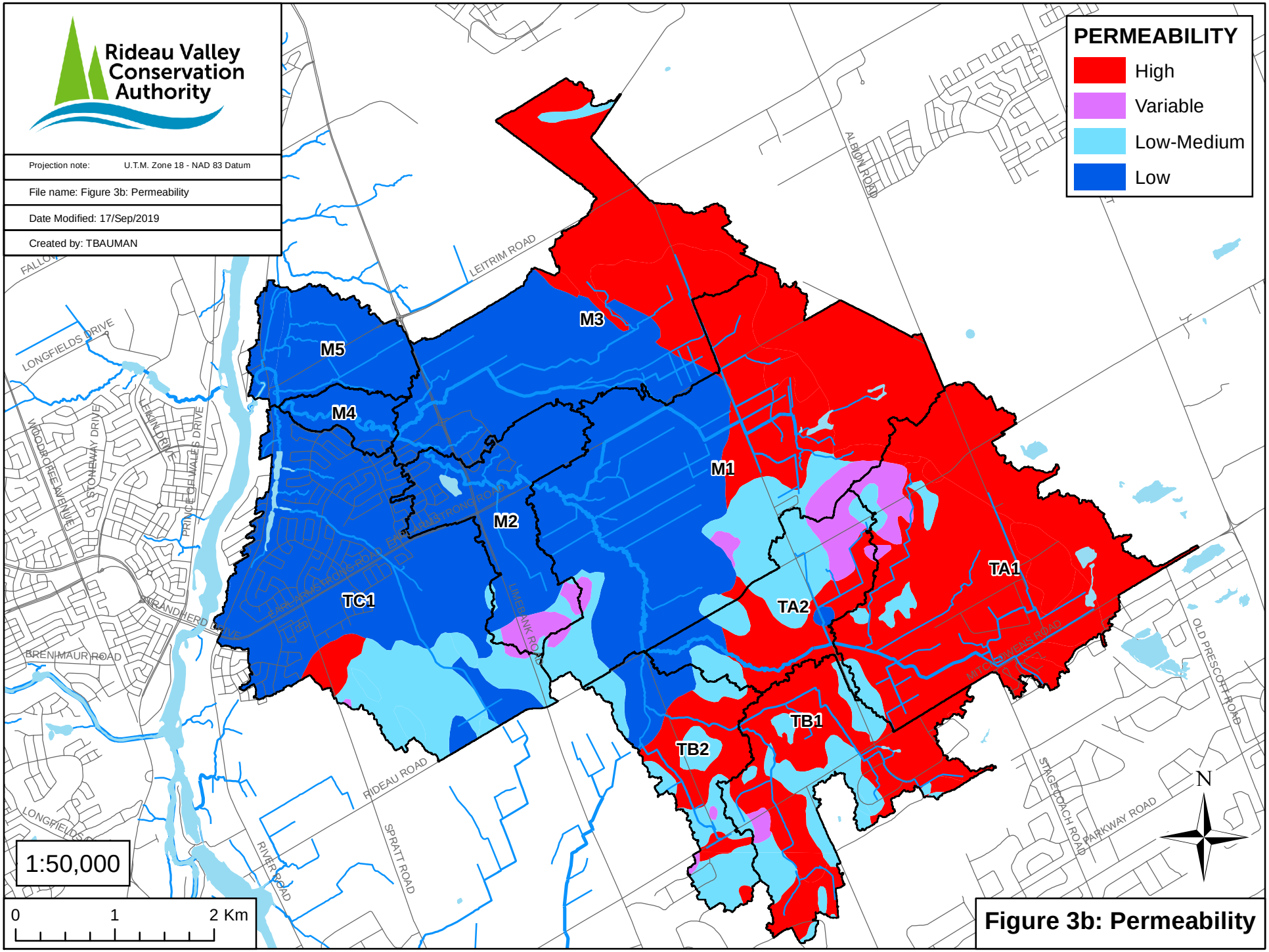
Projection note: U.T.M. Zone 18 - NAD 83 Datum
File name: Figure 1: Location Map
Date Modified: 30/Jul/2020
Created by: TBAUMAN
N
Rideau River
Mosquito Creek
CONROY ROAD
VILLE ROAD
HIGHLANDS DRIVE
ALBION ROAD
LEITRIM ROAD
HAWTHORNE ROAD
LOUISEIZE ROAD
BLAIS ROAD
BANK STREET
MACFARLANE RD
RIVERSIDE DRIVE
DELVALE ROAD
FALLOWFIELD ROAD
BOWESVILLE ROAD
STRONG ROAD
LIMEBANK ROAD
DOWNEY ROAD
SALE BARN ROAD
PARKWAY ROAD
OLD RIDEAU ROAD
DONWEL DRIVE
RIDEAU ROAD
SPRATT ROAD
RIVER ROAD
GOLFLINKS DRIVE
GREENBANK ROAD
BANKFIELD ROAD
APPLE ORCHARD ROAD
ELKWOOD DRIVE
DEERMEADOW DRIVE
DOZOIS ROAD
SQUIRE DRIVE
BOUGH ROAD
STAGECOACH ROAD
MANOTICK STATION ROAD
RIDEAU FOREST DRIVE
RIDEAU VALLEY DRIVE NORTH
CENTURY ROAD EAST
1:75,000
0
2
4 Km
Legend
Wetlands
Mosquito Basin
Figure 1: Location Map


Rideau Valley Conservation Authority
Projection note: U.T.M. Zone 18 - NAD 83 Datum
File name: Figure 2: Study Area
Date Modified: 17/Sep/2019
Created by: TBAUMAN
M1
M2
M3
M4
M5
TA1
TA2
TB1
TB2
TC1
LEITRIM ROAD
ALBION ROAD
BANK STREET
LONGFIELDS DRIVE
STONEWAY DRIVE
WOODBRIDGE AVENUE
LEMAIN DRIVE
PRINCE OF WALES DRIVE
EARL ARMSTRONG ROAD
LIMEBANK ROAD
BRENMAUR ROAD
RIDEAU ROAD
SPRATT ROAD
RIVER ROAD
MITCHELL OWENS ROAD
OLD PRESCOTT ROAD
STAGECOACH ROAD
PARKWAY ROAD
N
1:50,000
0
1
2 Km
Figure 2: Study Area


Rideau Valley Conservation Authority
Projection note: U.T.M. Zone 18 - NAD 83 Datum
File name: Figure 3a: Hydrologic Soil Group
Date Modified: 17/Sep/2019
Created by: TBAUMAN
Hydrologic Soil Group
No Data
A
B
C
D
M1
M2
M3
M4
M5
TA1
TA2
TB1
TB2
TC1
LEITRIM ROAD
ALBION ROAD
LONGFIELDS DRIVE
STONEWAY DRIVE
WOODBRIDGE AVENUE
LEMAIN DRIVE
PRINCE OF WALES DRIVE
BRENMAUR ROAD
EARL ARMSTRONG ROAD
LIMEBANK ROAD
RIDEAU ROAD
SPRATT ROAD
RIVER ROAD
MITCHELL OWENS ROAD
OLD PRESCOTT ROAD
STAGECOACH ROAD
PARKWAY ROAD
N
1:50,000
0
1
2 Km
Figure 3a: Hydrologic Soil Group


Rideau Valley Conservation Authority
Projection note: U.T.M. Zone 18 - NAD 83 Datum
File name: Figure 3b: Permeability
Date Modified: 17/Sep/2019
Created by: TBAUMAN
PERMEABILITY
High
Variable
Low-Medium
Low
M1
M2
M3
M4
M5
TA1
TA2
TB1
TB2
TC1
LEITRIM ROAD
ALBION ROAD
LONGFIELDS DRIVE
STONEWAY DRIVE
WOODBRIDGE AVENUE
LEMAIN DRIVE
PRINCE OF WALES DRIVE
BRENMAUR ROAD
BRANDYHERD DRIVE
EARL ARMSTRONG ROAD
LIMEBANK ROAD
RIDEAU ROAD
SPRATT ROAD
RIVER ROAD
MITCHELL FOULDS ROAD
OLD PRESCOTT ROAD
STAGECOACH ROAD
PARKWAY ROAD
N
1:50,000
0
1
2 Km
Figure 3b: Permeability

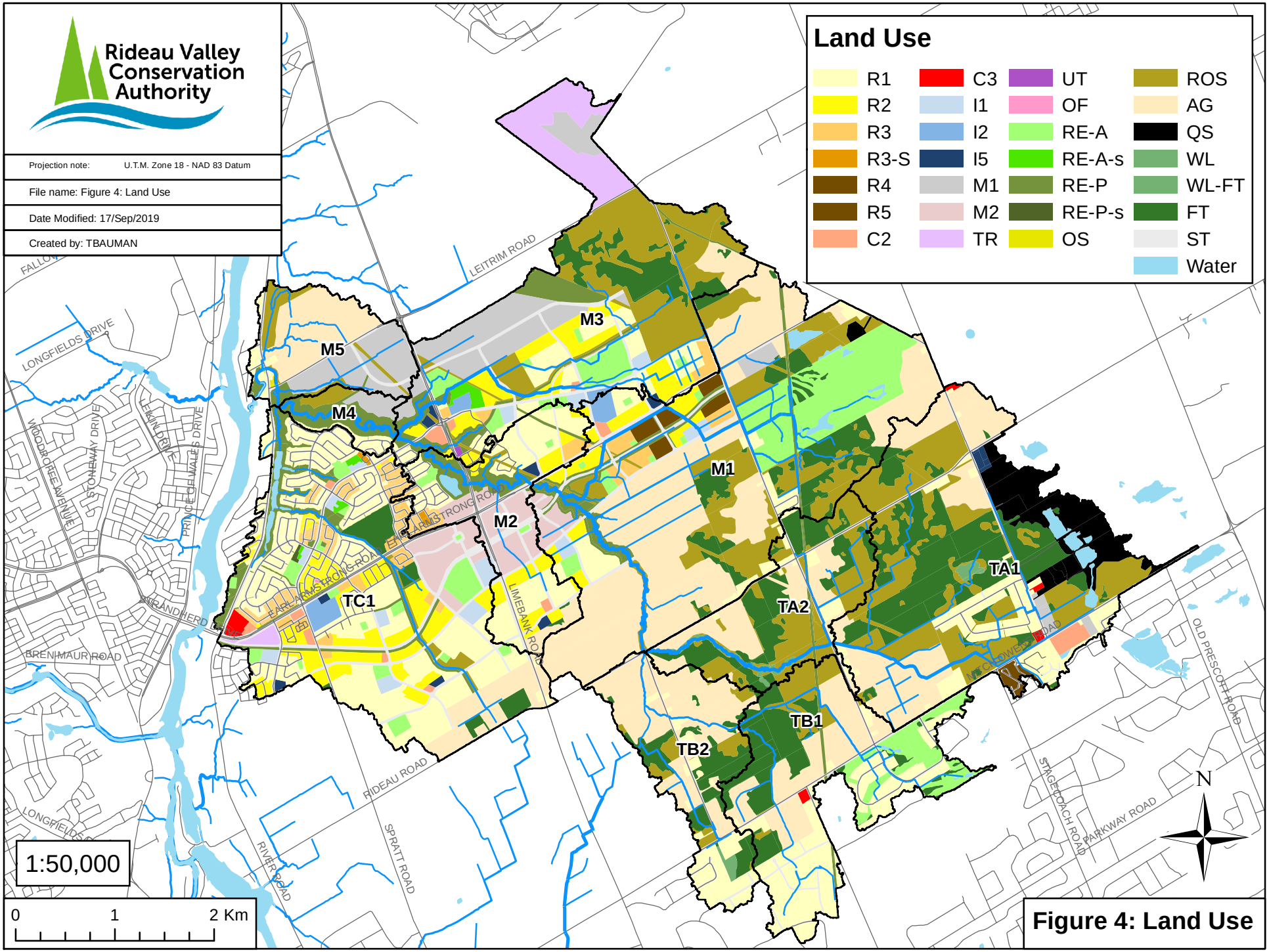


Figure 4: Land Use

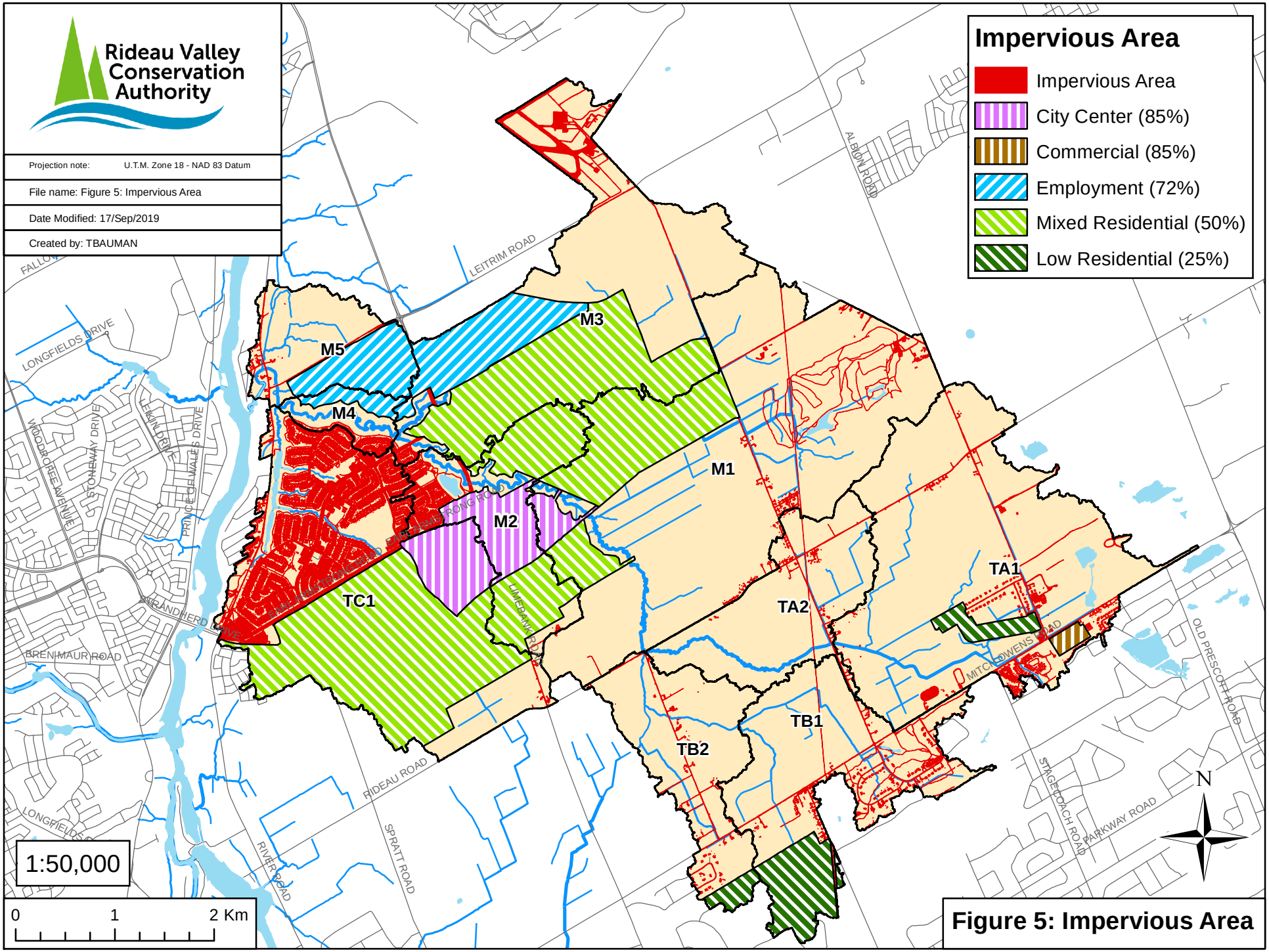
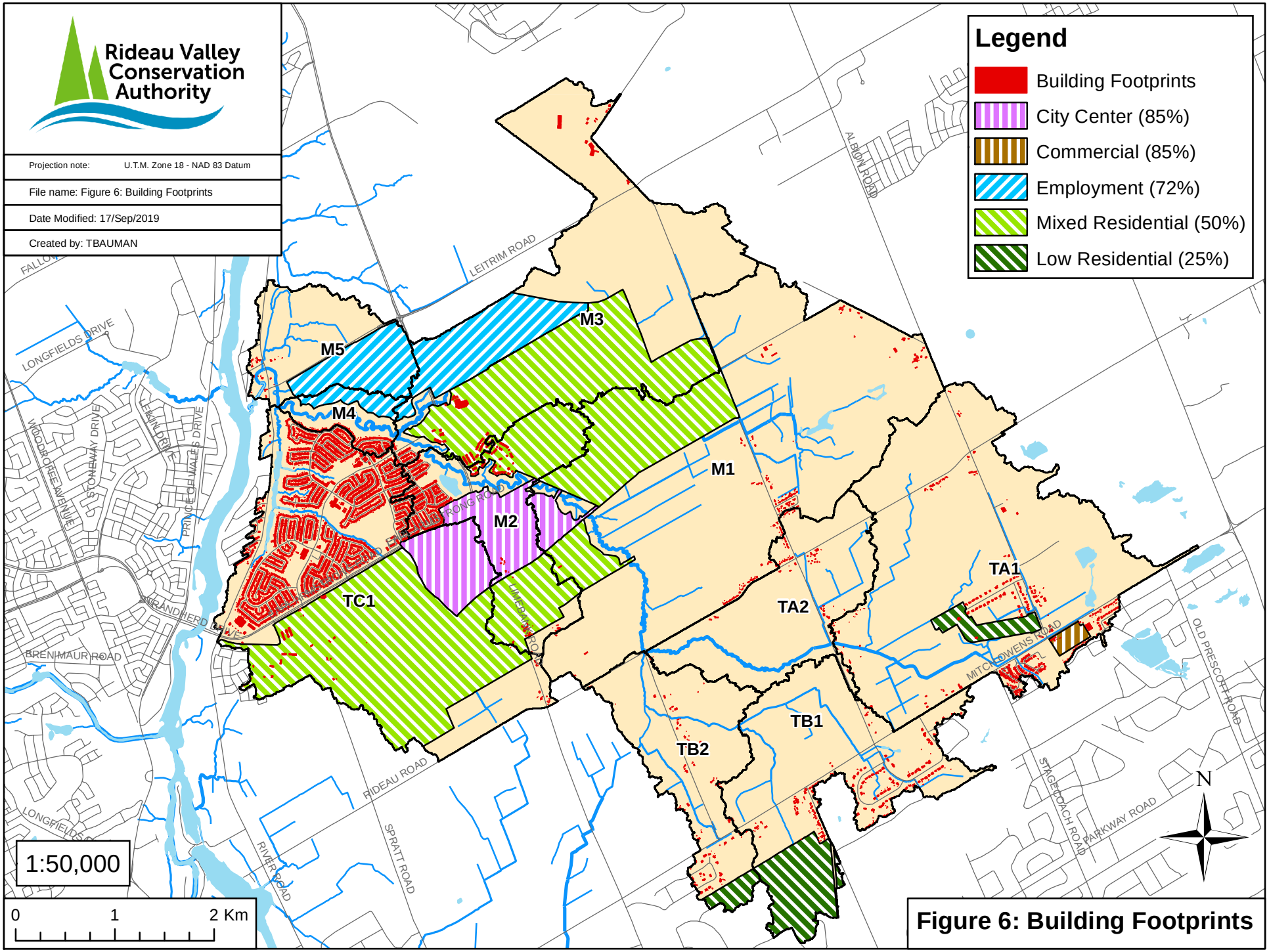


Figure 5: Impervious Area


Rideau Valley Conservation Authority
Projection note: U.T.M. Zone 18 - NAD 83 Datum
File name: Figure 6: Building Footprints
Date Modified: 17/Sep/2019
Created by: TBAUMAN
Legend
Building Footprints
City Center (85%)
Commercial (85%)
Employment (72%)
Mixed Residential (50%)
Low Residential (25%)
M1
M2
M3
M4
M5
TA1
TA2
TB1
TB2
TC1
LEITRIM ROAD
ALBION ROAD
LONGFIELDS DRIVE
STONEWAY DRIVE
WOODBRIDGE AVENUE
LEMAIN DRIVE
PRINCE OF WALES DRIVE
ARMSTRONG ROAD
BRANDYWINE DRIVE
BRENMAUR ROAD
LIMEBANK ROAD
MITCHELL OWENS ROAD
OLD PRESCOTT ROAD
STAGECOACH ROAD
PARKWAY ROAD
RIDEAU ROAD
SPRATT ROAD
RIVER ROAD
1:50,000
0
1
2 Km
N
Figure 6: Building Footprints

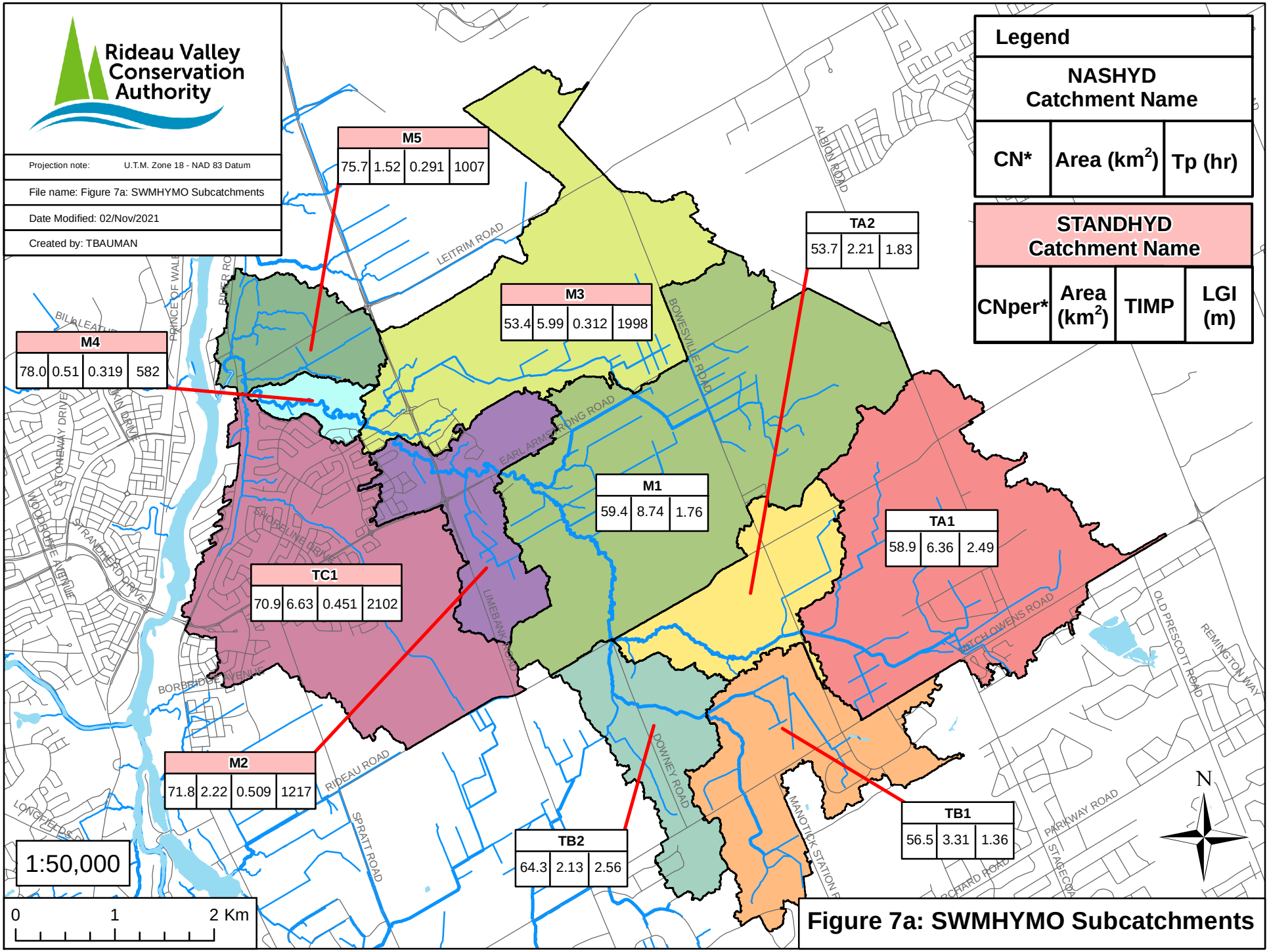
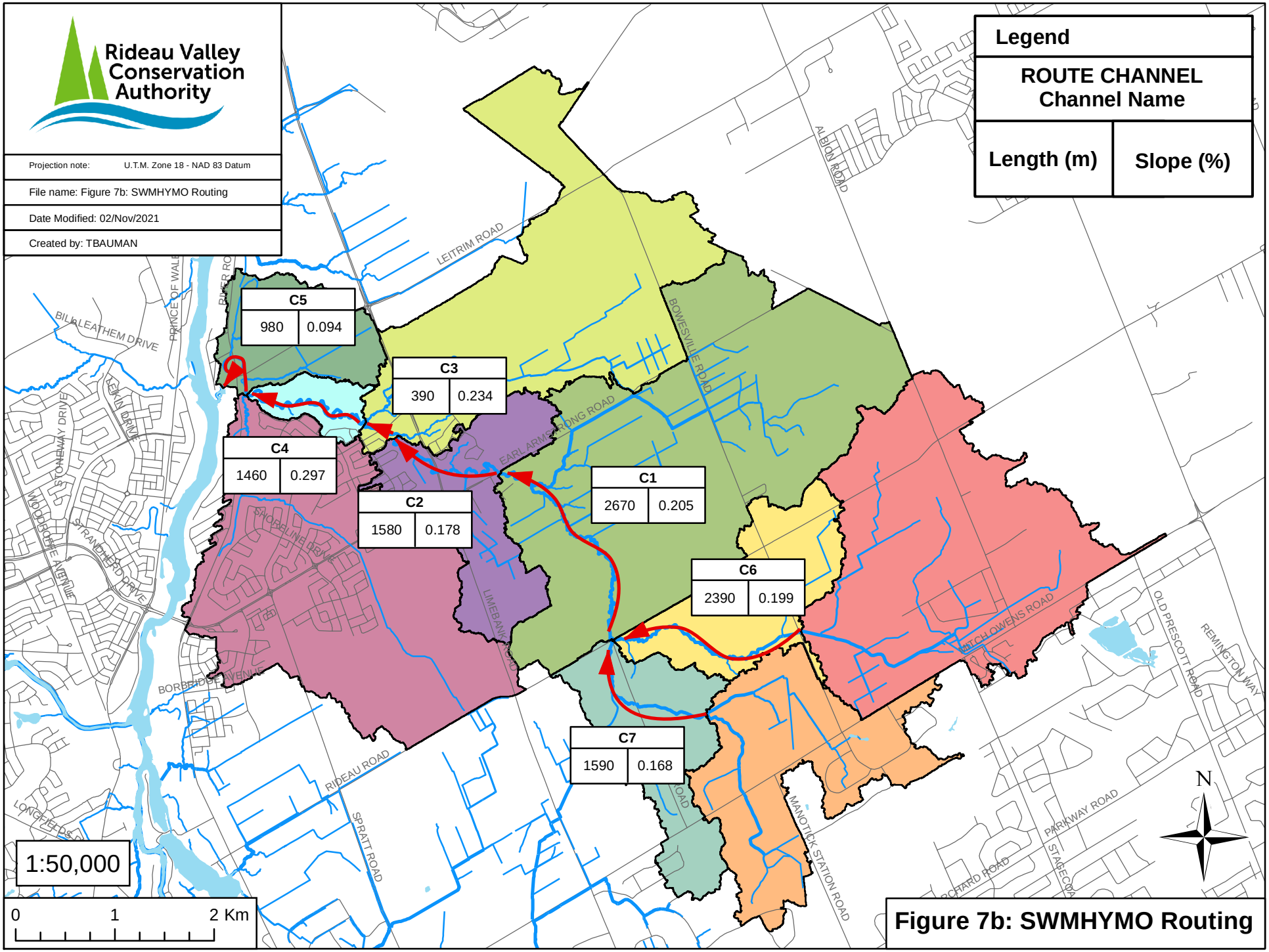


Figure 7a: SWMHYMO Subcatchments


Rideau Valley Conservation Authority
Projection note: U.T.M. Zone 18 - NAD 83 Datum
File name: Figure 7b: SWMHYMO Routing
Date Modified: 02/Nov/2021
Created by: TBAUMAN
Legend
ROUTE CHANNEL
Channel Name
Length (m)
Slope (%)
C5
980
0.094
C3
390
0.234
C4
1460
0.297
C2
1580
0.178
C1
2670
0.205
C6
2390
0.199
C7
1590
0.168
LEITRIM ROAD
ALBION ROAD
BOWESVILLE ROAD
EARL ARMSTRONG ROAD
BILL LEATHEM DRIVE
PRINCE OF WALES
STONEWAY DRIVE
KELKIN DRIVE
MACDONALD AVENUE
STRANDHERD DRIVE
SHORELINE DRIVE
LIMEBANK ROAD
BORRISOKANE AVENUE
RIDEAU ROAD
SPRATT ROAD
LONGFIELDS
MITCH OWENS ROAD
OLD PRESCOTT ROAD
REMINGTON WAY
MANOTICK STATION ROAD
PARKWAY ROAD
ORCHARD ROAD
1:50,000
0
1
2 Km
N
Figure 7b: SWMHYMO Routing

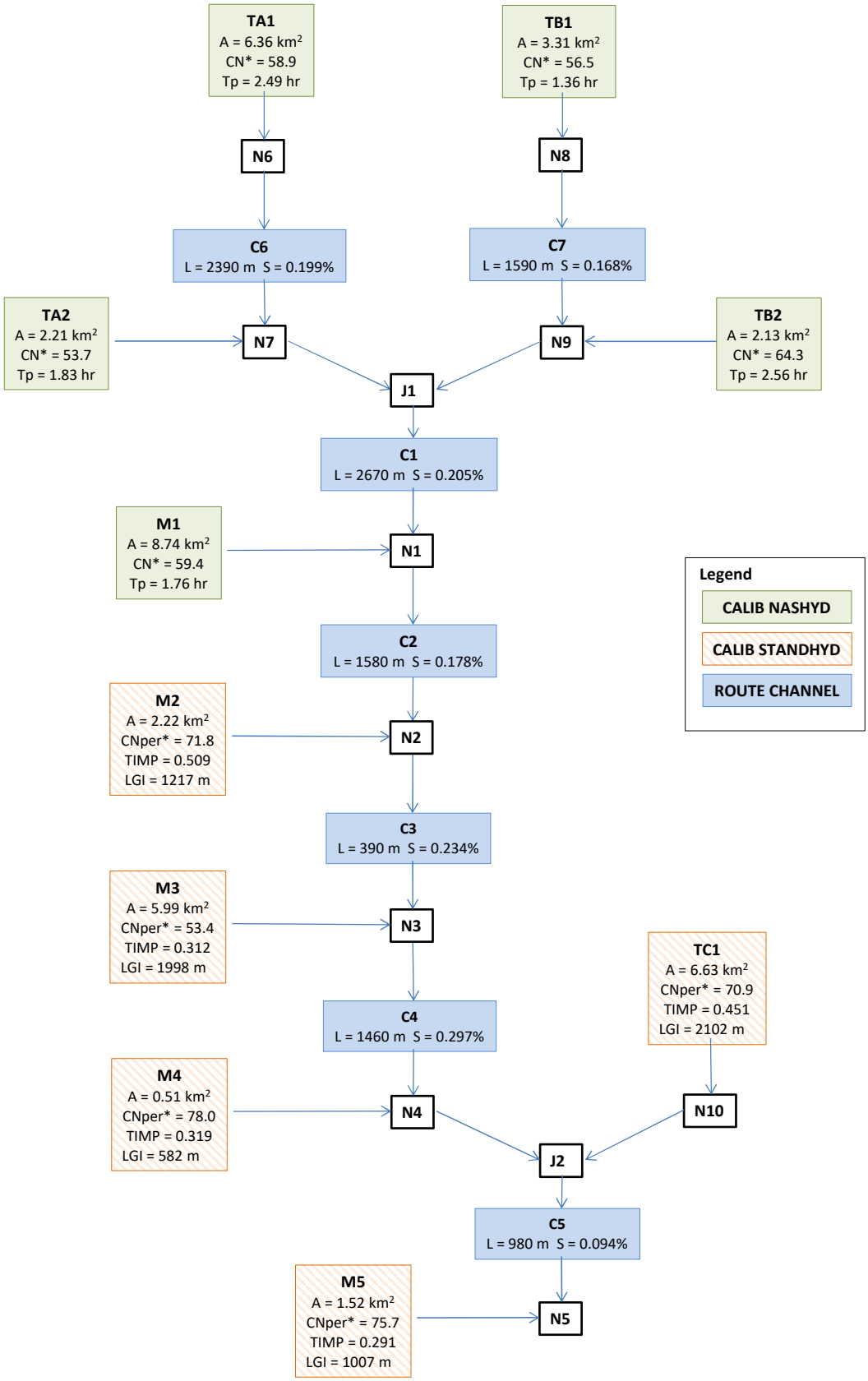


Figure 8 SWMHYMO Flow Chart

Figure 9 IDF curve for Ottawa Airport based on 1967-2007 data

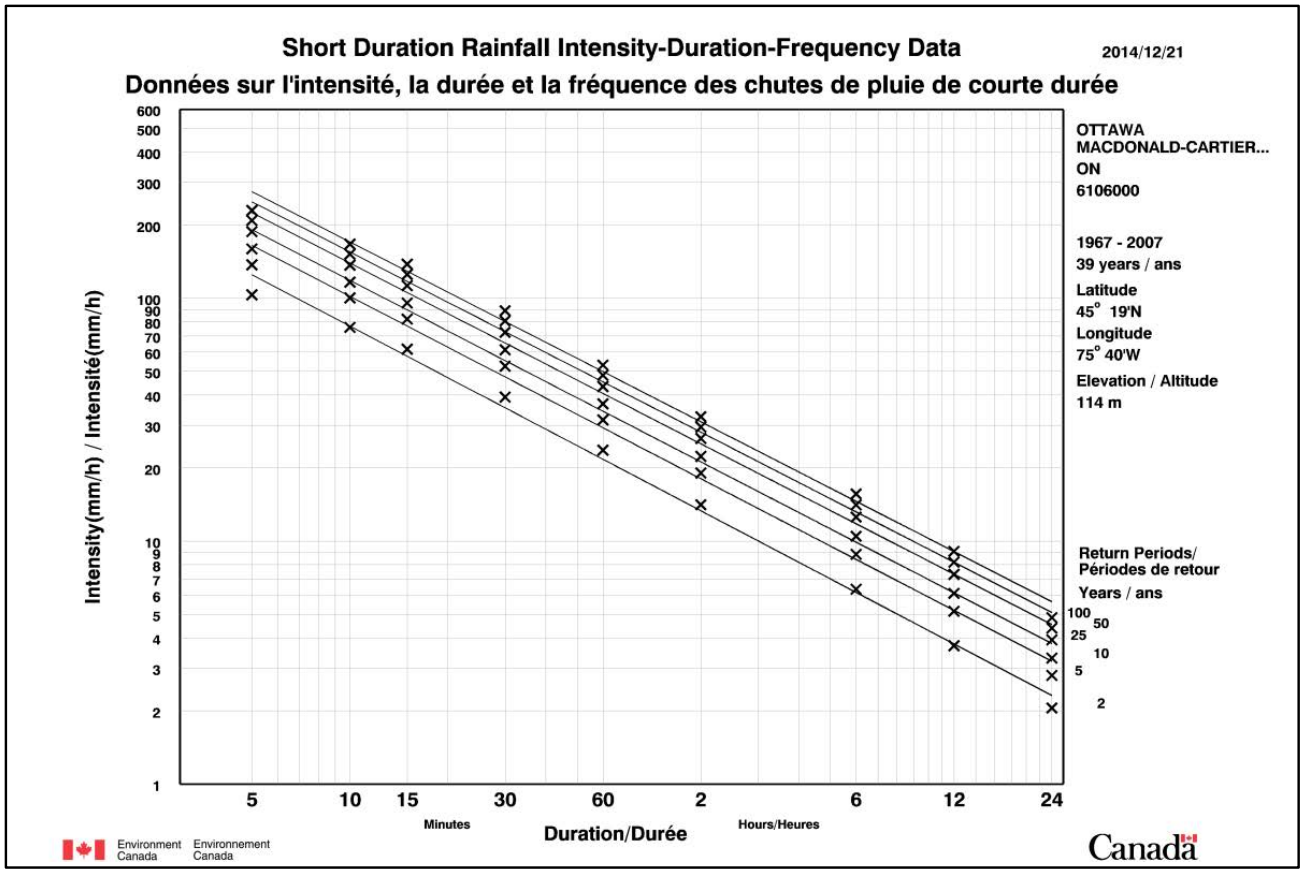


Figure 10 Fitted IDF curves for Ottawa Airport generated by STORMS software

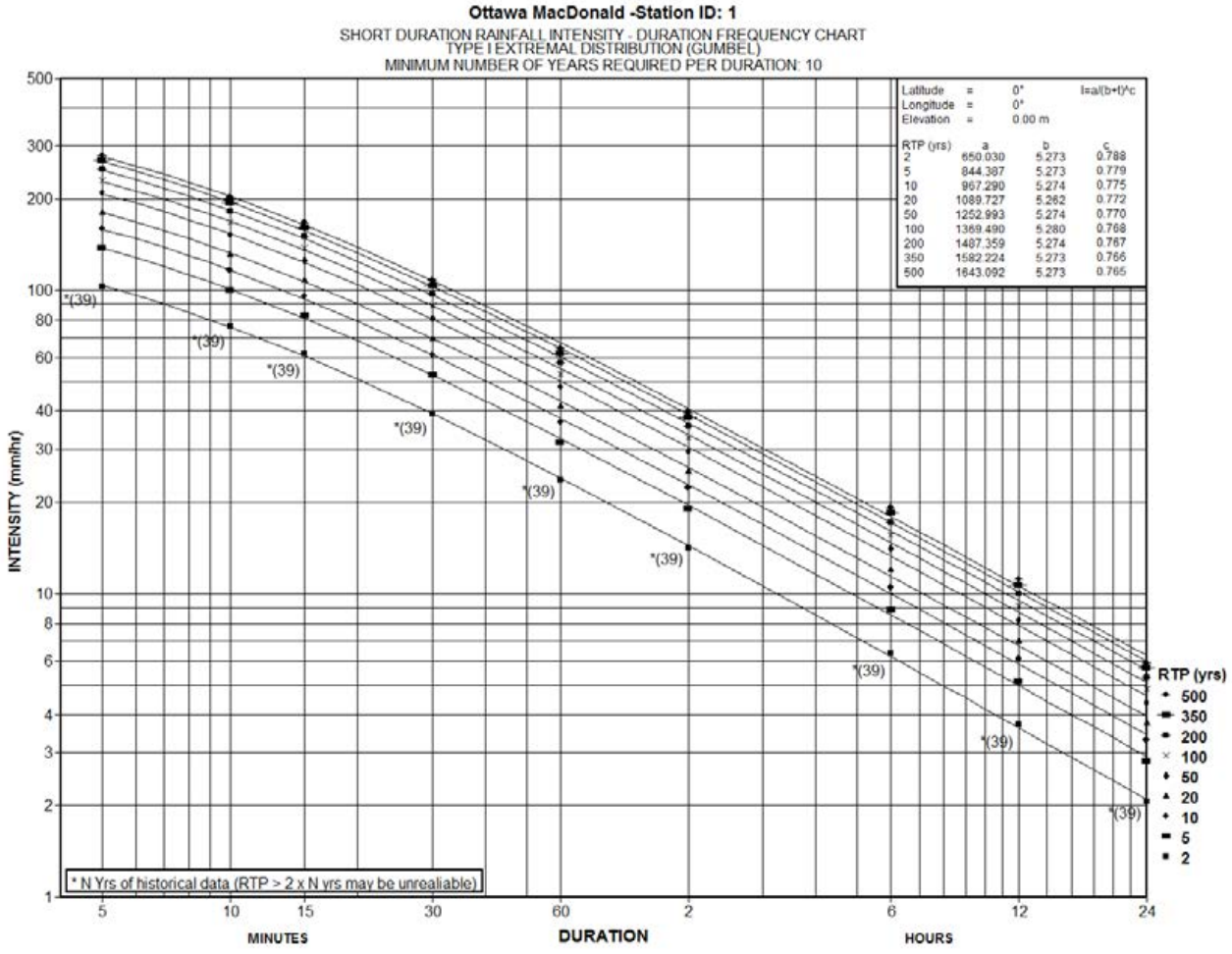
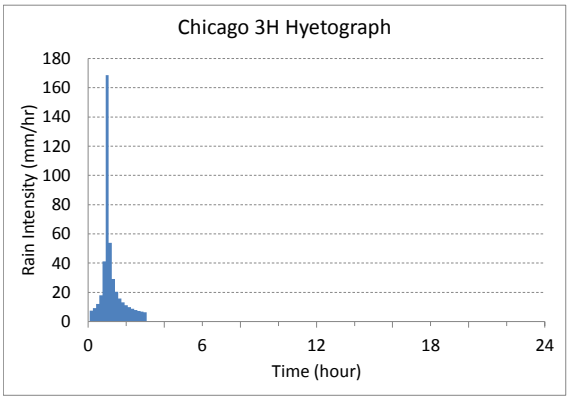
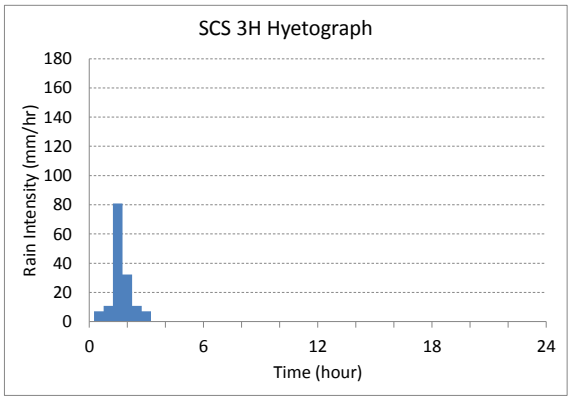
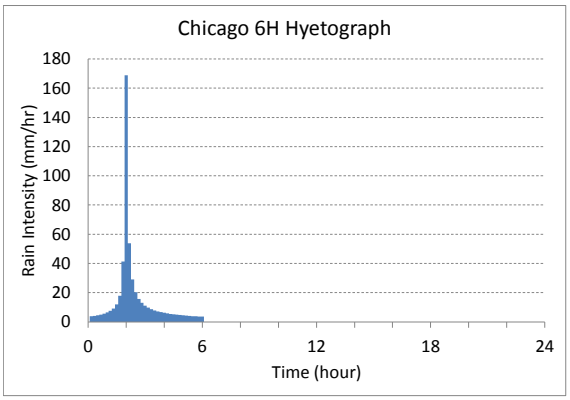
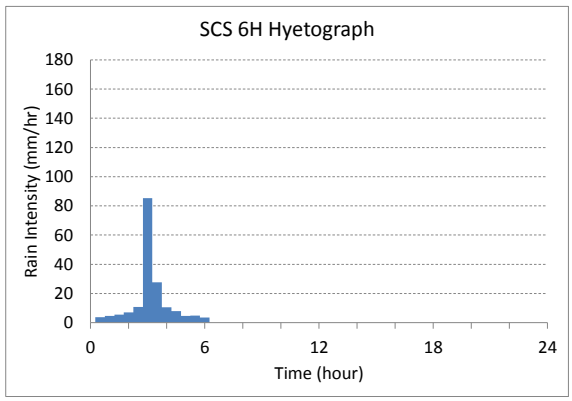


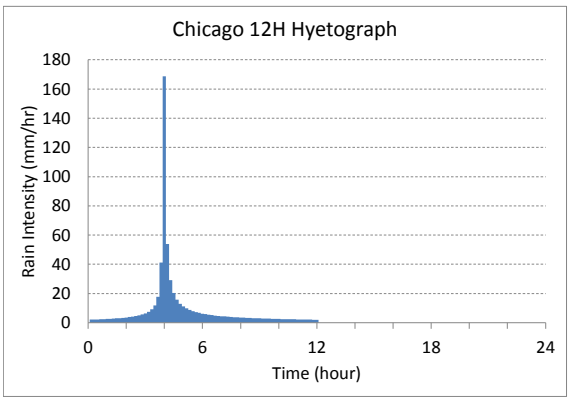
Figure 11 Hyetographs of various design storms

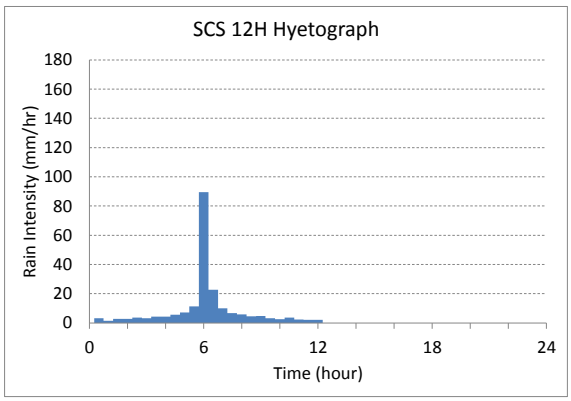


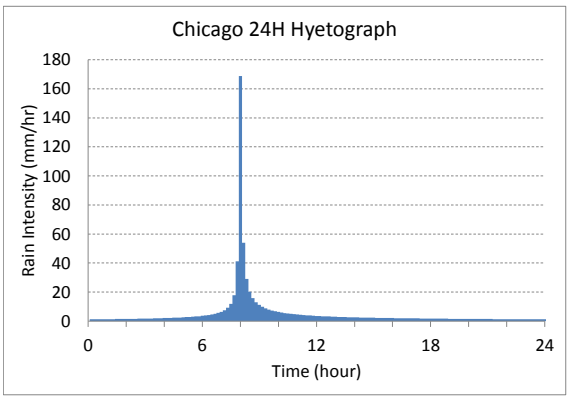












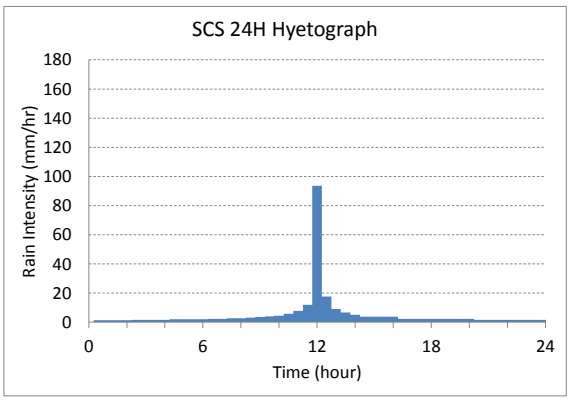
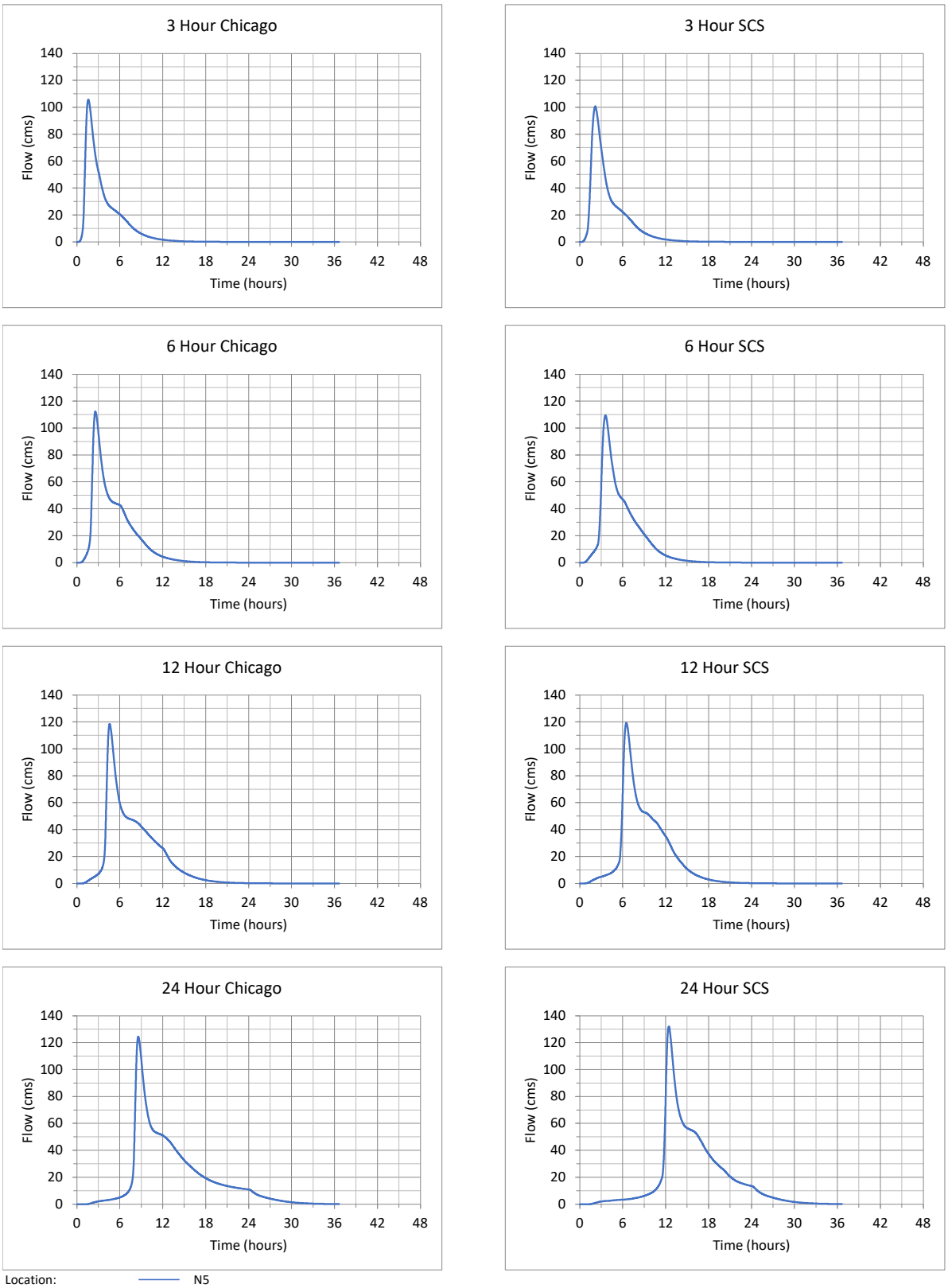


Figure 12 SWMHYMO generated flows at N5 for different design storms



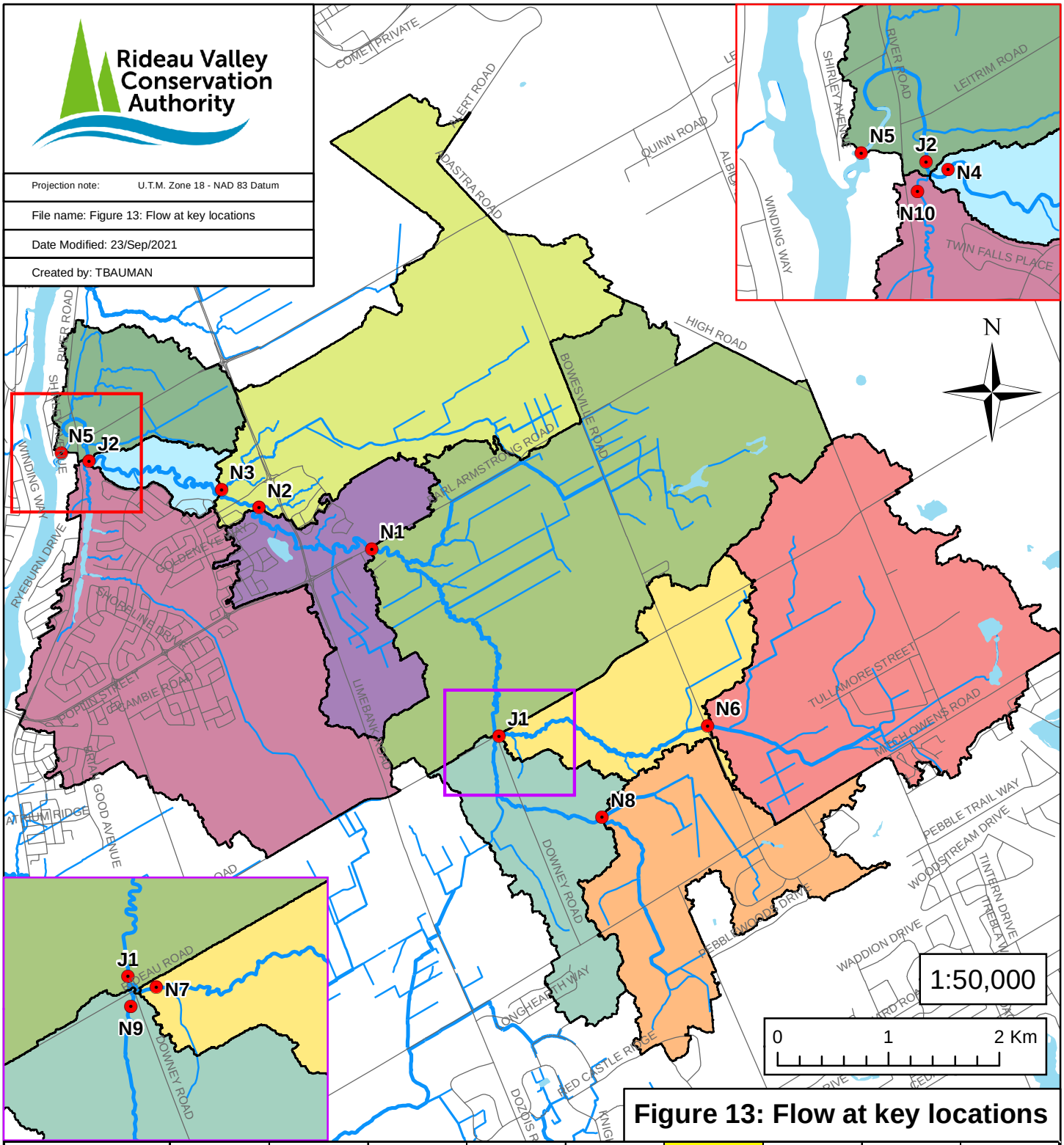


Figure 13: Flow at key locations

Return Period (year)	2	5	10	20	50	100	200	350	500
Nodes	Flow (cms)								
N1	6.31	13.73	19.24	25.56	34.41	41.05	47.44	53.07	57.06
N2	8.78	14.64	19.99	26.24	35.19	42.02	48.66	54.44	58.54
N3	19.54	31.60	40.33	50.47	64.63	76.61	88.80	99.68	107.03
N4	17.85	29.76	38.53	46.53	57.17	66.33	75.93	84.79	90.94
N5	34.95	57.45	74.03	90.52	113.07	132.08	151.39	169.01	181.60
N6	1.81	3.78	5.28	6.95	9.27	11.18	13.09	14.76	15.94
N7	2.16	4.67	6.62	8.79	11.79	13.99	16.26	18.28	19.70
N8	1.28	2.77	3.91	5.19	6.99	8.47	9.97	11.28	12.20
N9	1.90	4.01	5.63	7.41	9.80	11.72	13.65	15.31	16.53
N10	19.73	32.84	42.33	52.48	66.44	77.80	89.37	99.11	106.20
J1	3.92	8.37	11.83	15.84	21.26	25.33	29.40	32.93	35.46
J2	37.24	61.95	79.24	96.04	119.48	138.75	158.77	176.92	189.90

Figure 14a Estimated 1:100 year flows along Mosquito Creek

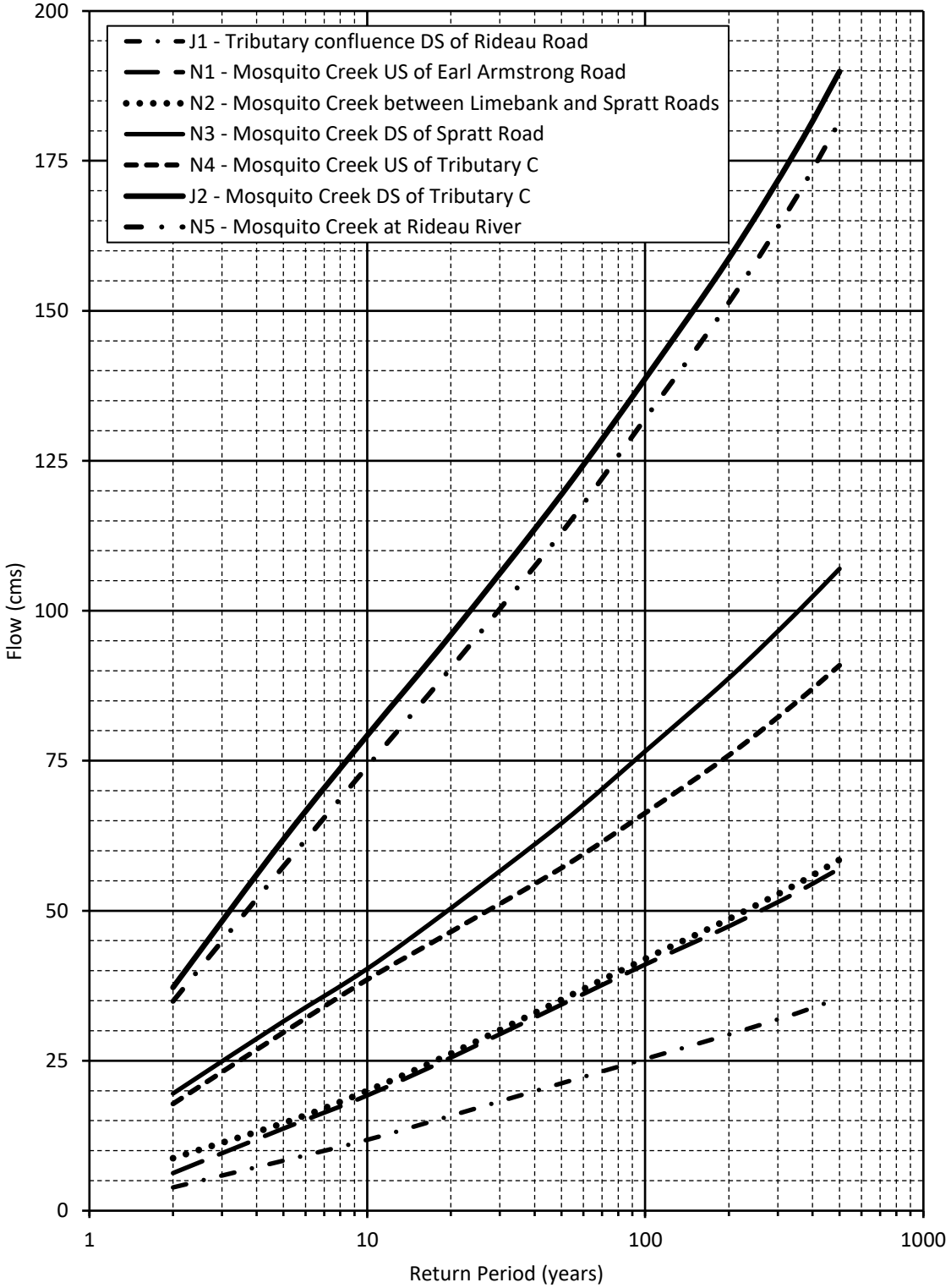


Figure 14b Estimated 1:100 year flows along Mosquito Creek Tributaries

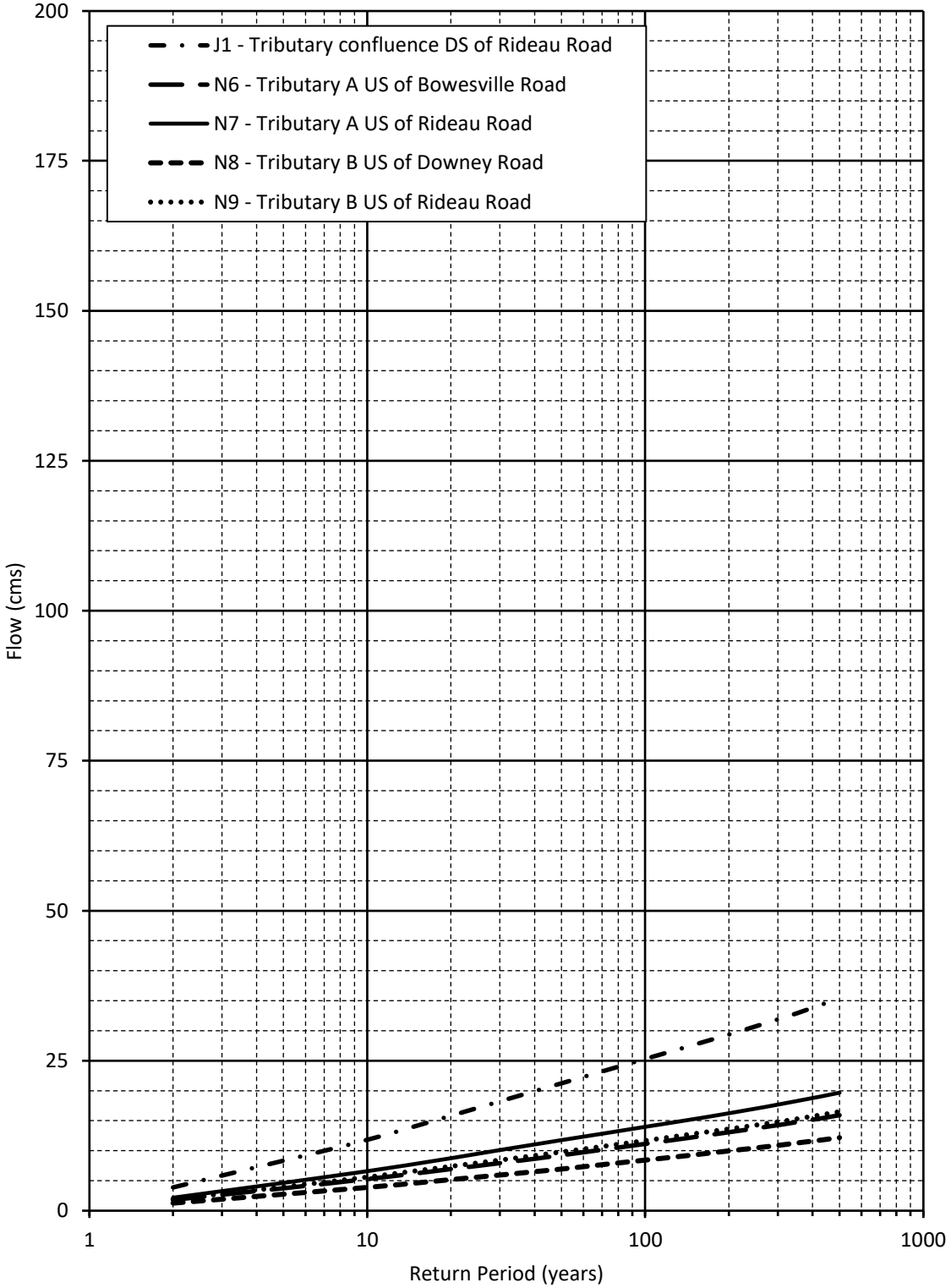


Figure 15 Comparison of estimated 1:100 year flows

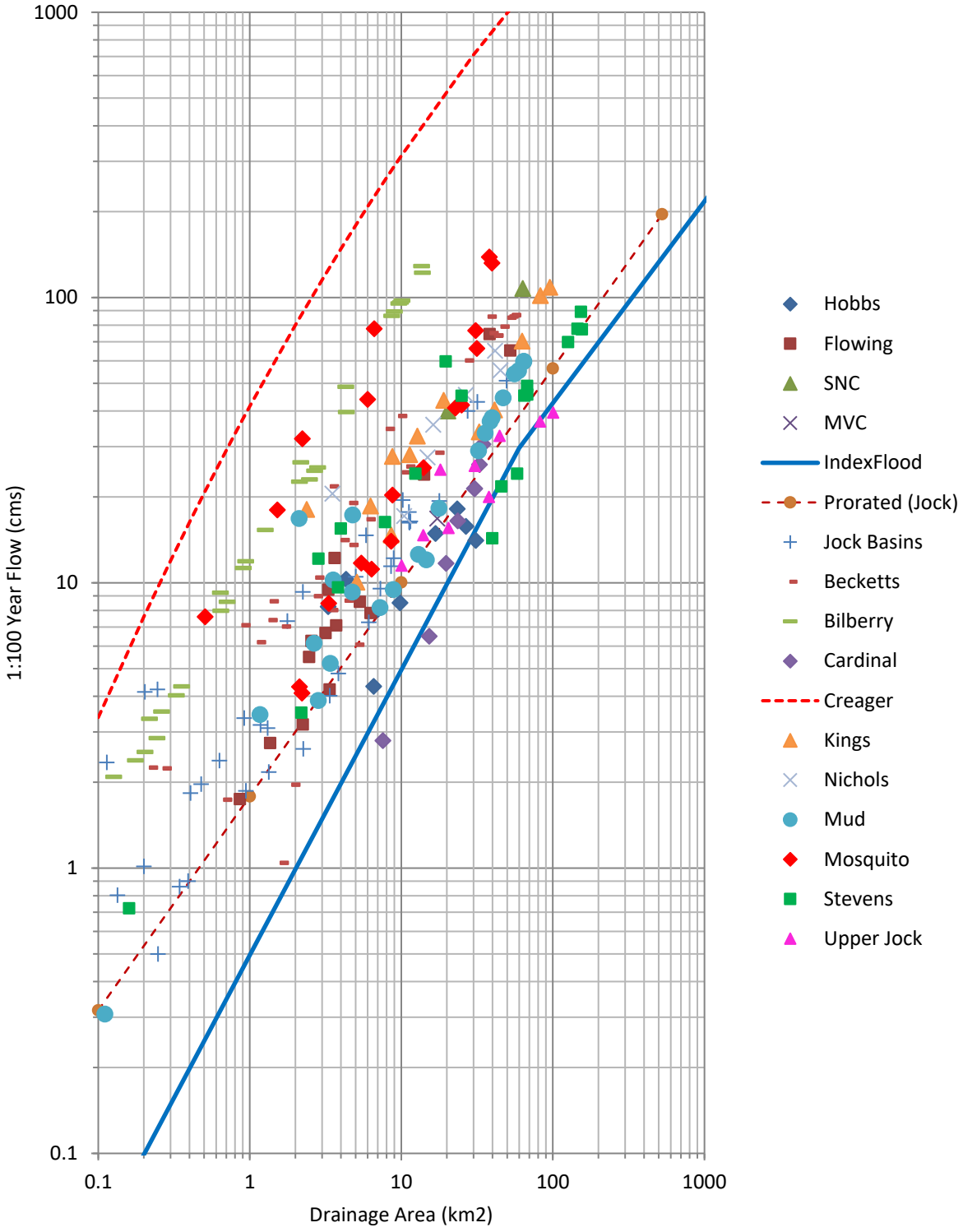
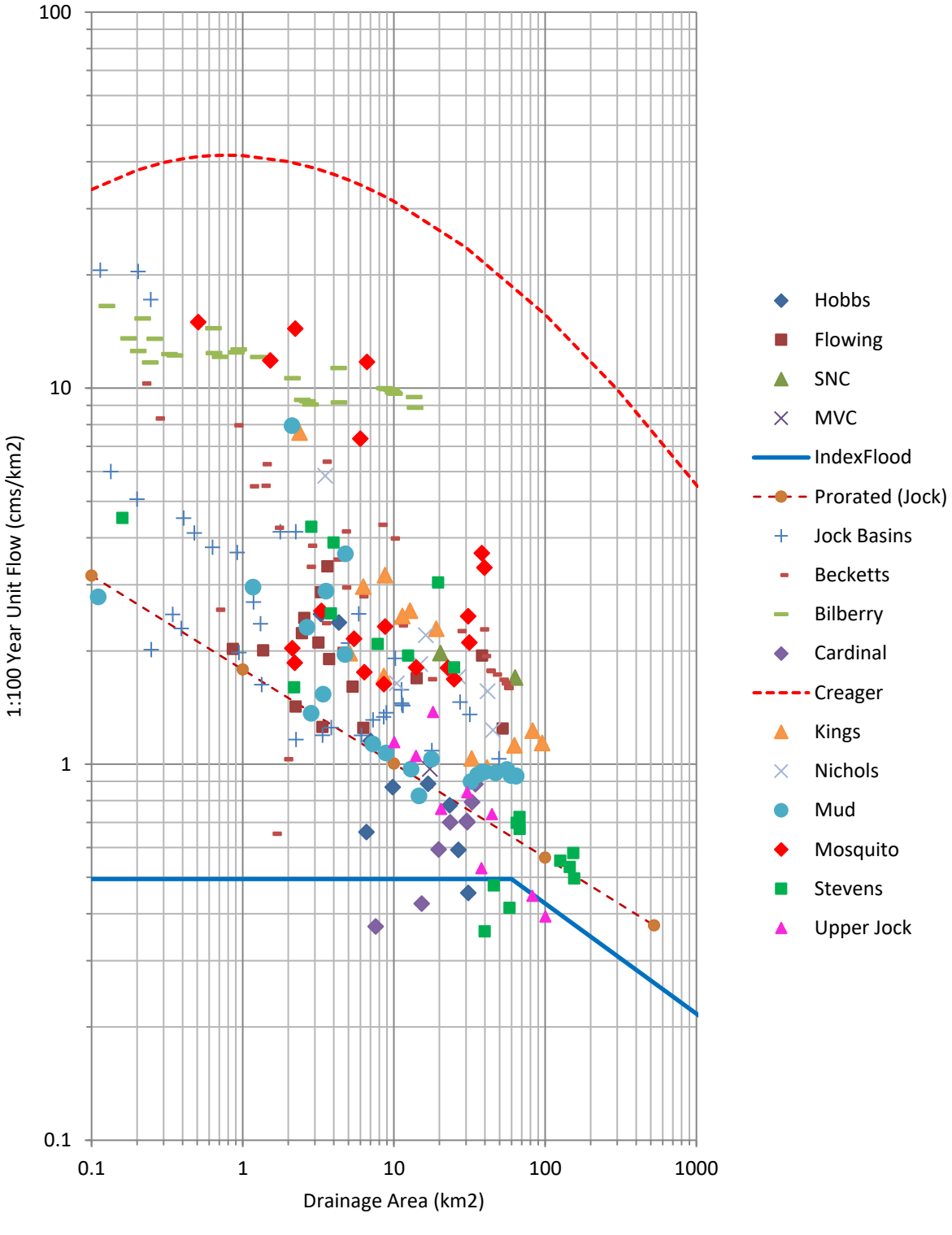


Figure 16 Comparison of 1:100 year flows per unit area



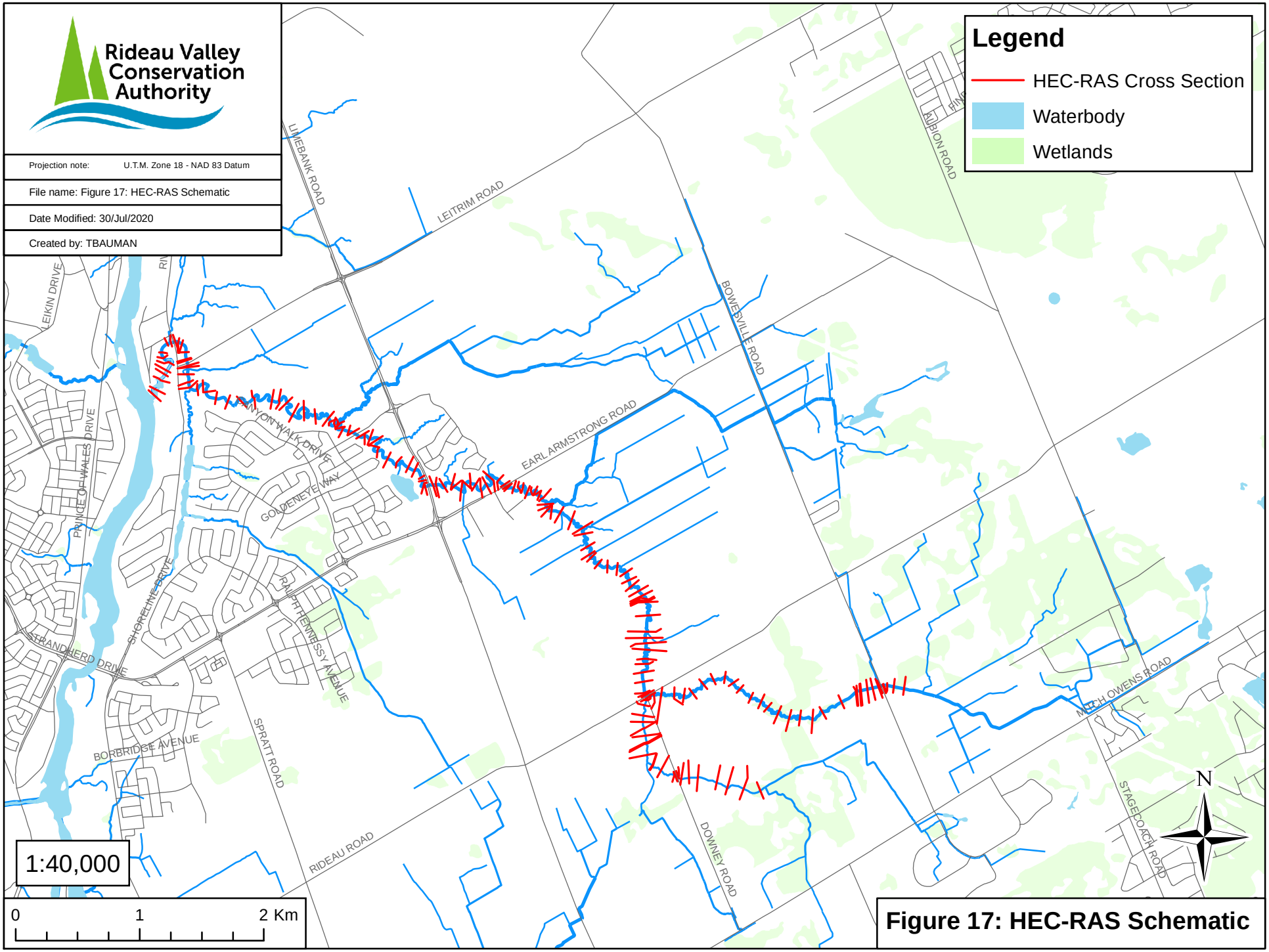

Rideau Valley Conservation Authority
Projection note: U.T.M. Zone 18 - NAD 83 Datum
File name: Figure 17: HEC-RAS Schematic
Date Modified: 30/Jul/2020
Created by: TBAUMAN
Legend
HEC-RAS Cross Section
Waterbody
Wetlands
LIMEBANK ROAD
LEITRIM ROAD
ALBION ROAD
BOWESVILLE ROAD
EARL ARMSTRONG ROAD
CANYON WALK DRIVE
GOLDENETE WAY
LEIKIN DRIVE
PRINCE OF WALES DRIVE
SHORELINE DRIVE
STRANDHERD DRIVE
RALPH TENNESSY AVENUE
BORBRIDGE AVENUE
SPRATT ROAD
RIDEAU ROAD
DOWNEY ROAD
NORTH OWENS ROAD
STAGECOACH ROAD
N
1:40,000
0
1
2 Km
Figure 17: HEC-RAS Schematic

Figure 18a Sensitivity analysis of the computed water level (Mosquito Creek)

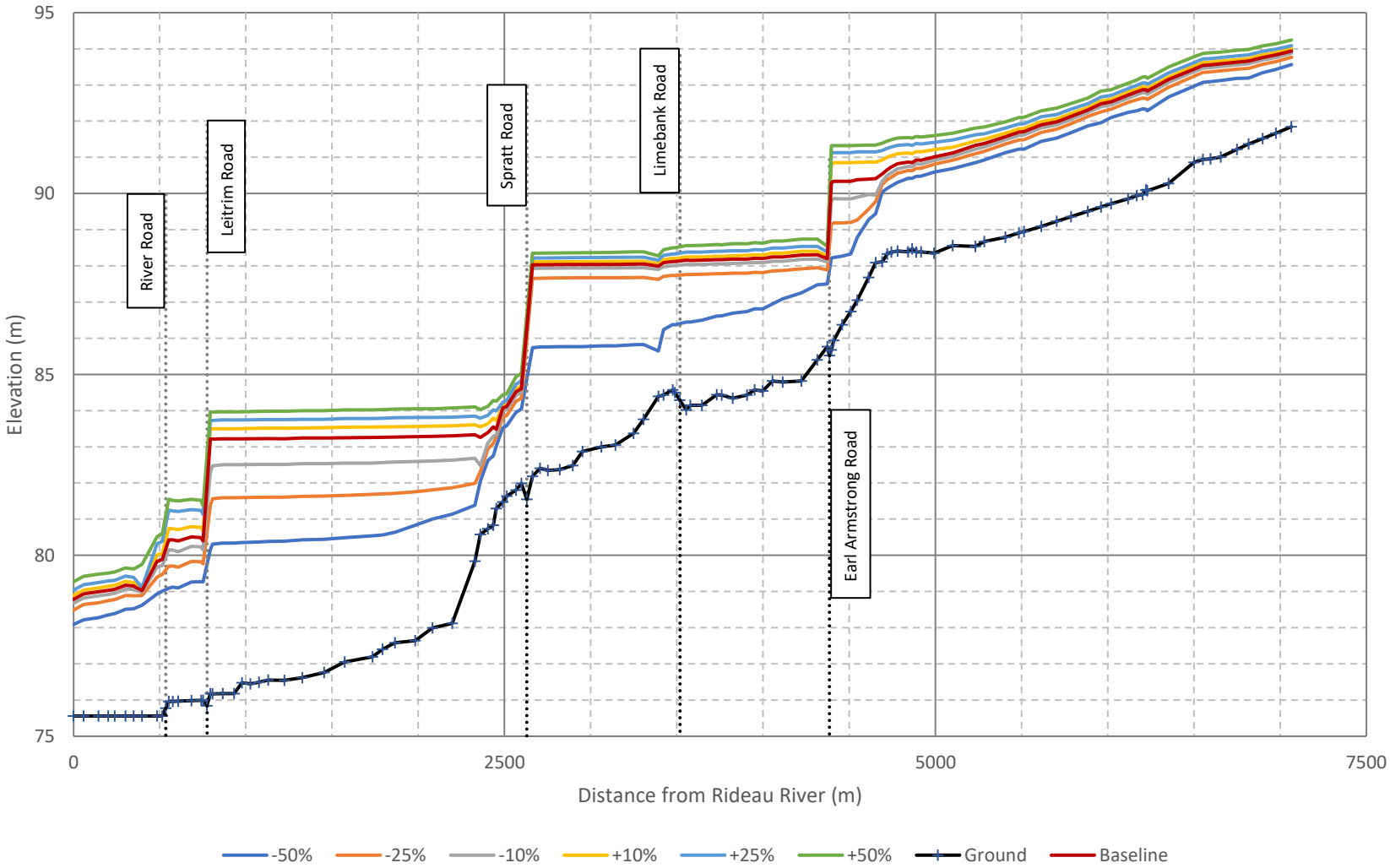


Figure 18b Sensitivity analysis of the computed water level (Tributary A)

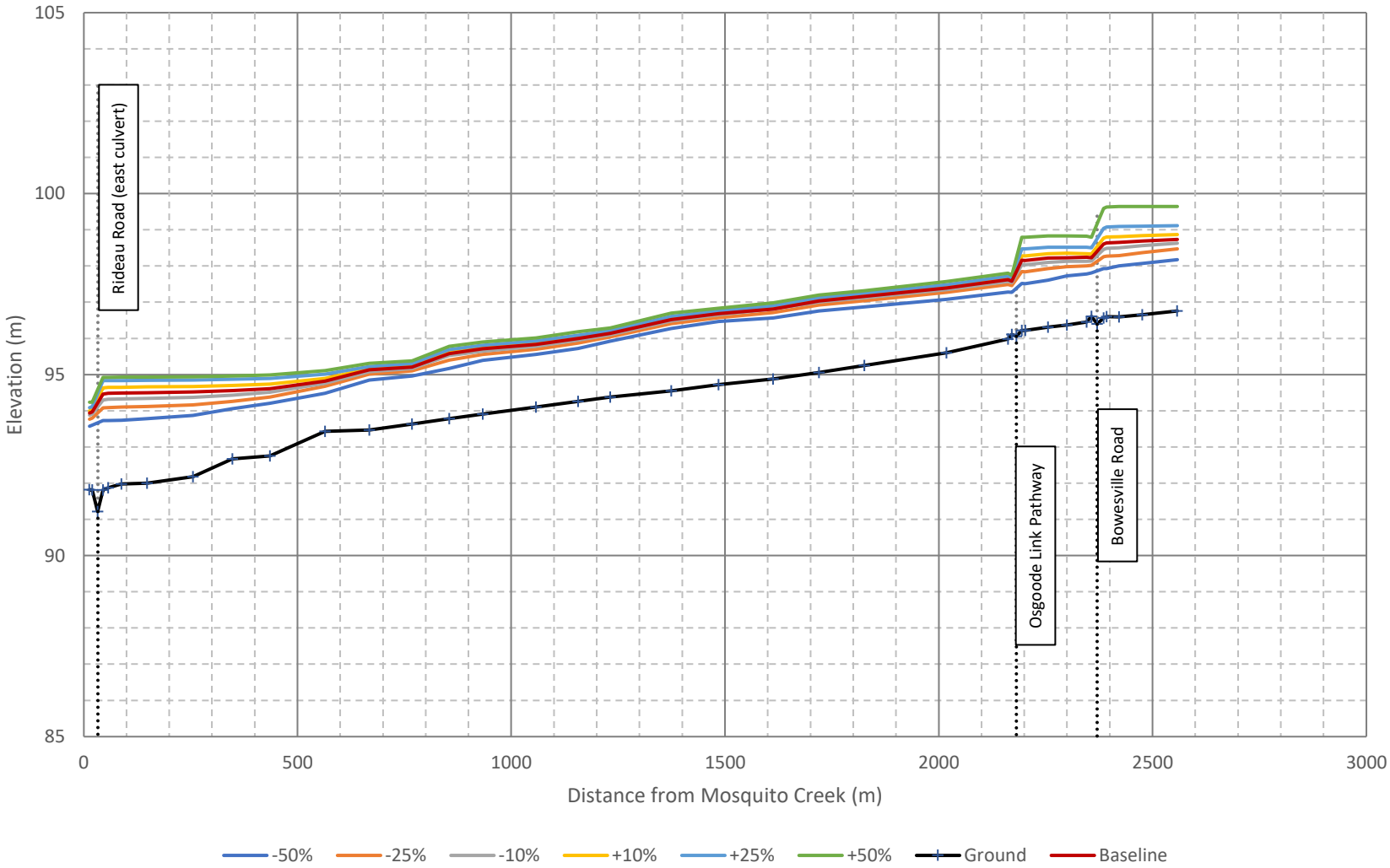


Figure 18c Sensitivity analysis of the computed water level (Tributary B)

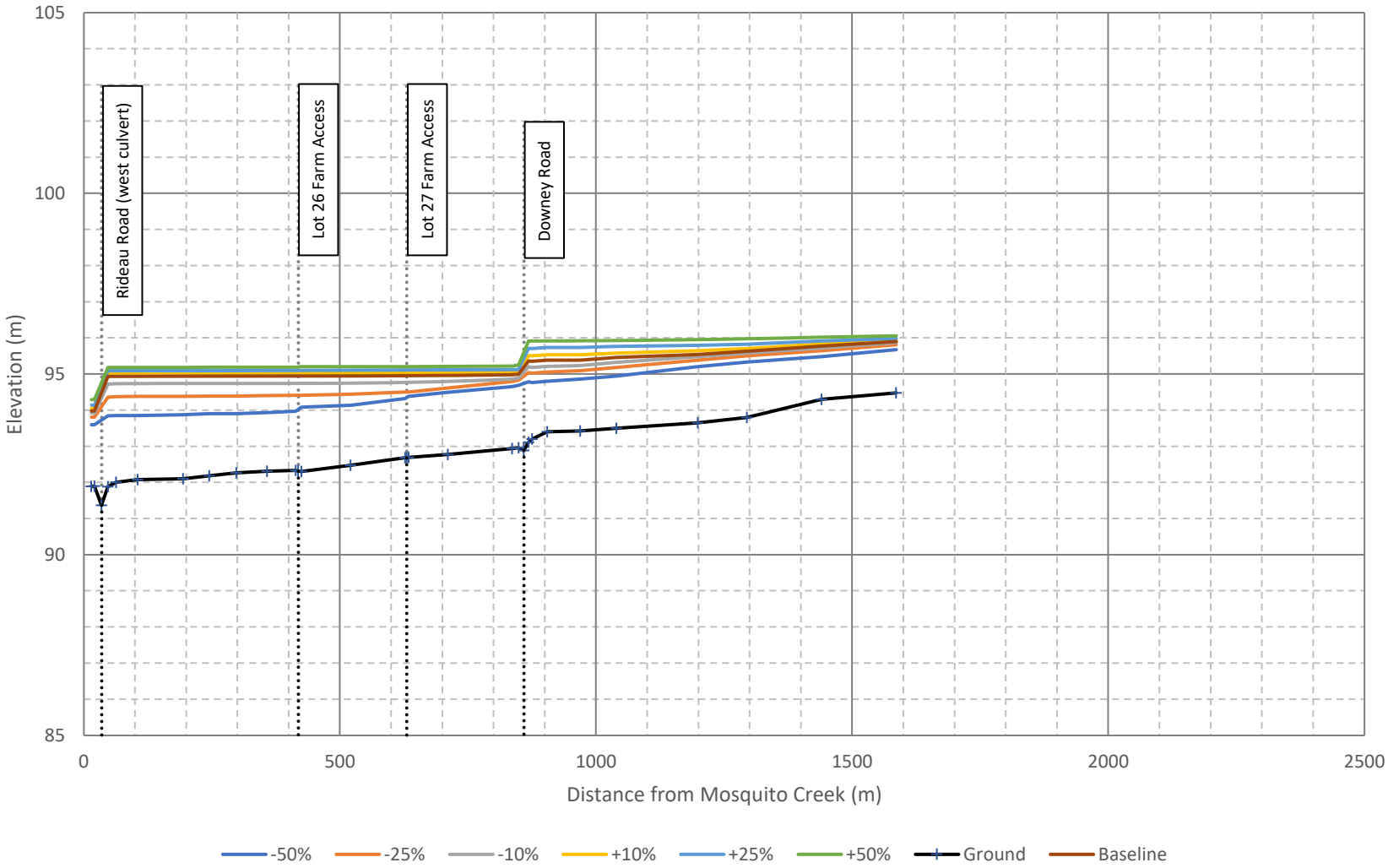


Figure 19a Sensitivity analysis of water level (Mosquito Creek)

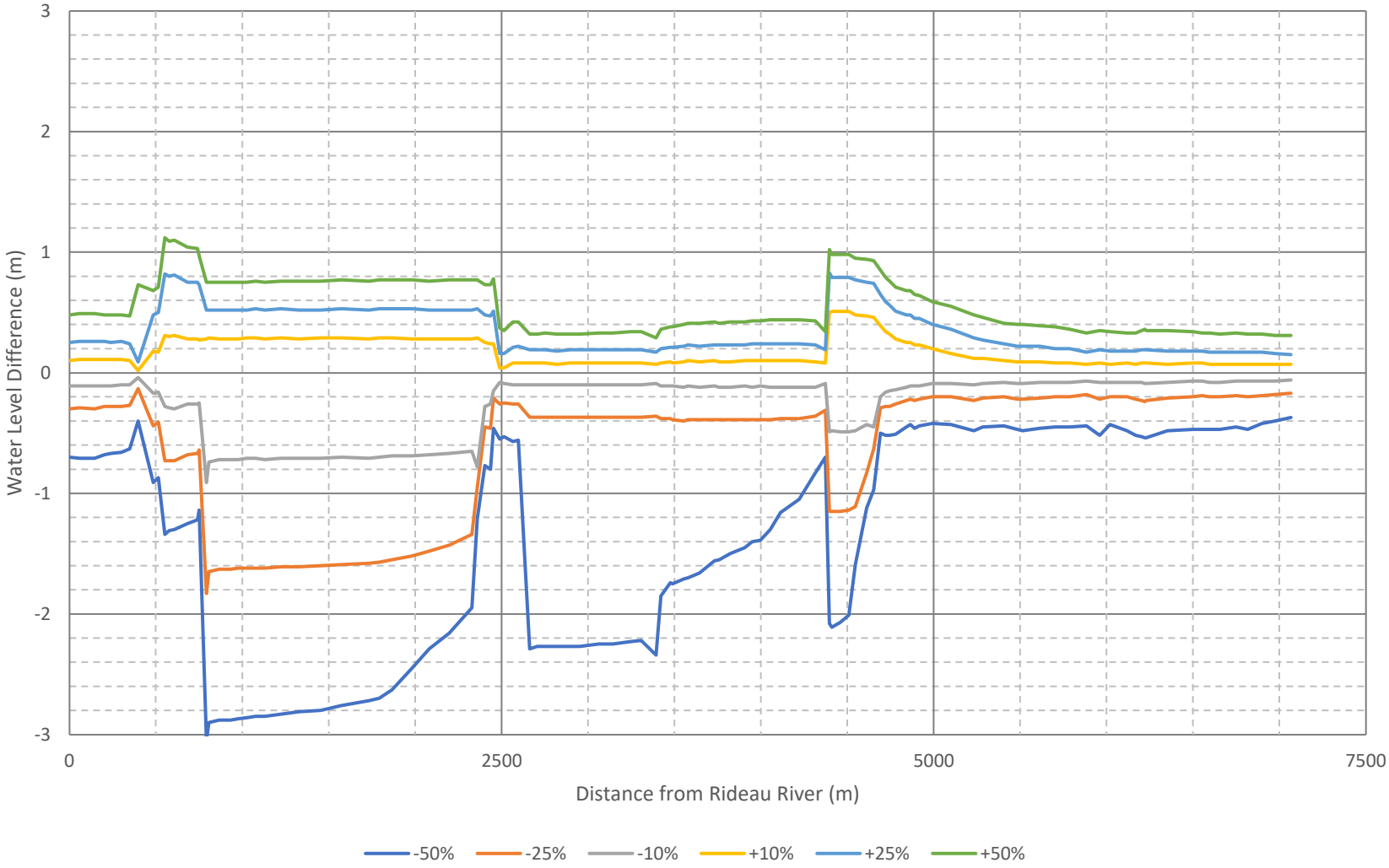


Figure 19b Sensitivity analysis of water level (Tributary A)

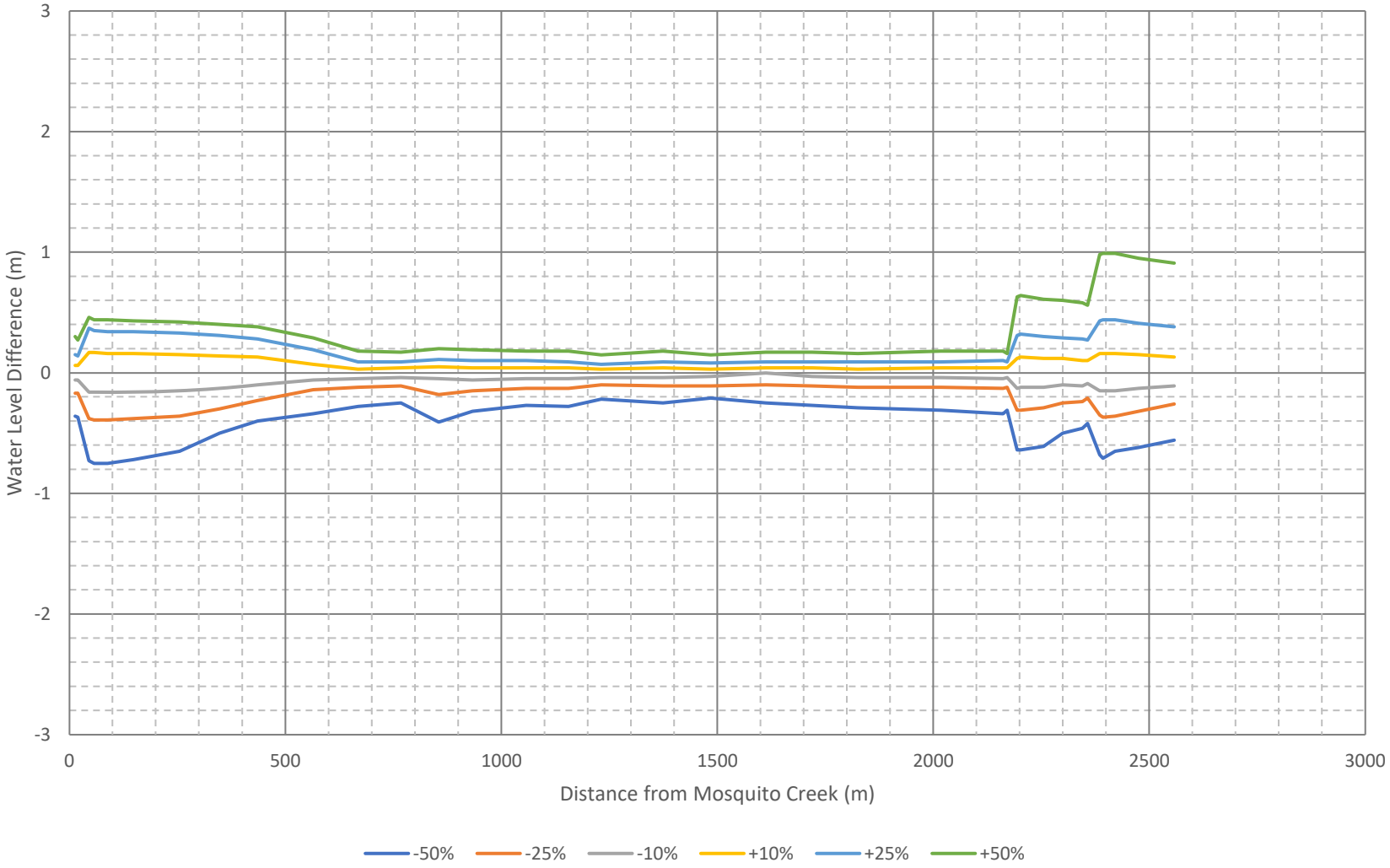
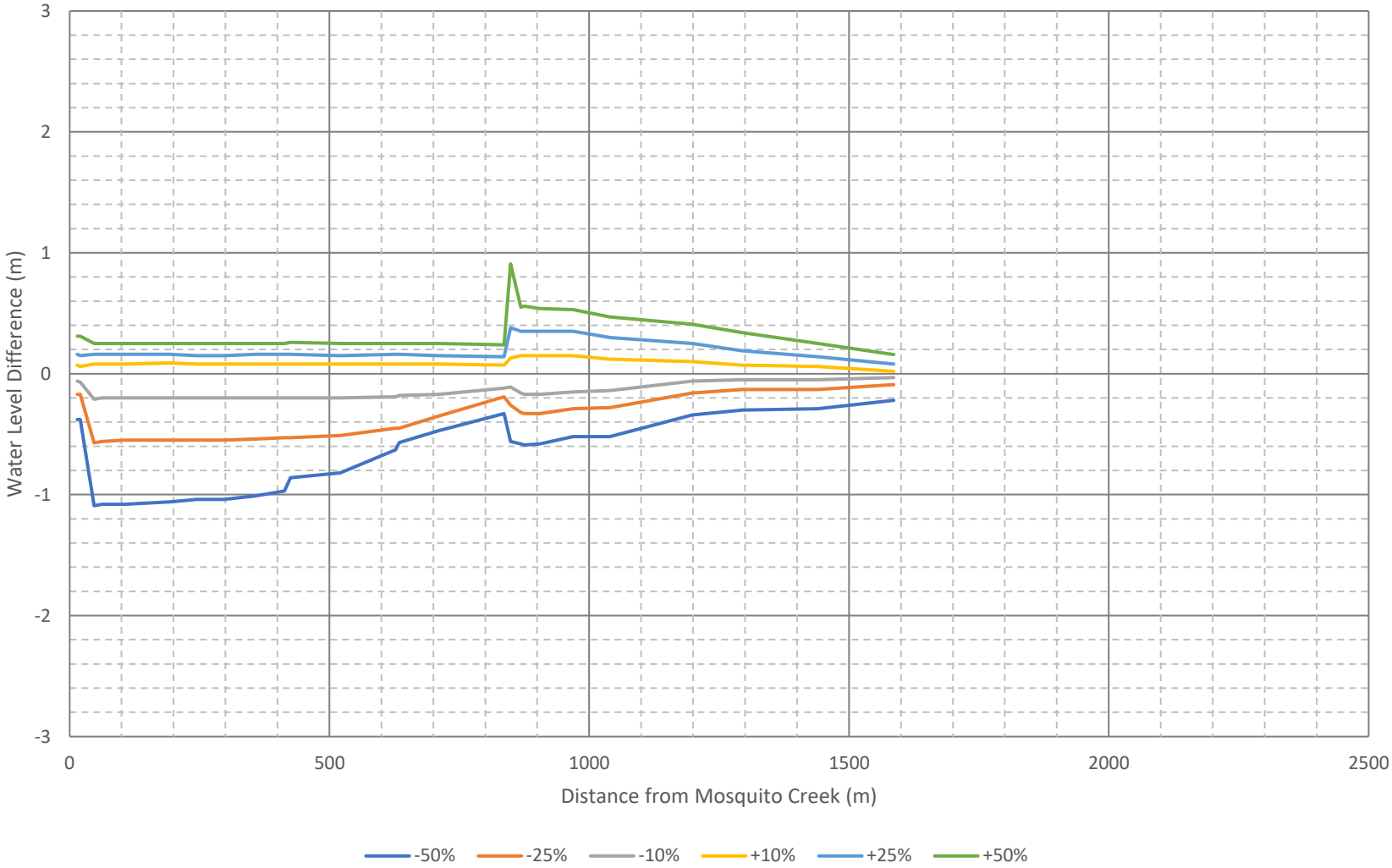


Figure 19c Sensitivity analysis of water level (Tributary B)



Appendix A

Buildings and Islands in Floodplain – RVCA Policy

Ferdous Ahmed

From: Ewan Hardie
Sent: Wednesday, June 29, 2016 10:35 AM
To: Ferdous Ahmed
Subject: Buildings in the Floodplain Guidelines

Hi Ferdous,
As discussed at recent meetings please consider the following guidelines when undertaking floodplain mapping projects

Effective June 13th 2016, when plotting floodlines RVCA staff will use the following guidelines in order to apply a conservative approach to the delineation of the regulatory floodplain, specifically in areas that have buildings that are in the floodplain or affected by the floodplain:

1. Include any buildings in the floodplain that have any part of the footprint touching the floodplain. This is done to be conservative based on the lack of knowledge on the conditions around the buildings: soil conditions, window wells, walk out doors, building egress are all not known at the time of a floodplain mapping study so it is wise to adopt a conservative approach and include building footprints in the floodplain.
2. With regards to dry islands in and around buildings, islands will be removed if they did not meet the minimum mapping unit acceptable for the data. An envelope of 2 metres around building footprints is to be considered. If the floodplain comes close to or is in this 2m building envelope the entire envelope should be included in the floodplain. This approach is also consistent with the above approach (building footprints) in that the lack of knowledge of the conditions around the building forces the uses of a conservative approach, which is to remove the islands
3. In cases where a building has been included in the floodplain (because of the above criteria), the adjacent building will need to be included in the floodplain as well because of a lack of data in between the buildings and/or the 2m building envelope rule.
4. In the case of townhome or connected type buildings and the floodplain touching the foundations, the building footprint should be included up to the next visible unit partition where the elevation changes

Thanks

Ewan Hardie

Director
Watershed Science and Engineering Services
Rideau Valley Conservation Authority
ewan.hardie@rvca.ca
Tel: 613 692-3571 ext 1130
Fax: 613 692-0334

Rideau Valley Conservation Authority
3889 Rideau Valley Drive, Manotick, ON
K4M 1A5
www.rvca.ca

Ferdous Ahmed

From: Ewan Hardie
Sent: Thursday, July 6, 2017 5:12 PM
To: Ferdous Ahmed
Cc: Brian Stratton
Subject: Floodplain delineation guidance

Good Afternoon Ferdous,

As discussed here is the documentation of the guidance that was given to RVCA staff when it comes to plotting floodlines using LiDAR data for this most recent project.

Guidance:

When delineating the regulatory flood water levels, RVCA staff will follow a precautionary principle to include island areas in the floodplain that are up to 1000 square metres.

Ewan Hardie

Director
Watershed Science and Engineering Services
Rideau Valley Conservation Authority
ewan.hardie@rvca.ca
Tel: 613 692-3571 ext 1130
Fax: 613 692-0334

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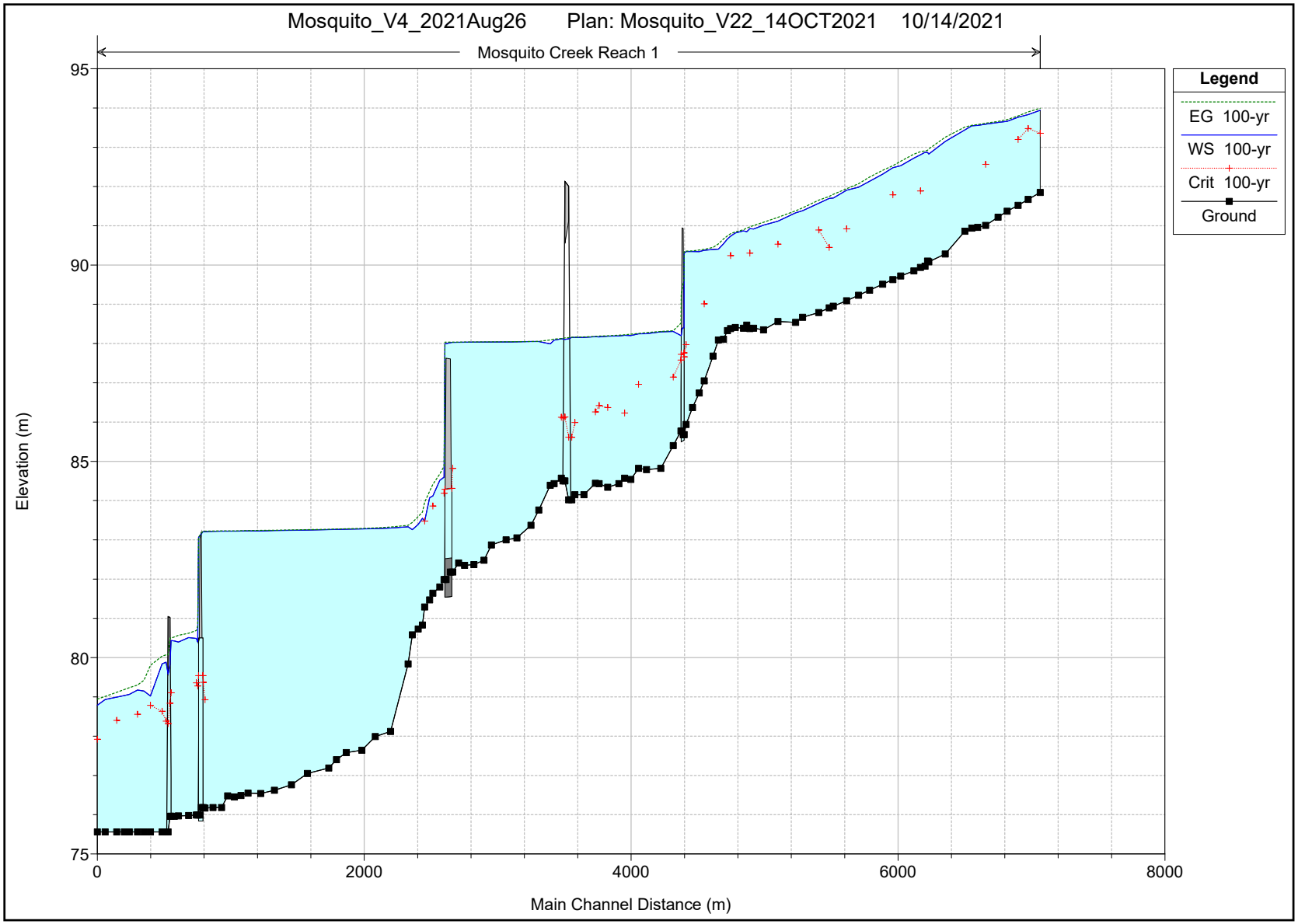
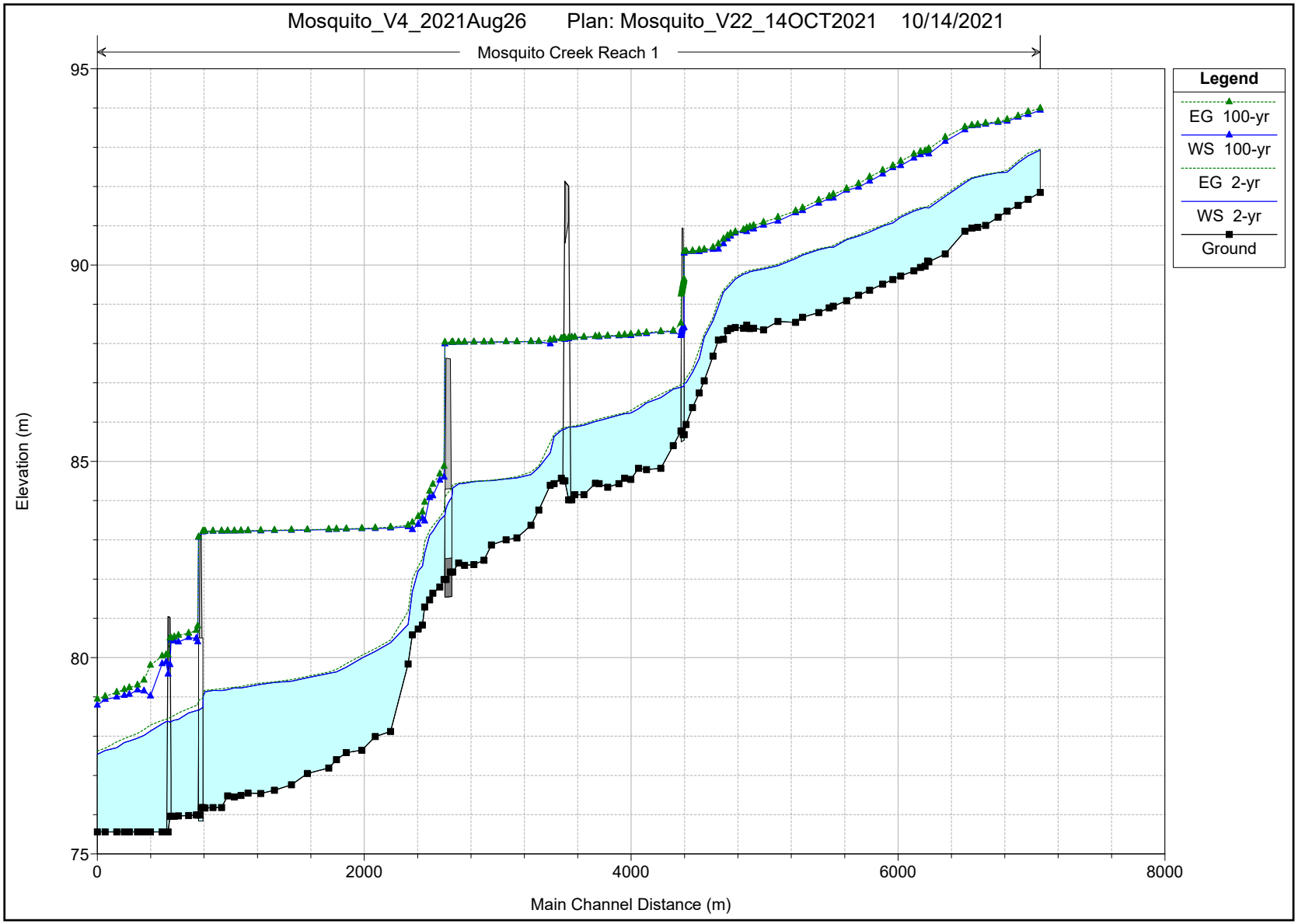
3889 Rideau Valley Drive, Manotick, ON
K4M 1A5
www.rvca.ca

Appendix B

HEC-RAS Profiles and Cross-Sections


Mosquito_V4_2021Aug26 Plan: Mosquito_V22_14OCT2021 10/14/2021
Mosquito Creek Reach 1
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Elevation (m)
95
90
85
80
75
0
2000
4000
6000
8000
Main Channel Distance (m)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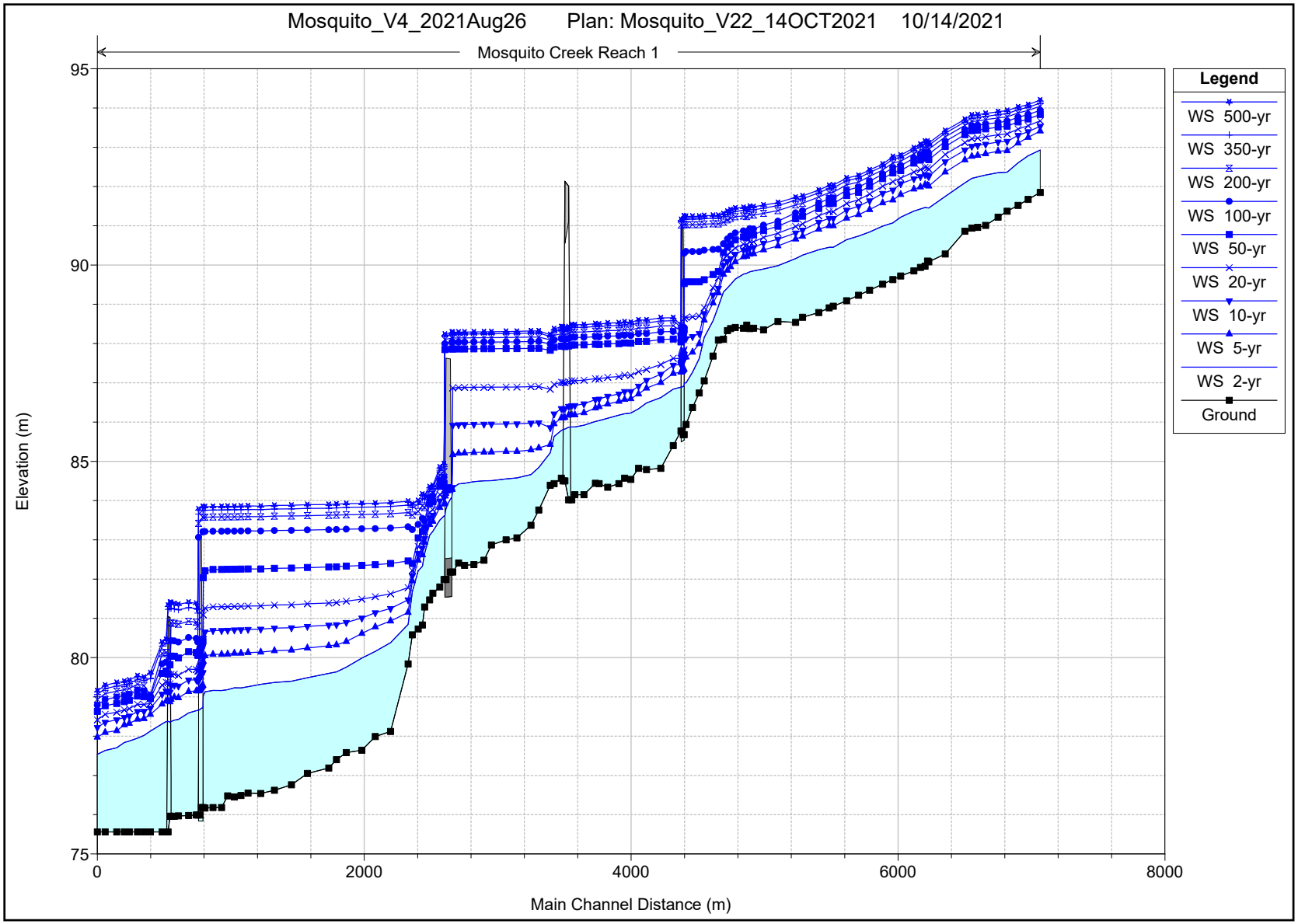
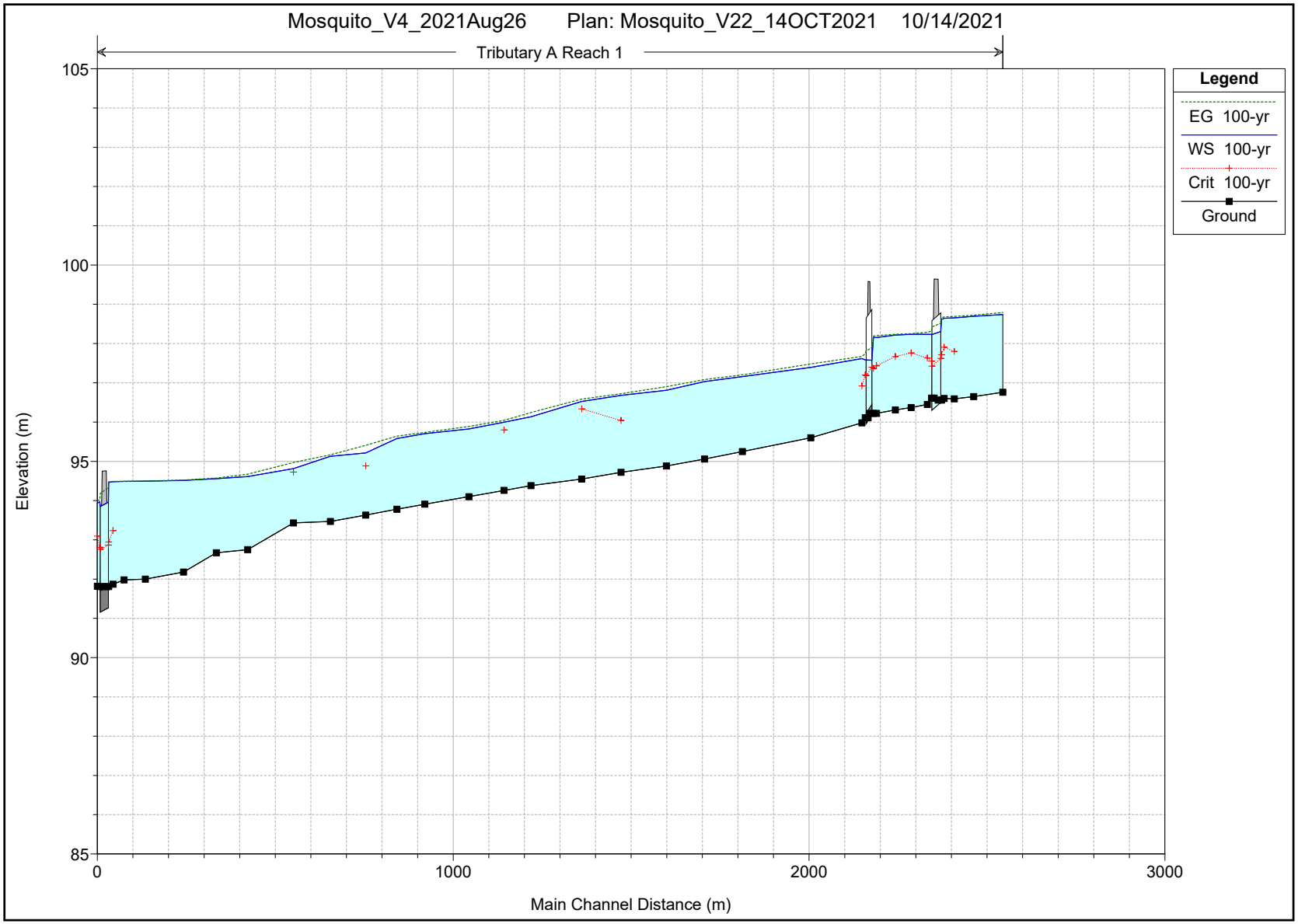
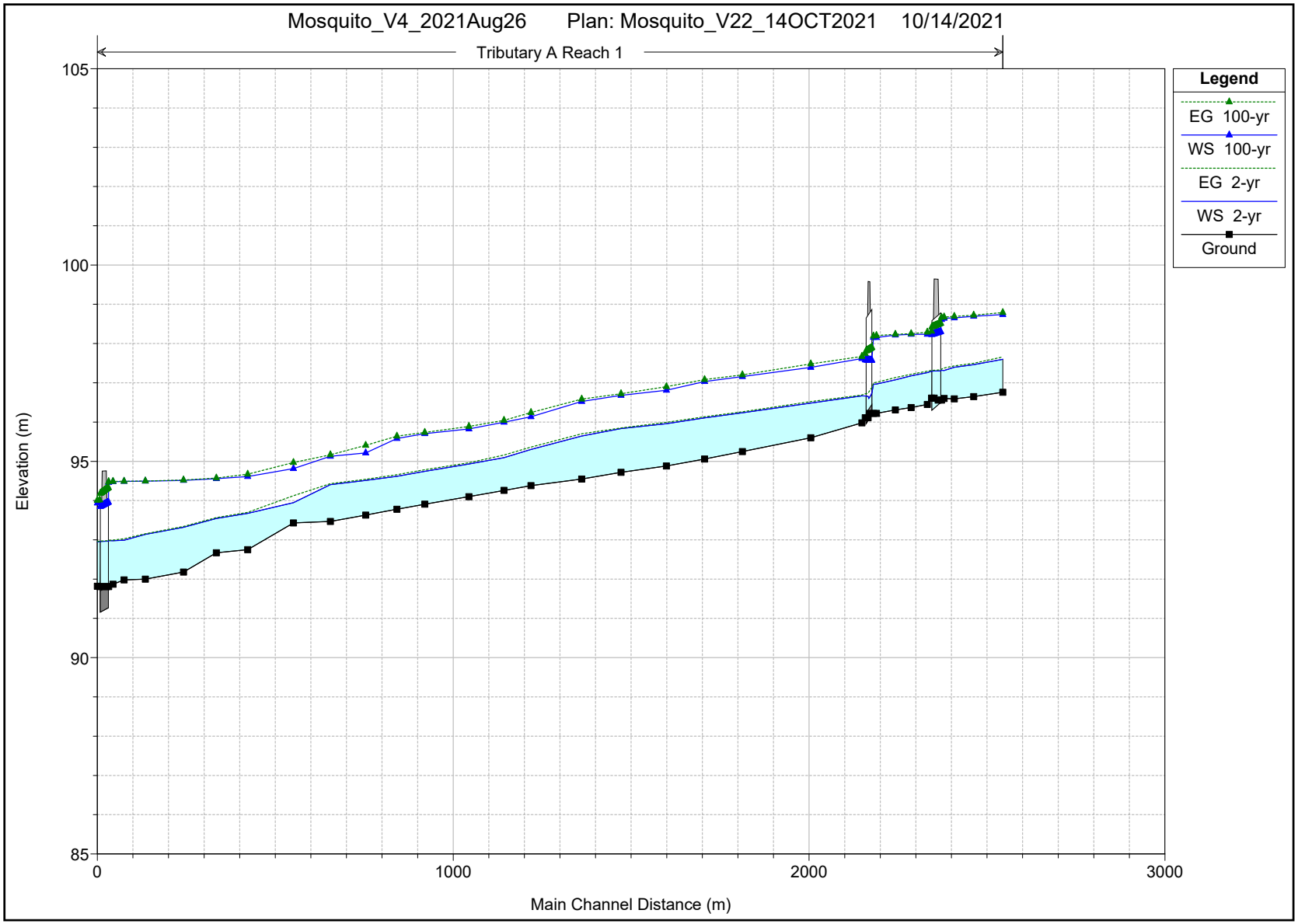
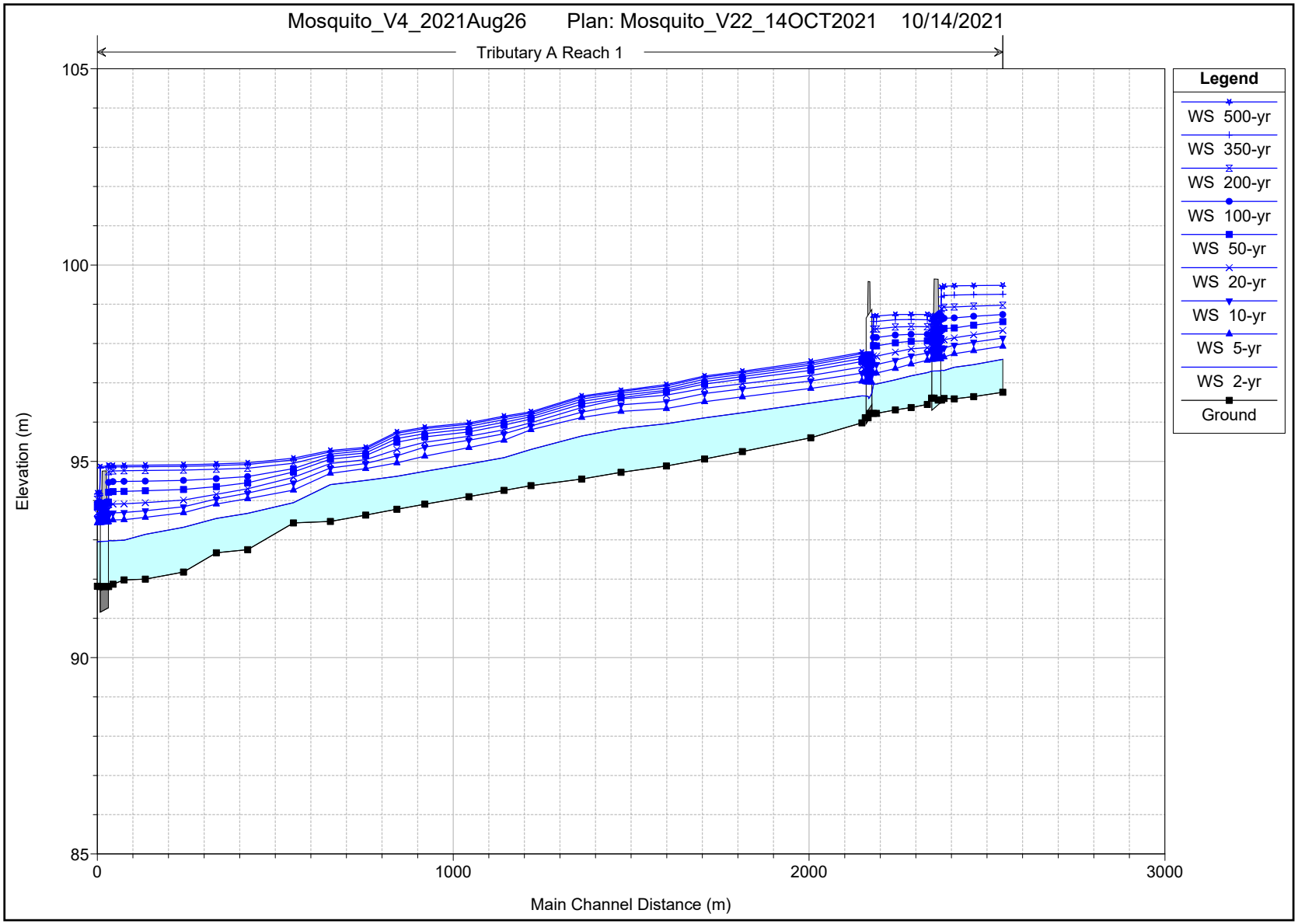
Mosquito Creek Reach 1
Legend
EG 100-yr
WS 100-yr
EG 2-yr
WS 2-yr
Ground
Elevation (m)
95
90
85
80
75
0
2000
4000
6000
8000
Main Channel Distance (m)


Mosquito_V4_2021Aug26 Plan: Mosquito_V22_14OCT2021 10/14/2021
Mosquito Creek Reach 1
Elevation (m)
95
90
85
80
75
0
2000
4000
6000
8000
Main Channel Distance (m)
Legend
WS 500-yr
WS 350-yr
WS 200-yr
WS 100-yr
WS 50-yr
WS 20-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground


Mosquito_V4_2021Aug26 Plan: Mosquito_V22_14OCT2021 10/14/2021
Tributary A Reach 1
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Elevation (m)
105
100
95
90
85
0
1000
2000
3000
Main Channel Distance (m)


Mosquito_V4_2021Aug26 Plan: Mosquito_V22_14OCT2021 10/14/2021
Tributary A Reach 1
Legend
EG 100-yr
WS 100-yr
EG 2-yr
WS 2-yr
Ground
Elevation (m)
105
100
95
90
85
0
1000
2000
3000
Main Channel Distance (m)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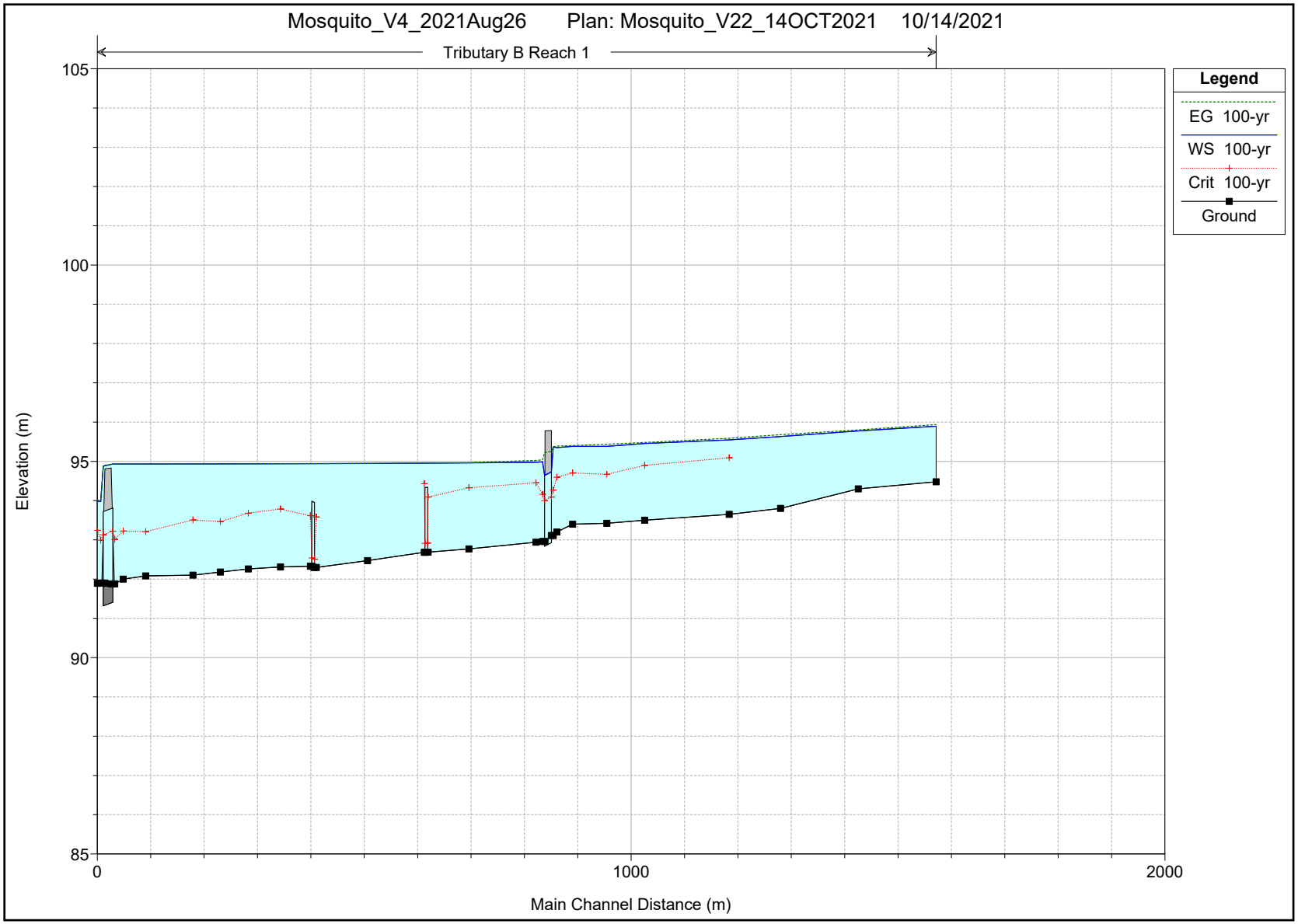
Tributary A Reach 1
105
100
95
90
85
Elevation (m)
0
1000
2000
3000
Main Channel Distance (m)
Legend
WS 500-yr
WS 350-yr
WS 200-yr
WS 100-yr
WS 50-yr
WS 20-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground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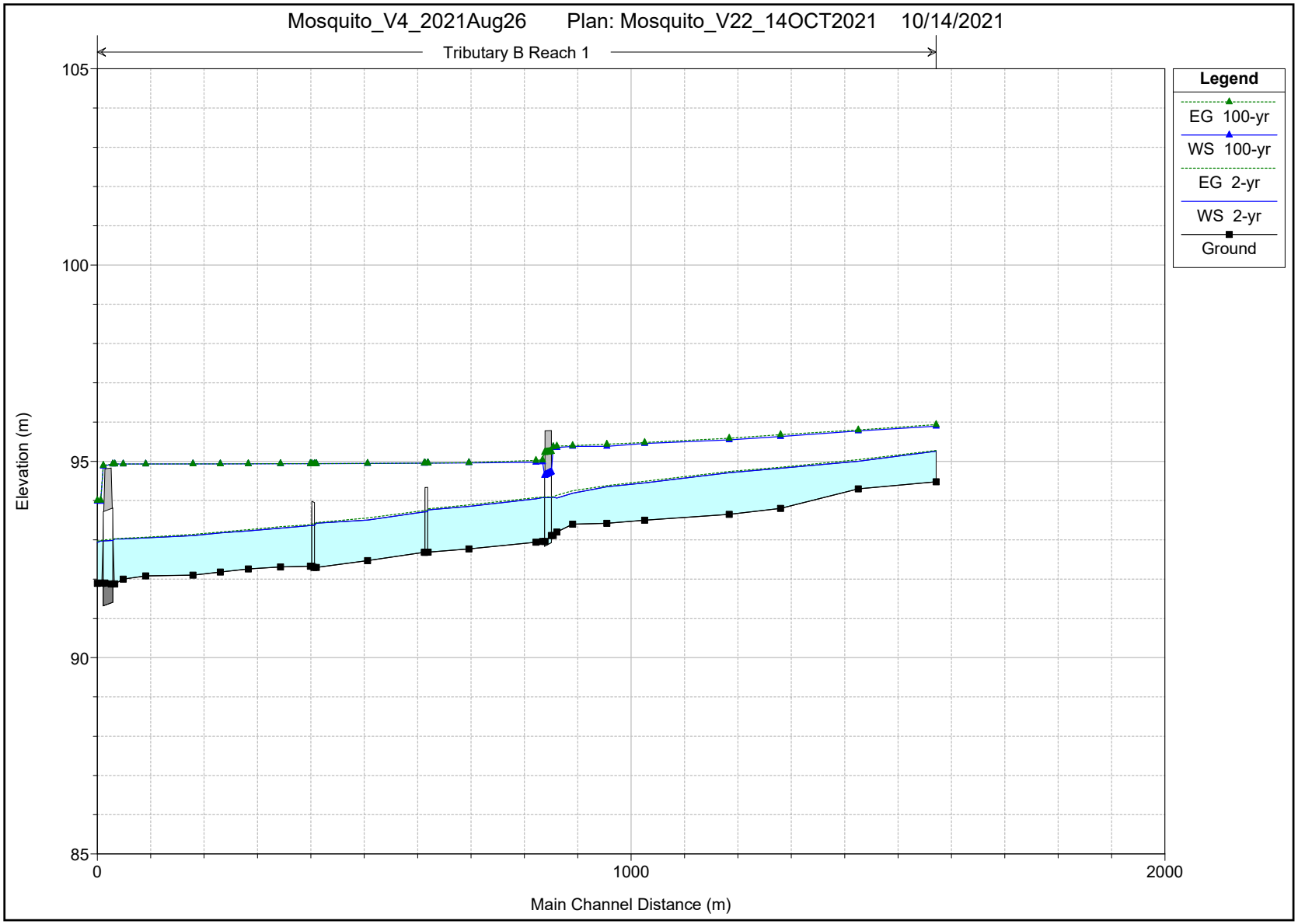
100
95
90
85
Elevation (m)
0
1000
2000
Main Channel Distance (m)
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground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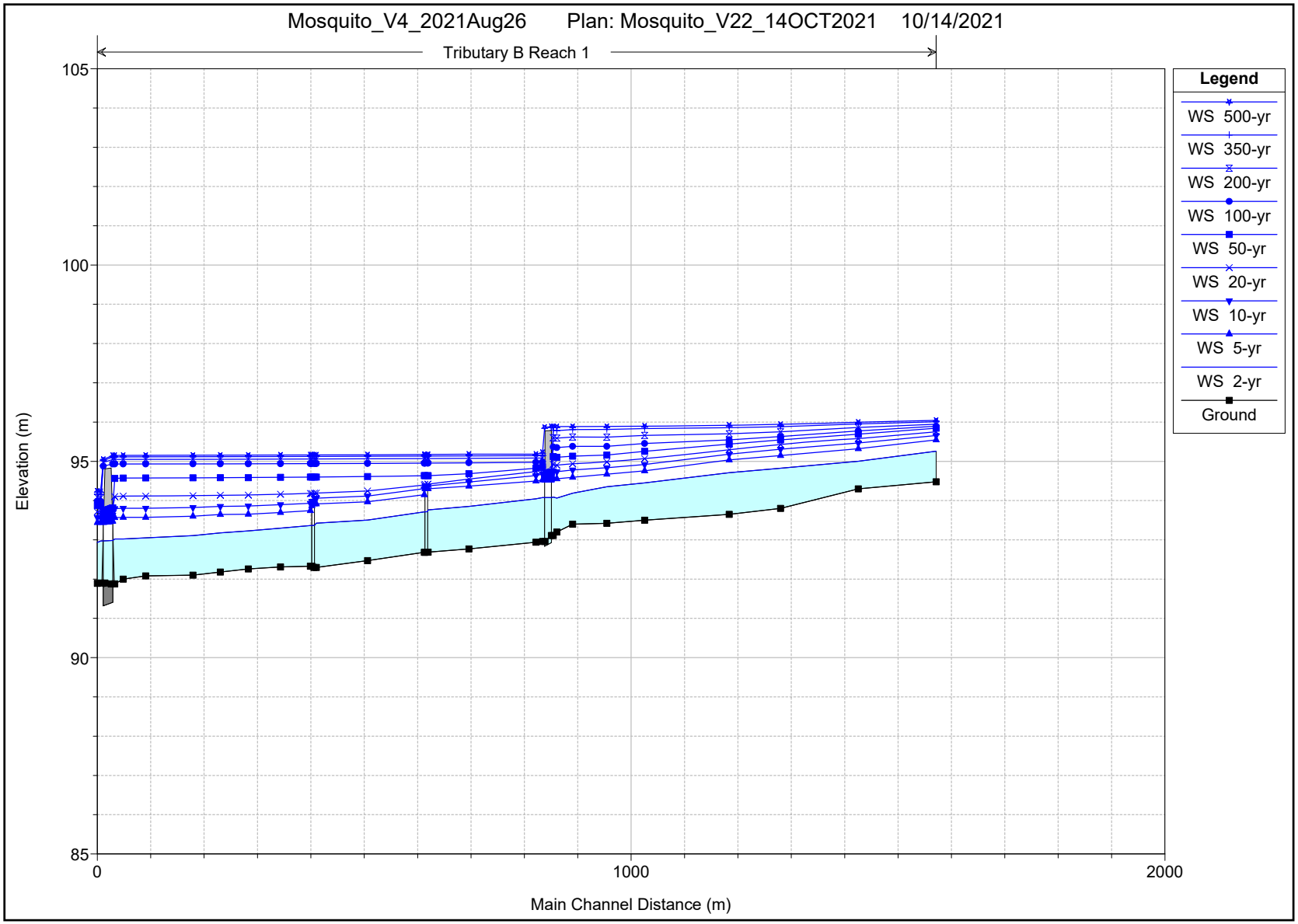
Tributary B Reach 1
105
100
95
90
85
Elevation (m)
0
1000
2000
Main Channel Distance (m)
Legend
EG 100-yr
WS 100-yr
EG 2-yr
WS 2-yr
Ground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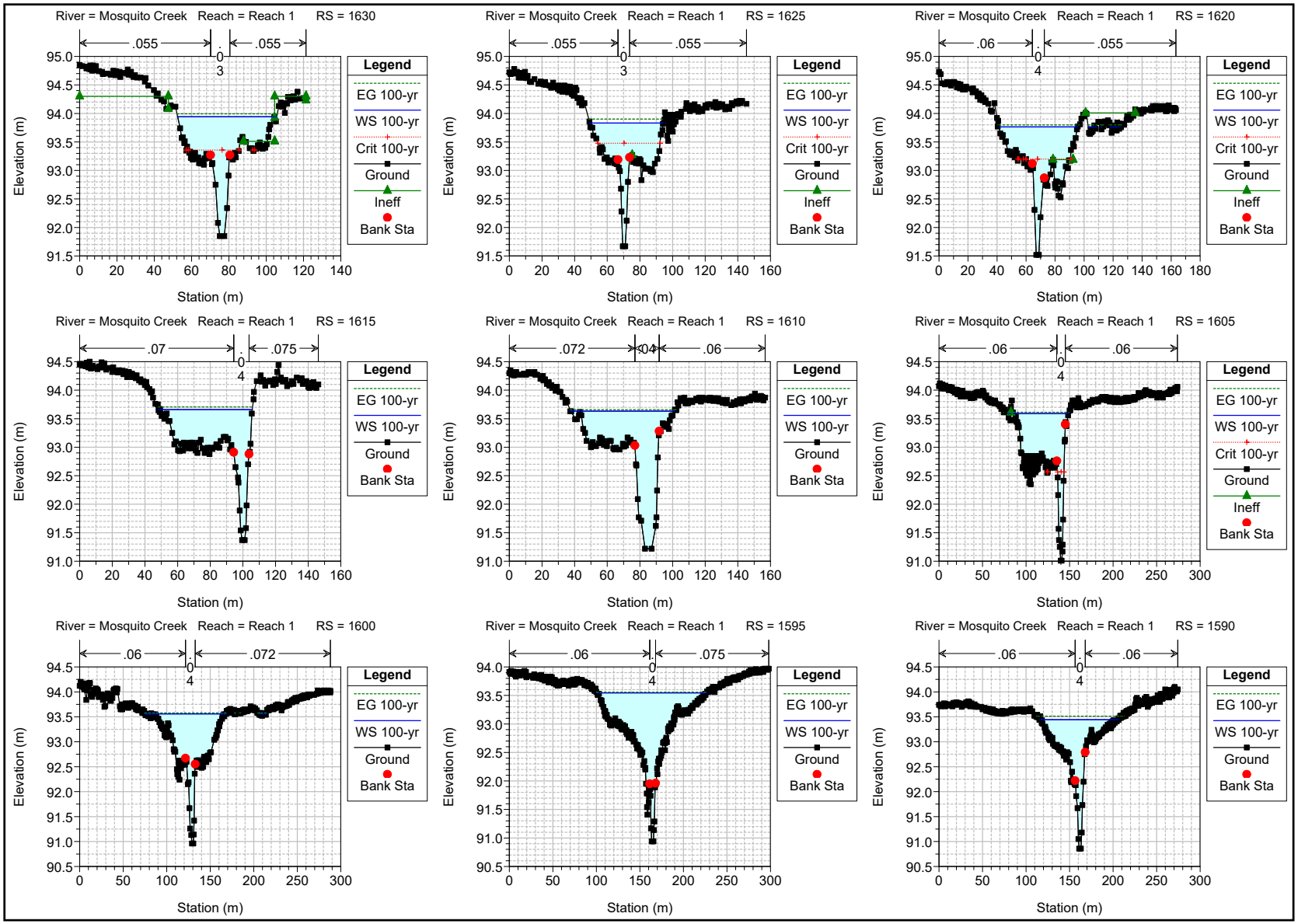
Tributary B Reach 1
105
100
95
90
85
Elevation (m)
0
1000
2000
Main Channel Distance (m)
Legend
WS 500-yr
WS 350-yr
WS 200-yr
WS 100-yr
WS 50-yr
WS 20-yr
WS 10-yr
WS 5-yr
WS 2-yr
Ground


River = Mosquito Creek Reach = Reach 1 RS = 1630
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.055
0.3
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1625
.055
.055
0.3
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
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.06
.055
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Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1615
.07
.075
0.4
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1610
.072
.04
.06
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1605
.06
.06
0.4
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
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0.4
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
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.075
0.4
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1590
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.06
0.4
Legend
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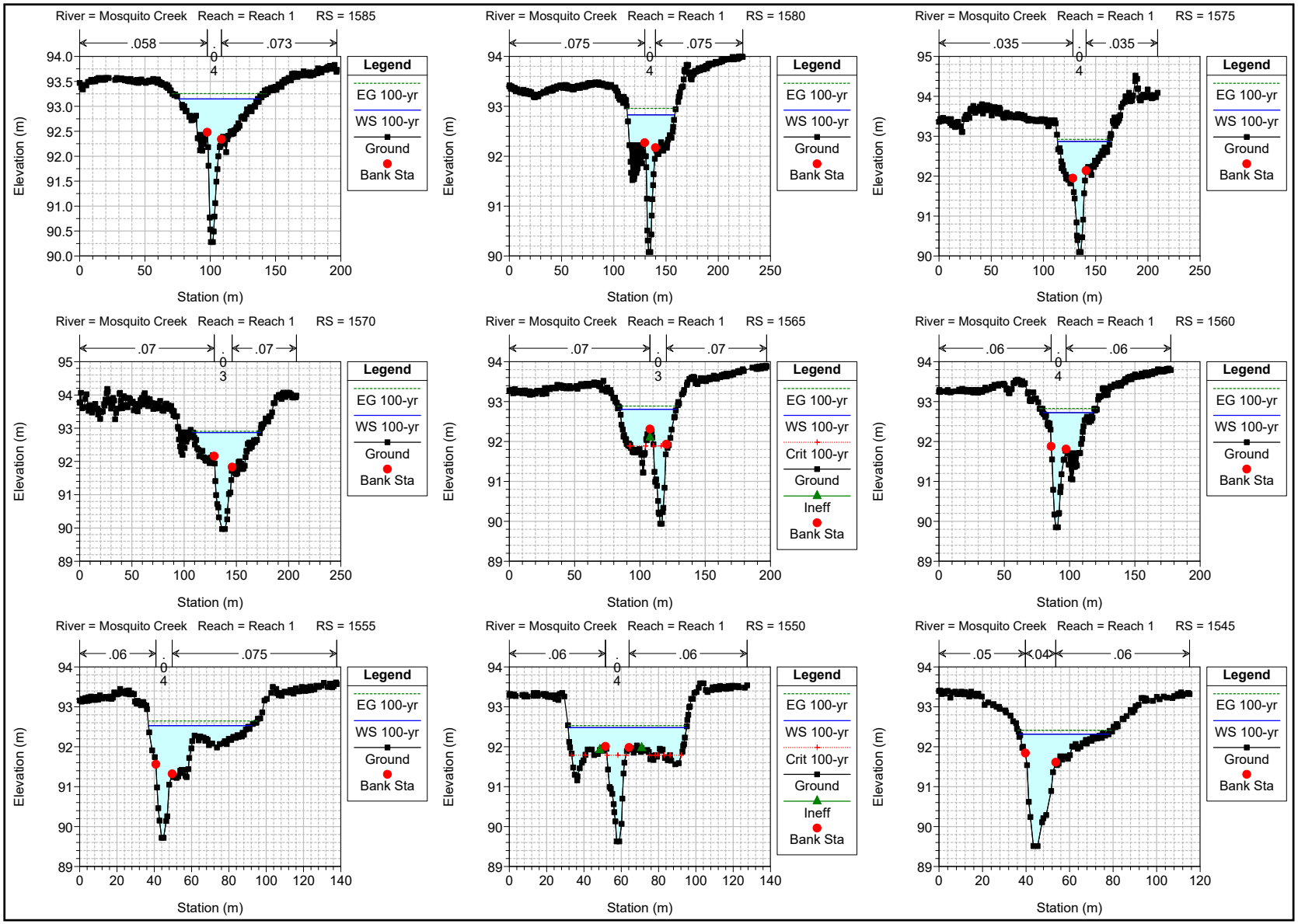
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)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0.4
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Station (m)
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WS 100-yr
Ground
Bank Sta
River = Mosquito Creek Reach = Reach 1 RS = 1580
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.075
0.4
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
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.035
.035
0.4
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
River = Mosquito Creek Reach = Reach 1 RS = 1570
.07
.07
0.3
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
River = Mosquito Creek Reach = Reach 1 RS = 1565
.07
.07
0.3
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
River = Mosquito Creek Reach = Reach 1 RS = 1560
.06
.06
0.4
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
River = Mosquito Creek Reach = Reach 1 RS = 1555
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.075
0.4
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
River = Mosquito Creek Reach = Reach 1 RS = 1550
.06
.06
0.4
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
River = Mosquito Creek Reach = Reach 1 RS = 1545
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Elevation (m)
Station (m)
Legend
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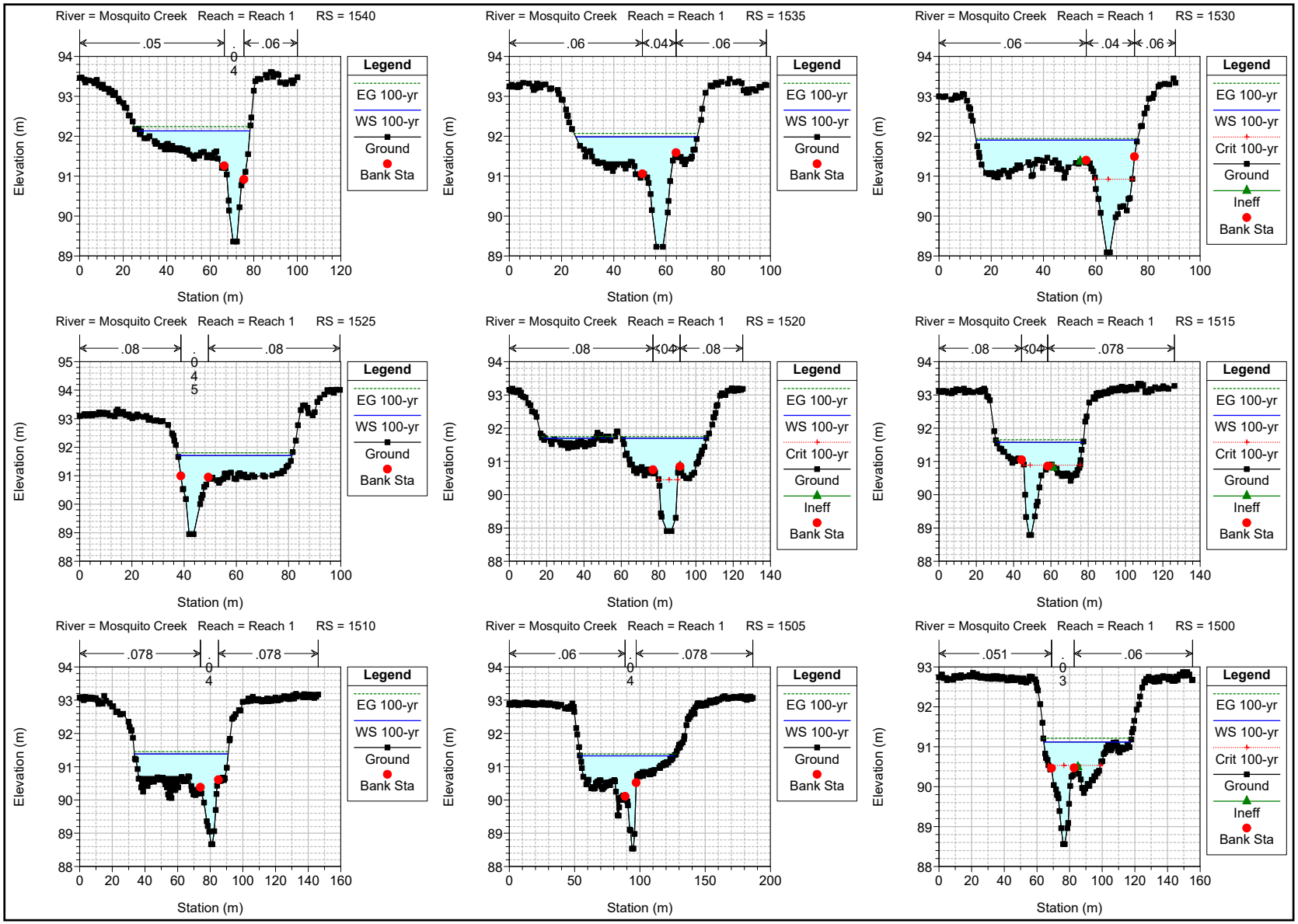
WS 100-yr
Ground
Bank Sta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WS 100-yr
Ground
Bank Sta
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Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1535
.06
.04
.06
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1530
.06
.04
.06
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1525
.08
.045
.08
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1520
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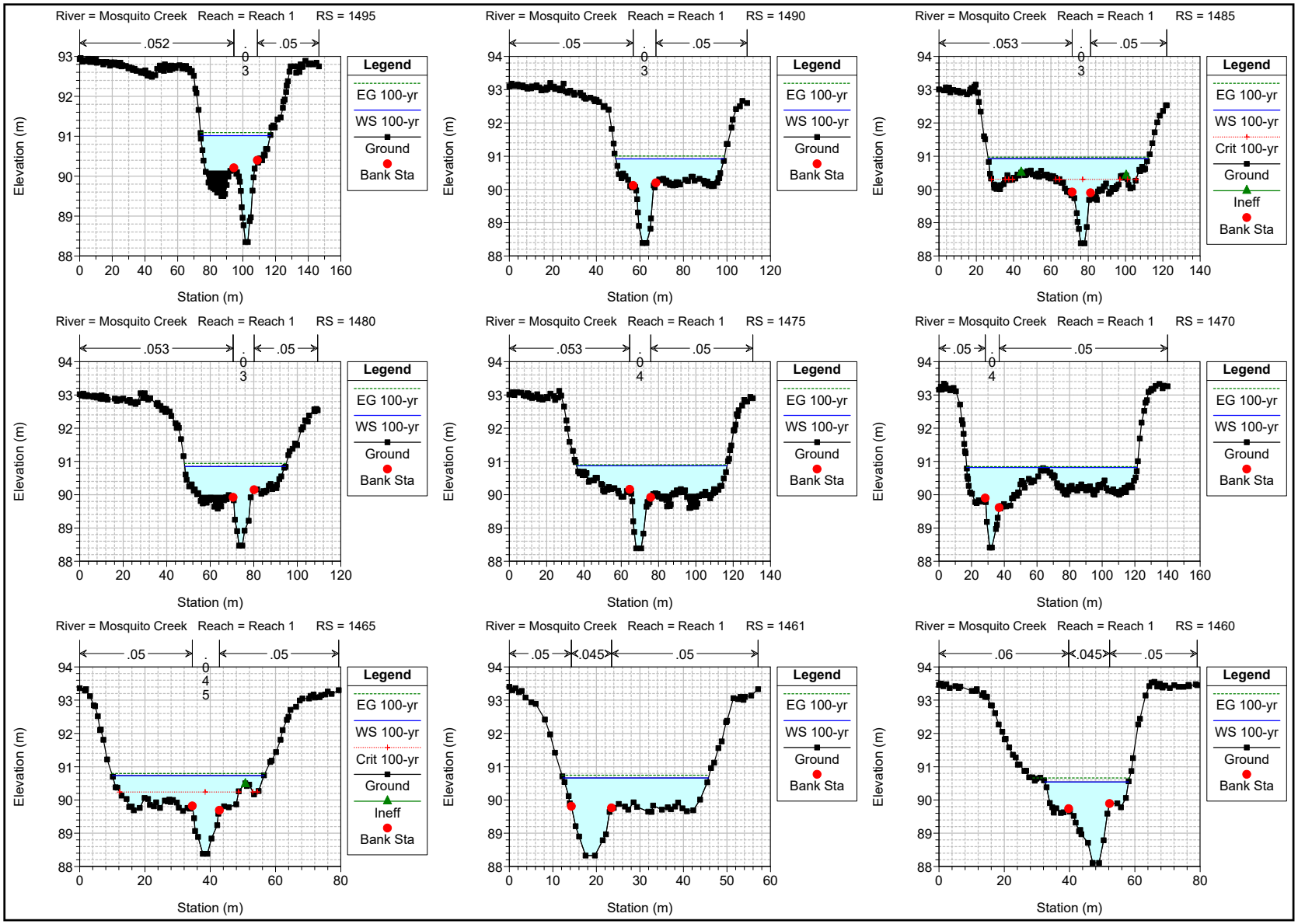
.04
.08
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1515
.08
.04
.078
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1510
.078
.04
.078
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1505
.06
.04
.078
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1500
.051
.03
.06
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)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WS 100-yr
Ground
Bank Sta
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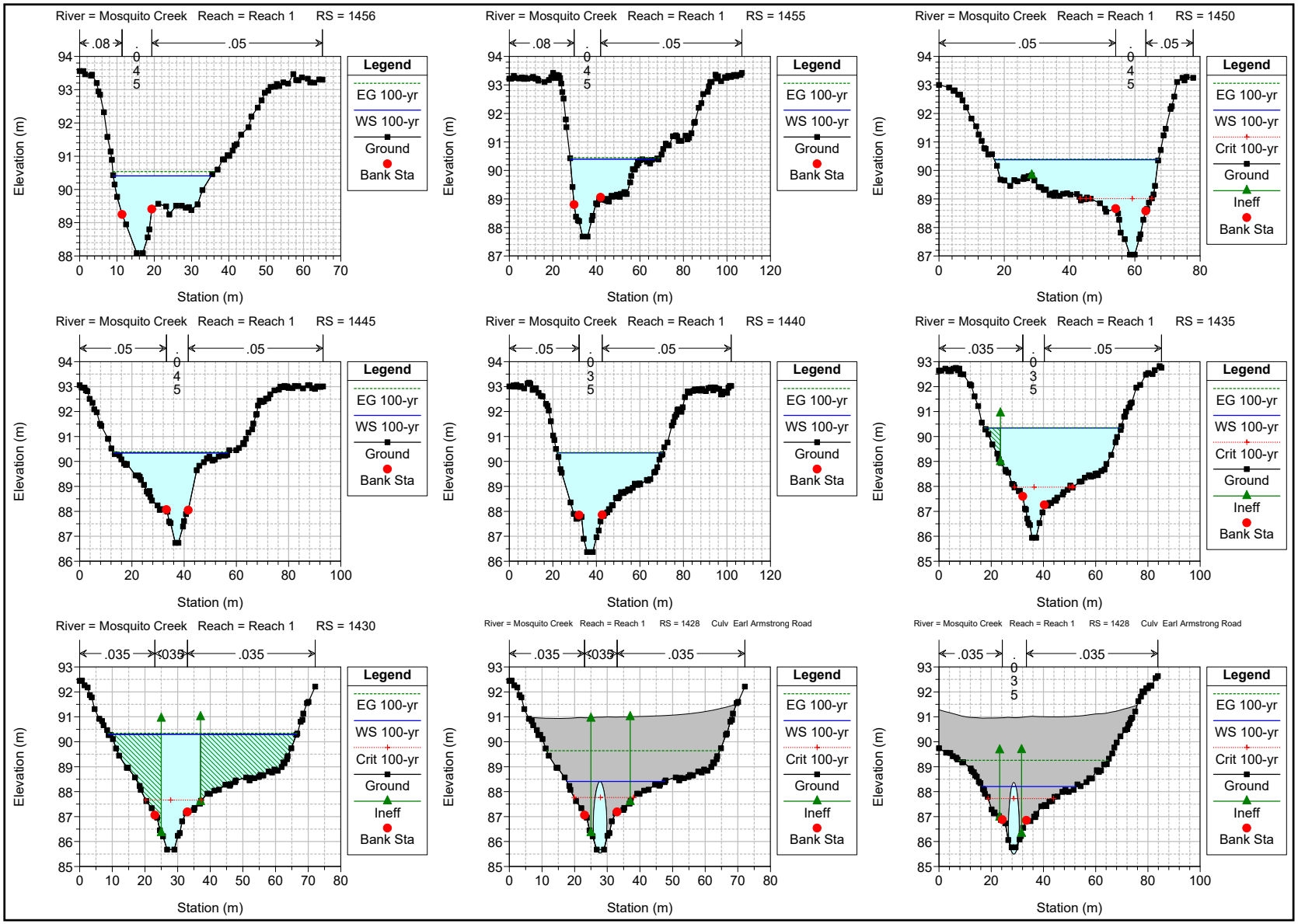
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1490
.05
.03
.05
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1485
.053
.03
.05
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1480
.053
.03
.05
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1475
.053
.04
.05
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1470
.05
.04
.05
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1465
.05
.045
.05
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1461
.05
.045
.05
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1460
.06
.045
.05
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)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WS 100-yr
Ground
Bank Sta
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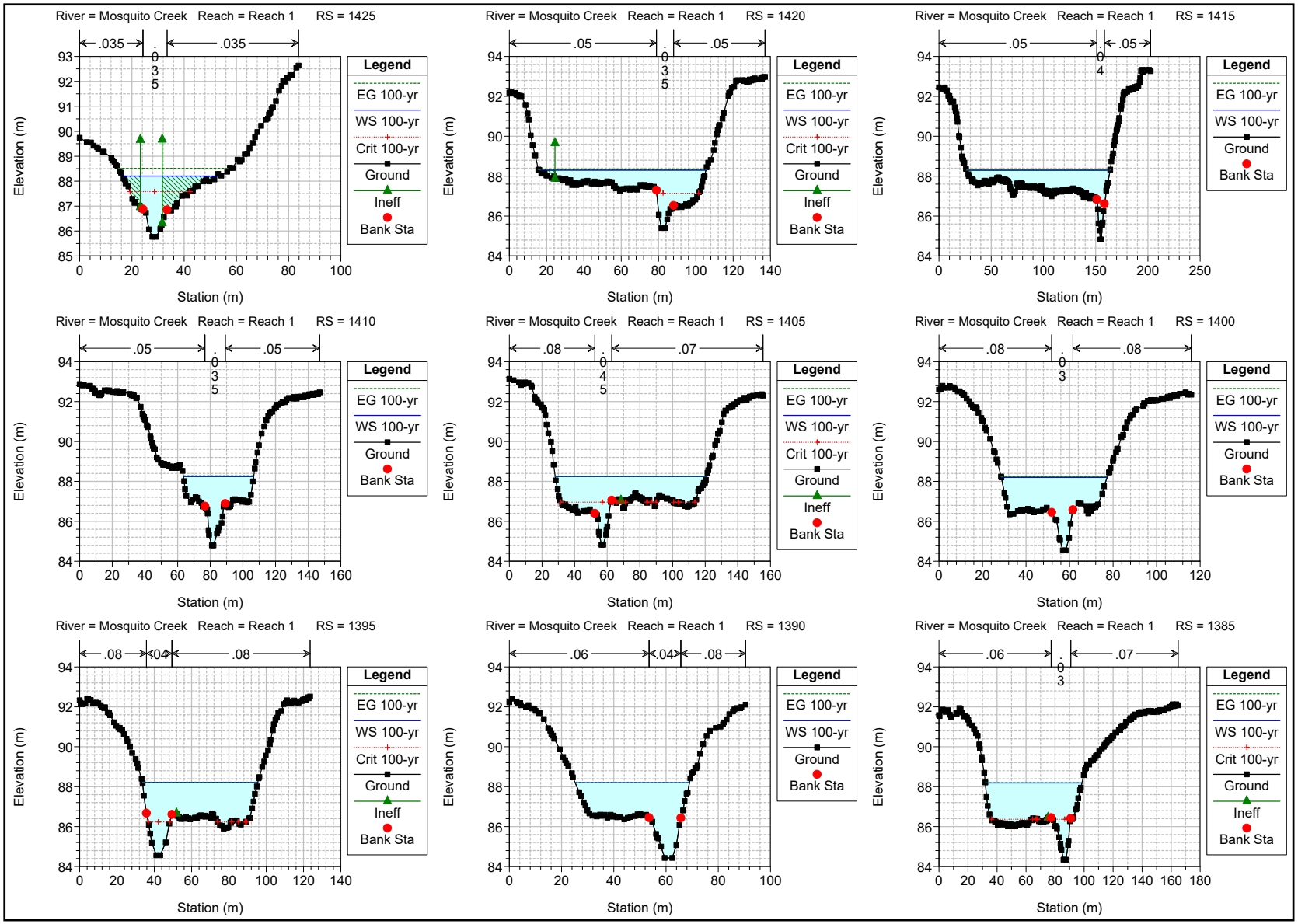
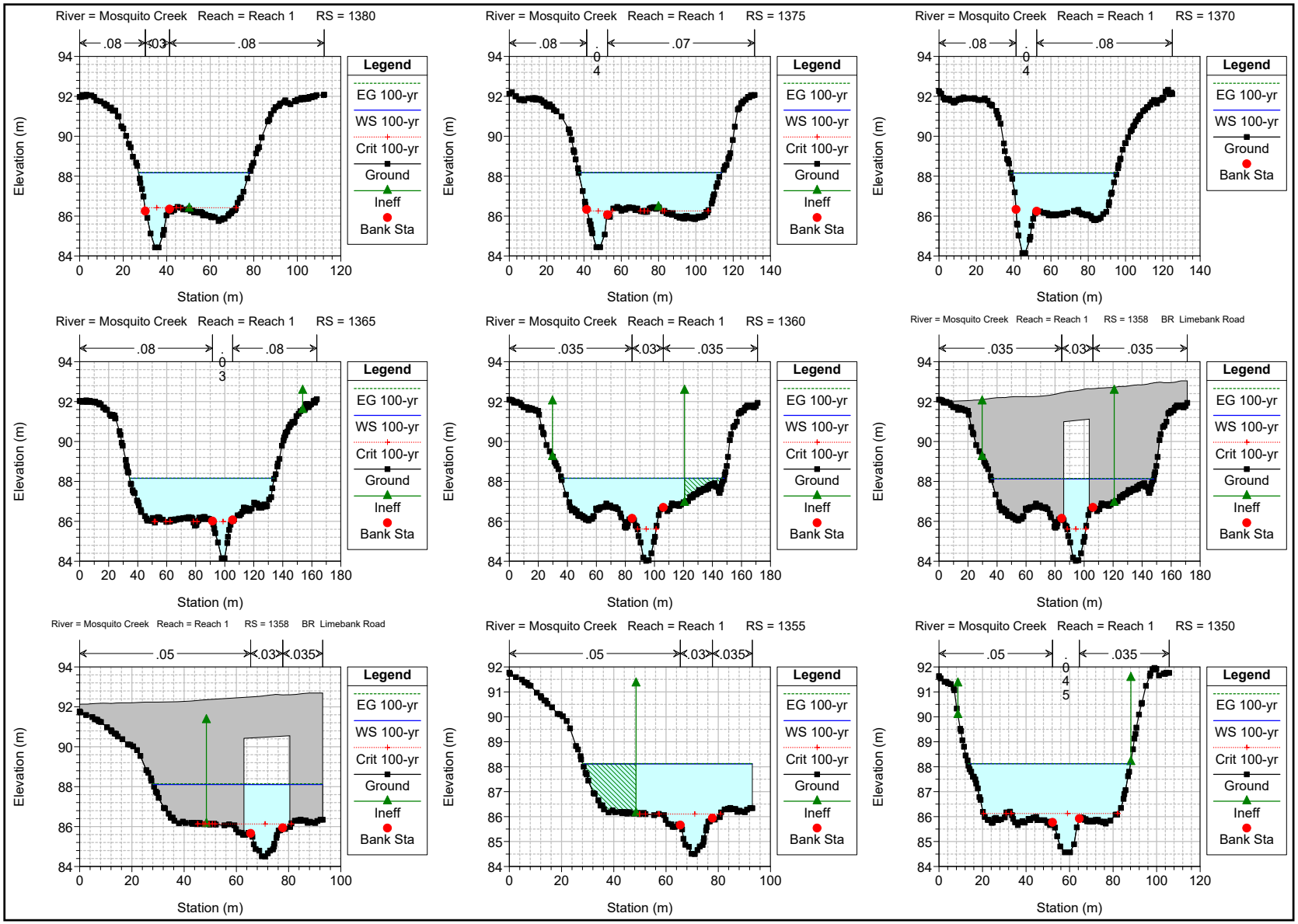
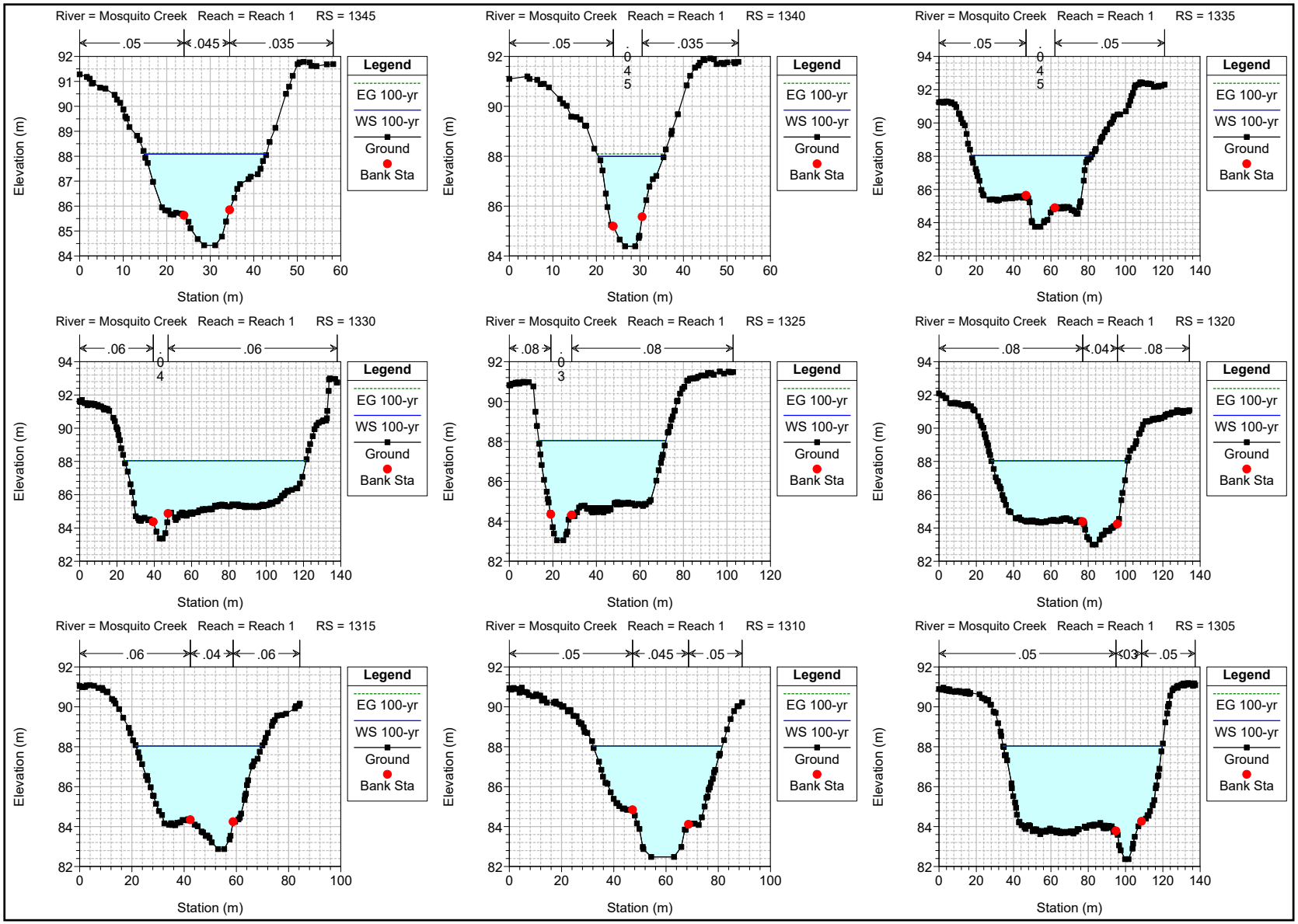
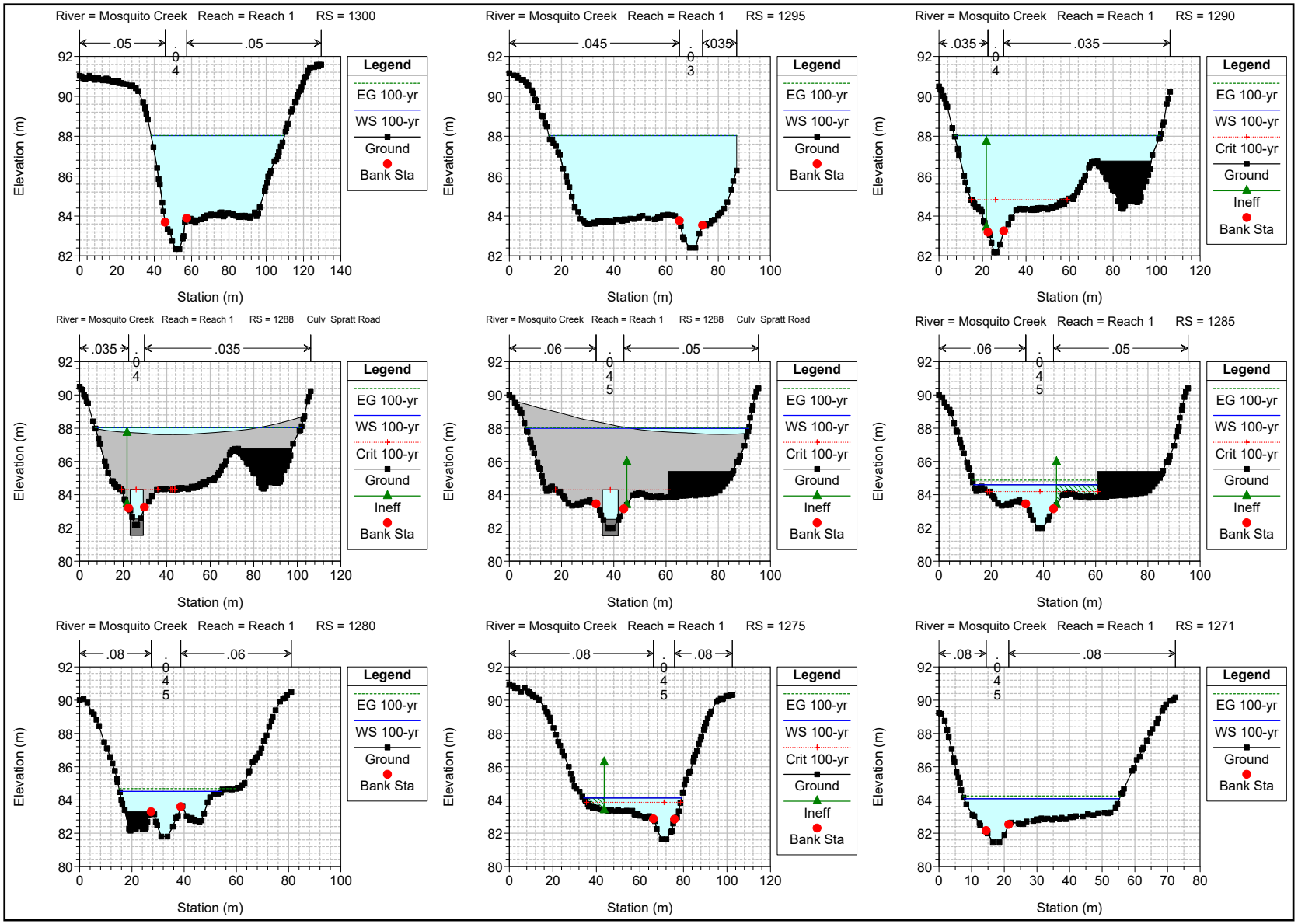
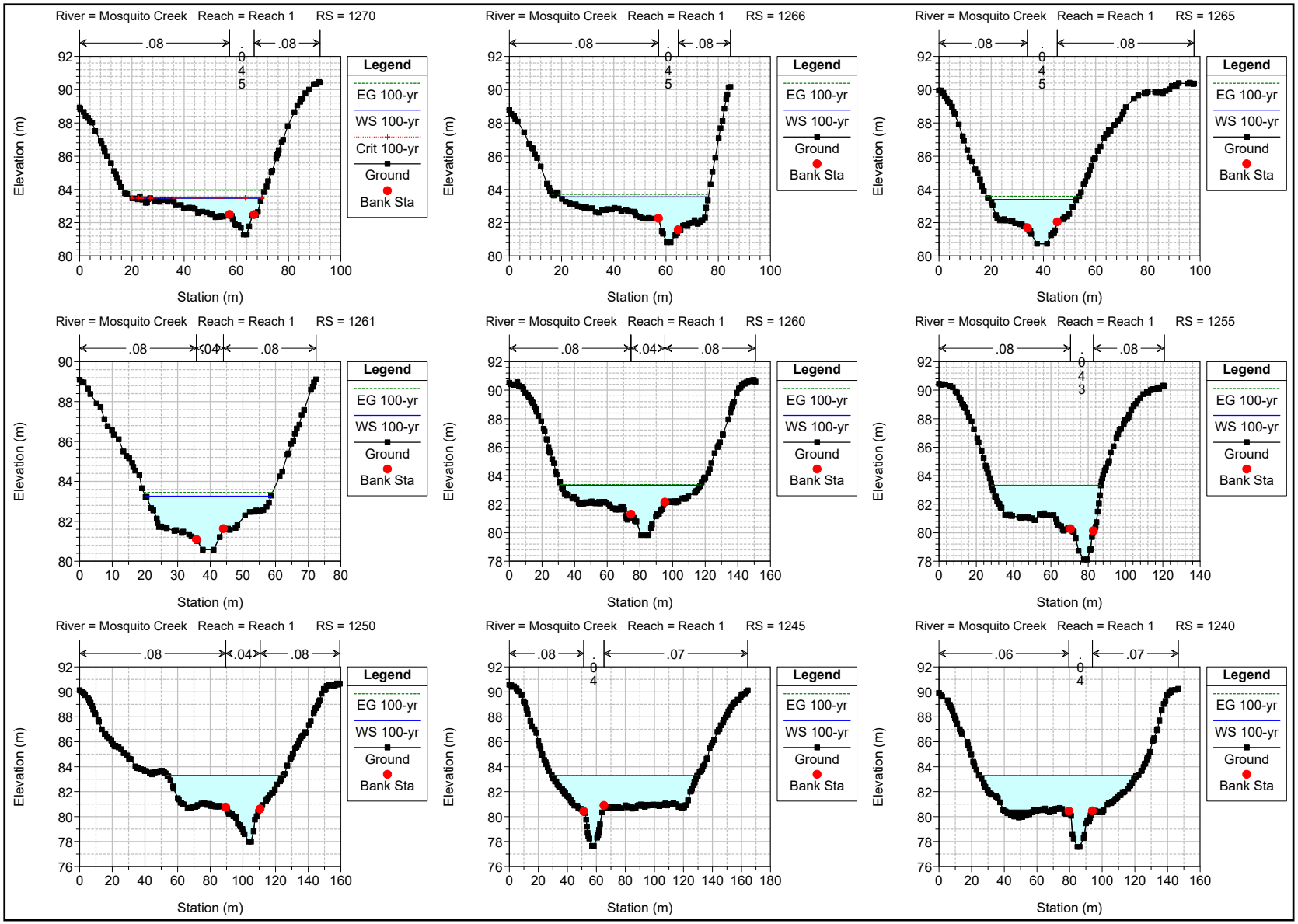
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1455
.08
.045
.05
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1450
.05
.045
.05
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1445
.05
.045
.05
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1440
.05
.035
.05
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1435
.035
.035
.05
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1430
.035
.035
.035
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1428 Culv Earl Armstrong Road
.035
.035
.035
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1428 Culv Earl Armstrong Road
.035
.035
.035
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)

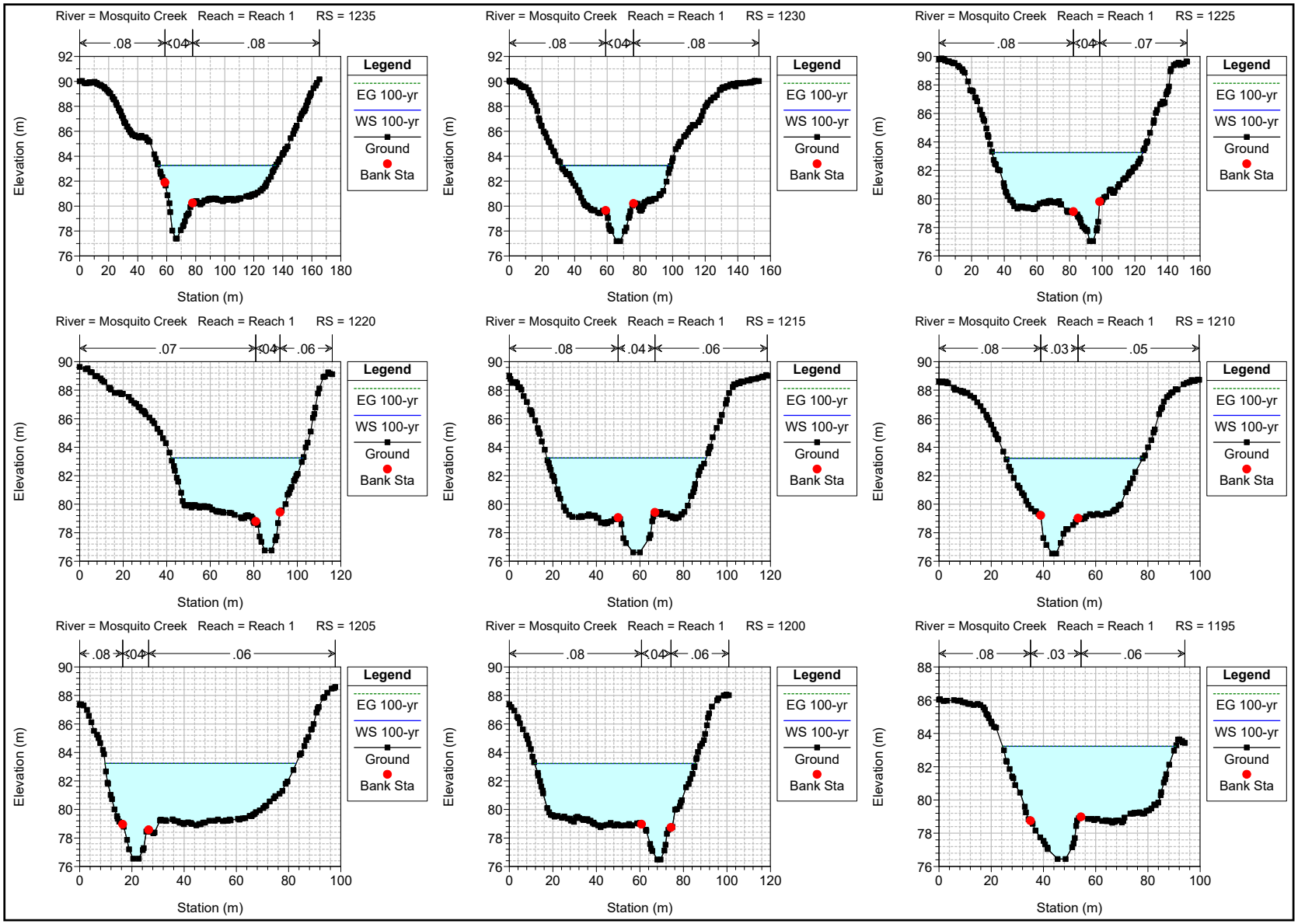

River = Mosquito Creek Reach = Reach 1 RS = 1425
.035
.035
.035
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1420
.05
.05
.035
River = Mosquito Creek Reach = Reach 1 RS = 1415
.05
.05
.04
River = Mosquito Creek Reach = Reach 1 RS = 1410
.05
.05
.035
River = Mosquito Creek Reach = Reach 1 RS = 1405
.08
.07
.045
River = Mosquito Creek Reach = Reach 1 RS = 1400
.08
.08
.03
River = Mosquito Creek Reach = Reach 1 RS = 1395
.08
.04
.08
River = Mosquito Creek Reach = Reach 1 RS = 1390
.06
.04
.08
River = Mosquito Creek Reach = Reach 1 RS = 1385
.06
.07
.03

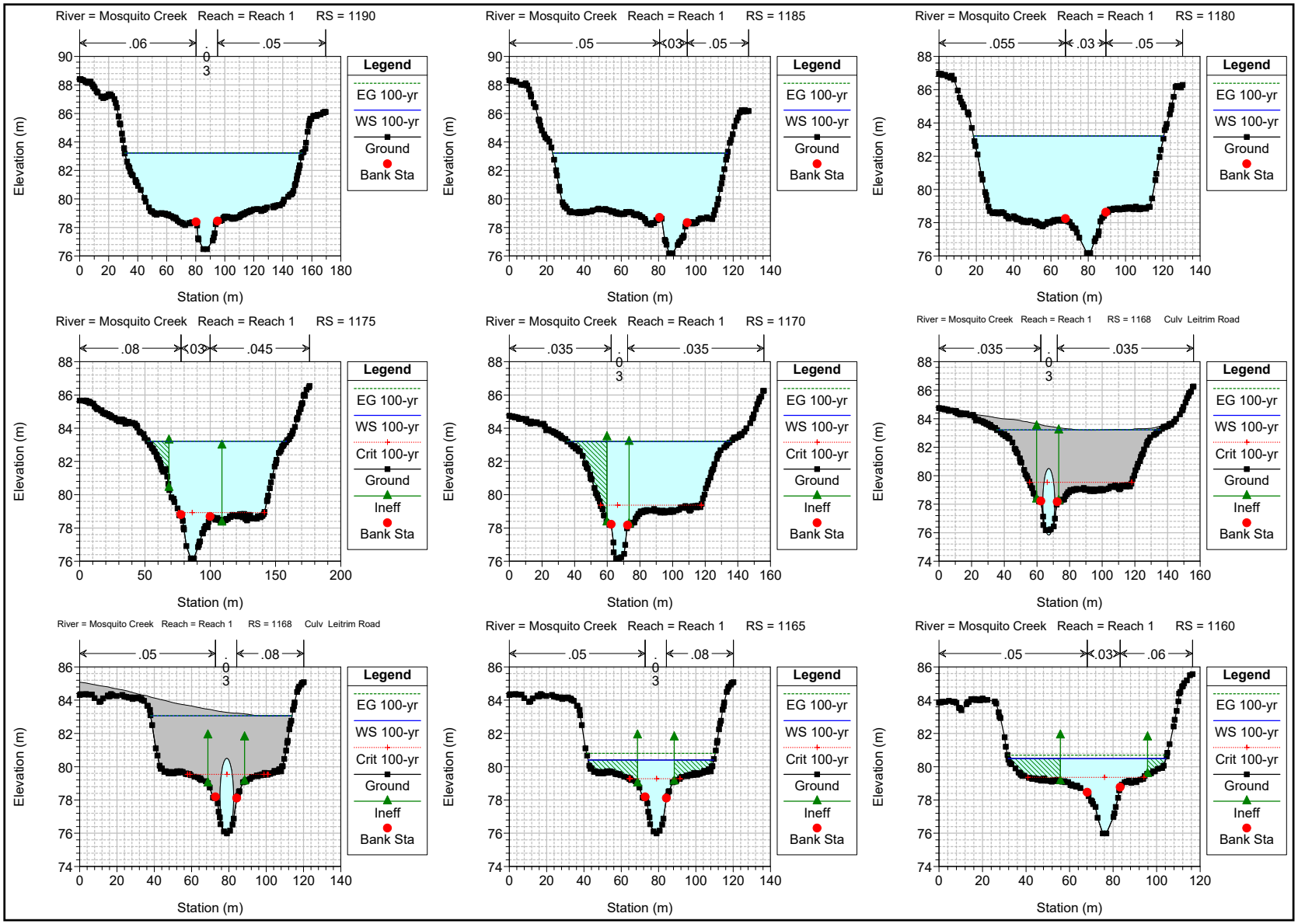

River = Mosquito Creek Reach = Reach 1 RS = 1380
.08 .03 .08
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1375
.08 .04 .07
River = Mosquito Creek Reach = Reach 1 RS = 1370
.08 .04 .08
River = Mosquito Creek Reach = Reach 1 RS = 1365
.08 .03 .08
River = Mosquito Creek Reach = Reach 1 RS = 1360
.035 .03 .035
River = Mosquito Creek Reach = Reach 1 RS = 1358 BR Limebank Road
.035 .03 .035
River = Mosquito Creek Reach = Reach 1 RS = 1358 BR Limebank Road
.05 .03 .035
River = Mosquito Creek Reach = Reach 1 RS = 1355
.05 .03 .035
River = Mosquito Creek Reach = Reach 1 RS = 1350
.05 .045 .035

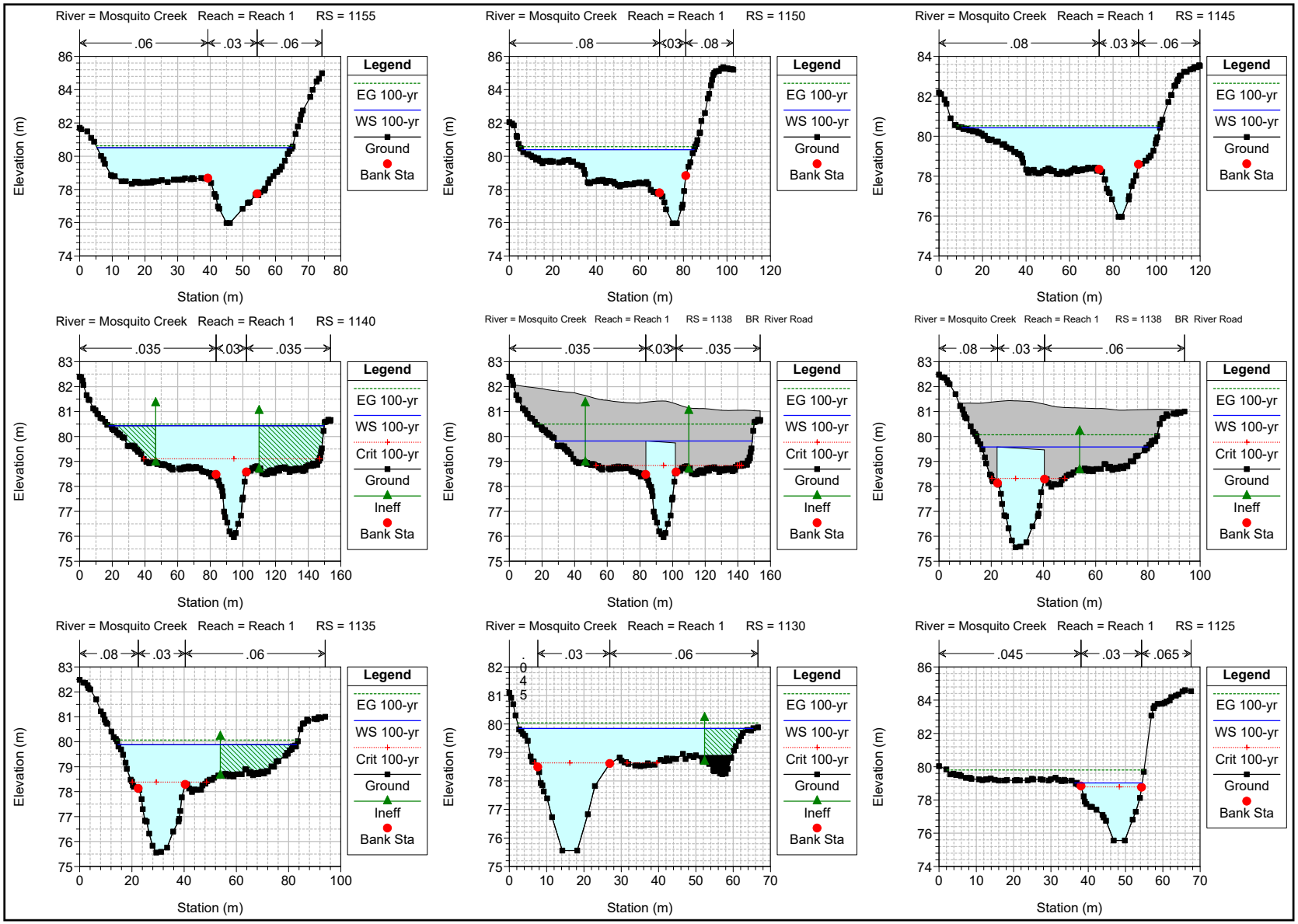

River = Mosquito Creek Reach = Reach 1 RS = 1345
.05
.045
.035
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1340
.05
.035
.045
River = Mosquito Creek Reach = Reach 1 RS = 1335
.05
.05
.045
River = Mosquito Creek Reach = Reach 1 RS = 1330
.06
.04
.06
River = Mosquito Creek Reach = Reach 1 RS = 1325
.08
.03
.08
River = Mosquito Creek Reach = Reach 1 RS = 1320
.08
.04
.08
River = Mosquito Creek Reach = Reach 1 RS = 1315
.06
.04
.06
River = Mosquito Creek Reach = Reach 1 RS = 1310
.05
.045
.05
River = Mosquito Creek Reach = Reach 1 RS = 1305
.05
.03
.05

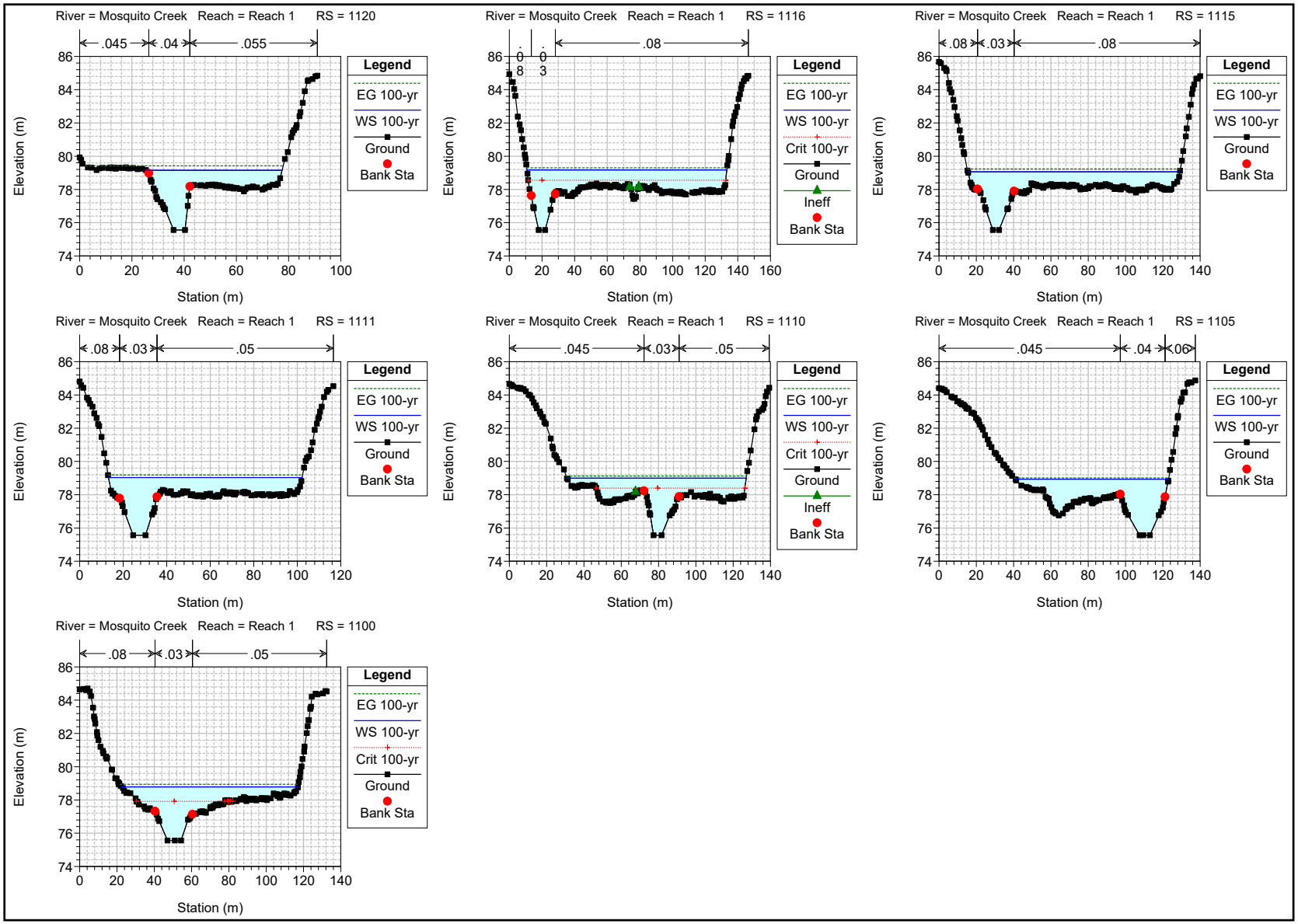

River = Mosquito Creek Reach = Reach 1 RS = 1300
.05
.04
.05
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1295
.045
.03
.035
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1290
.035
.04
.035
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1288 Culv Spratt Road
.035
.04
.035
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1288 Culv Spratt Road
.06
.045
.05
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1285
.06
.045
.05
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1280
.08
.045
.06
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1275
.08
.045
.08
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1271
.08
.045
.08
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)

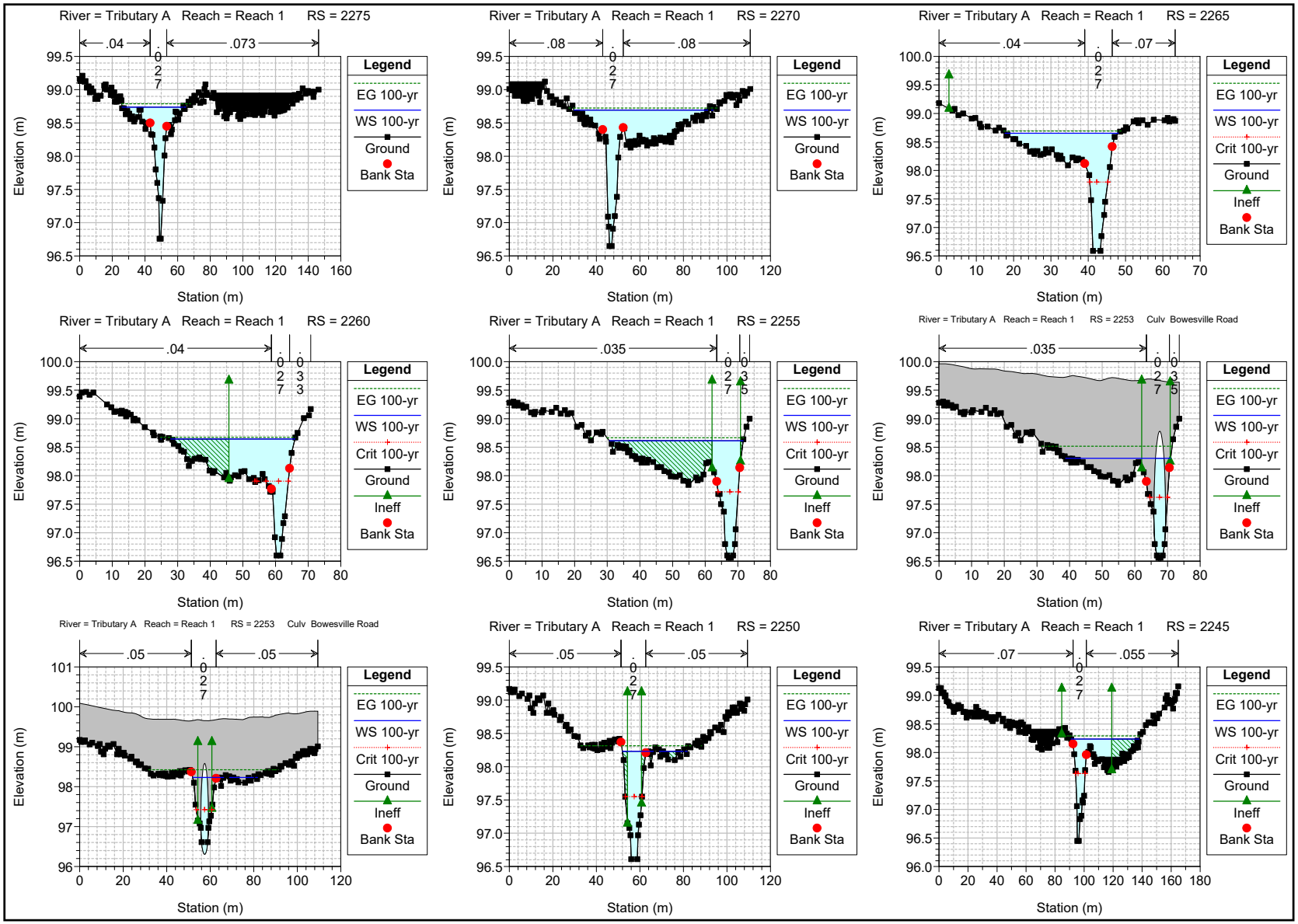

River = Mosquito Creek Reach = Reach 1 RS = 1270
River = Mosquito Creek Reach = Reach 1 RS = 1266
River = Mosquito Creek Reach = Reach 1 RS = 1265
River = Mosquito Creek Reach = Reach 1 RS = 1261
River = Mosquito Creek Reach = Reach 1 RS = 1260
River = Mosquito Creek Reach = Reach 1 RS = 1255
River = Mosquito Creek Reach = Reach 1 RS = 1250
River = Mosquito Creek Reach = Reach 1 RS = 1245
River = Mosquito Creek Reach = Reach 1 RS = 1240
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)

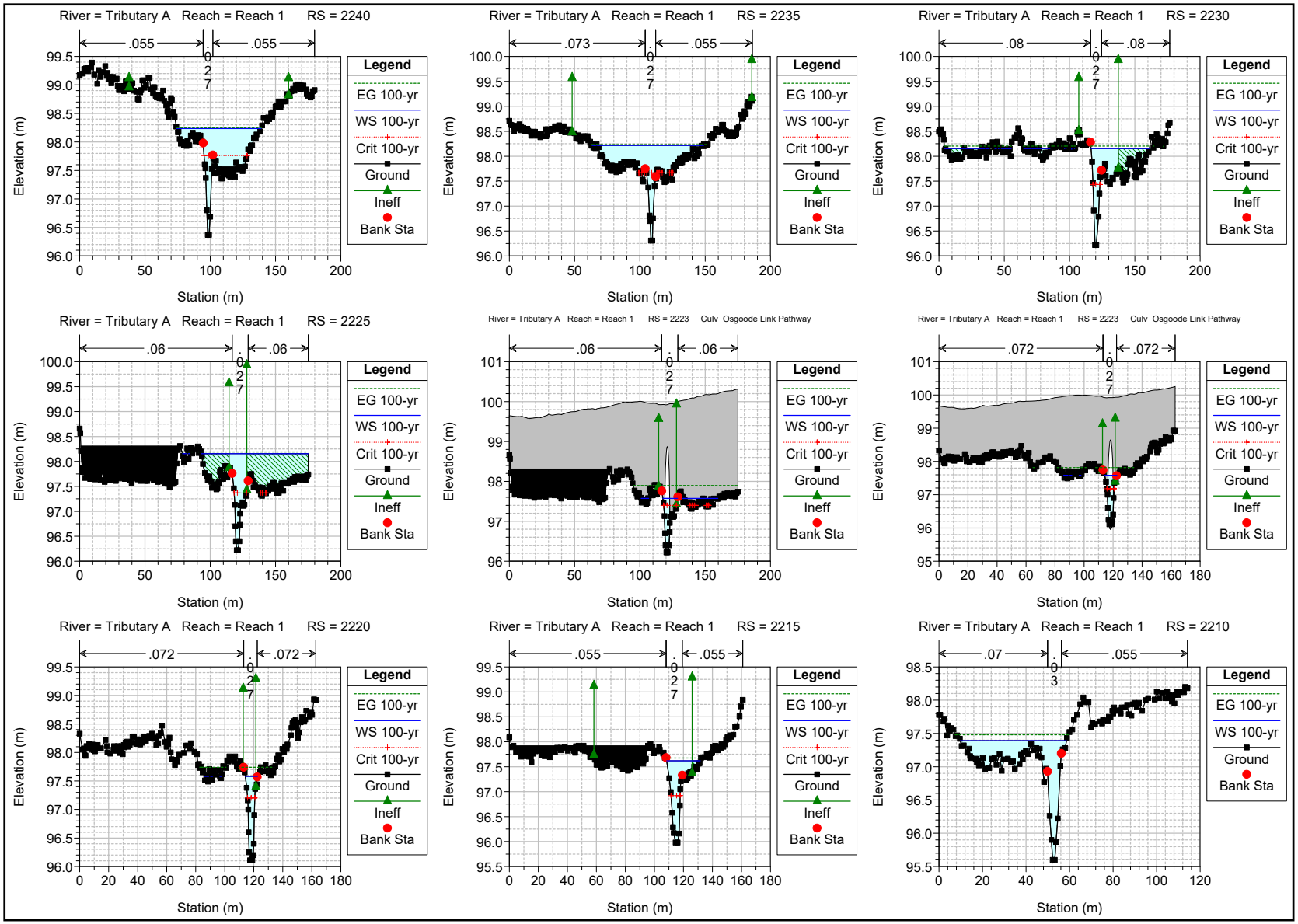

River = Mosquito Creek Reach = Reach 1 RS = 1235
.08 .04 .08
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
River = Mosquito Creek Reach = Reach 1 RS = 1230
.08 .04 .08
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
River = Mosquito Creek Reach = Reach 1 RS = 1225
.08 .04 .07
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
River = Mosquito Creek Reach = Reach 1 RS = 1220
.07 .04 .06
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
River = Mosquito Creek Reach = Reach 1 RS = 1215
.08 .04 .06
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
River = Mosquito Creek Reach = Reach 1 RS = 1210
.08 .03 .05
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
River = Mosquito Creek Reach = Reach 1 RS = 1205
.08 .04 .06
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
River = Mosquito Creek Reach = Reach 1 RS = 1200
.08 .04 .06
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
River = Mosquito Creek Reach = Reach 1 RS = 1195
.08 .03 .06
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta

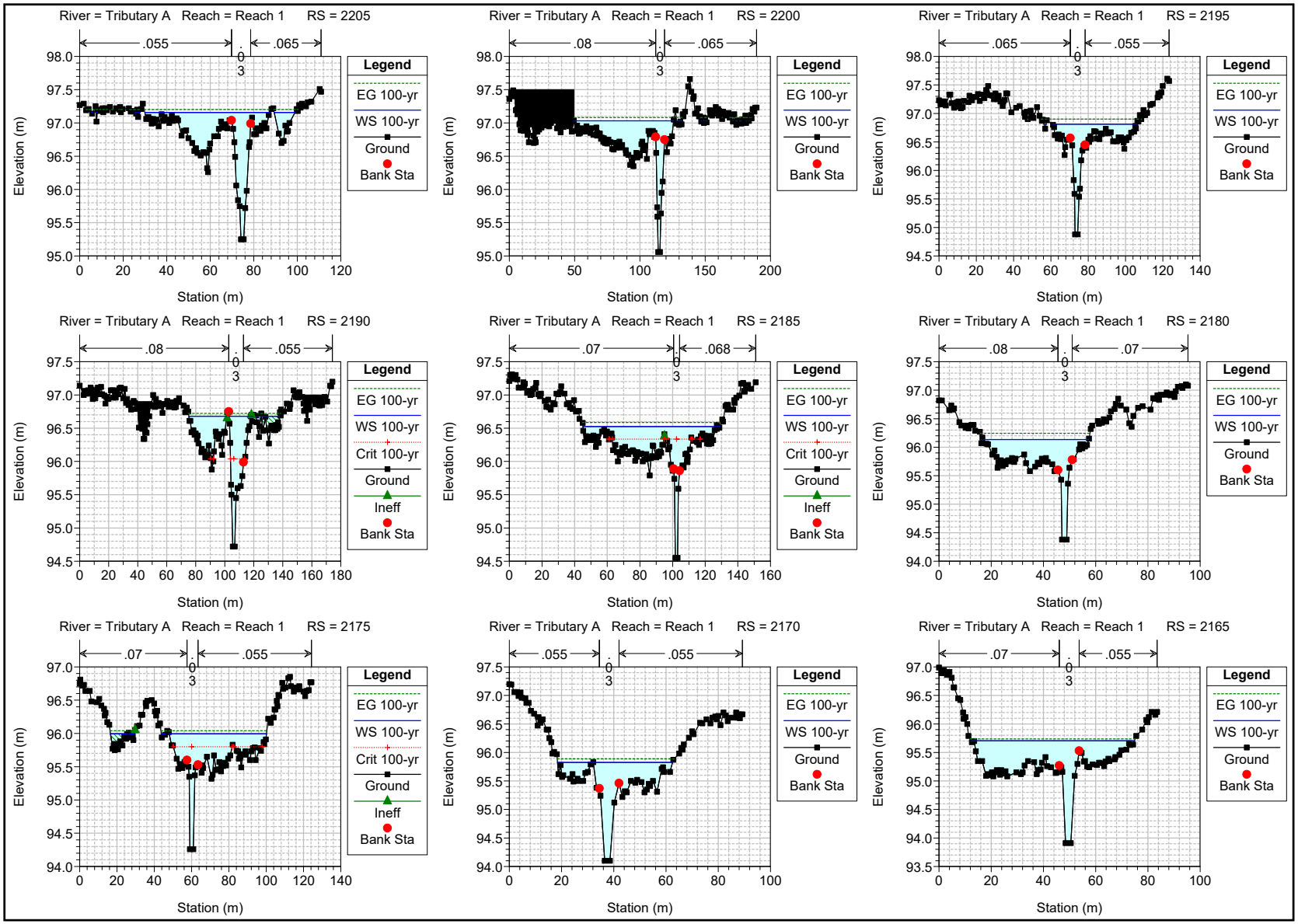

River = Mosquito Creek Reach = Reach 1 RS = 1190
.06
.03
.05
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1185
.05
.03
.05
River = Mosquito Creek Reach = Reach 1 RS = 1180
.055
.03
.05
River = Mosquito Creek Reach = Reach 1 RS = 1175
.08
.03
.045
Crit 100-yr
Ineff
River = Mosquito Creek Reach = Reach 1 RS = 1170
.035
.035
.035
River = Mosquito Creek Reach = Reach 1 RS = 1168 Culv Leitrim Road
.035
.035
.035
River = Mosquito Creek Reach = Reach 1 RS = 1168 Culv Leitrim Road
.05
.08
.05
River = Mosquito Creek Reach = Reach 1 RS = 1165
.05
.08
.05
River = Mosquito Creek Reach = Reach 1 RS = 1160
.05
.03
.06
.05

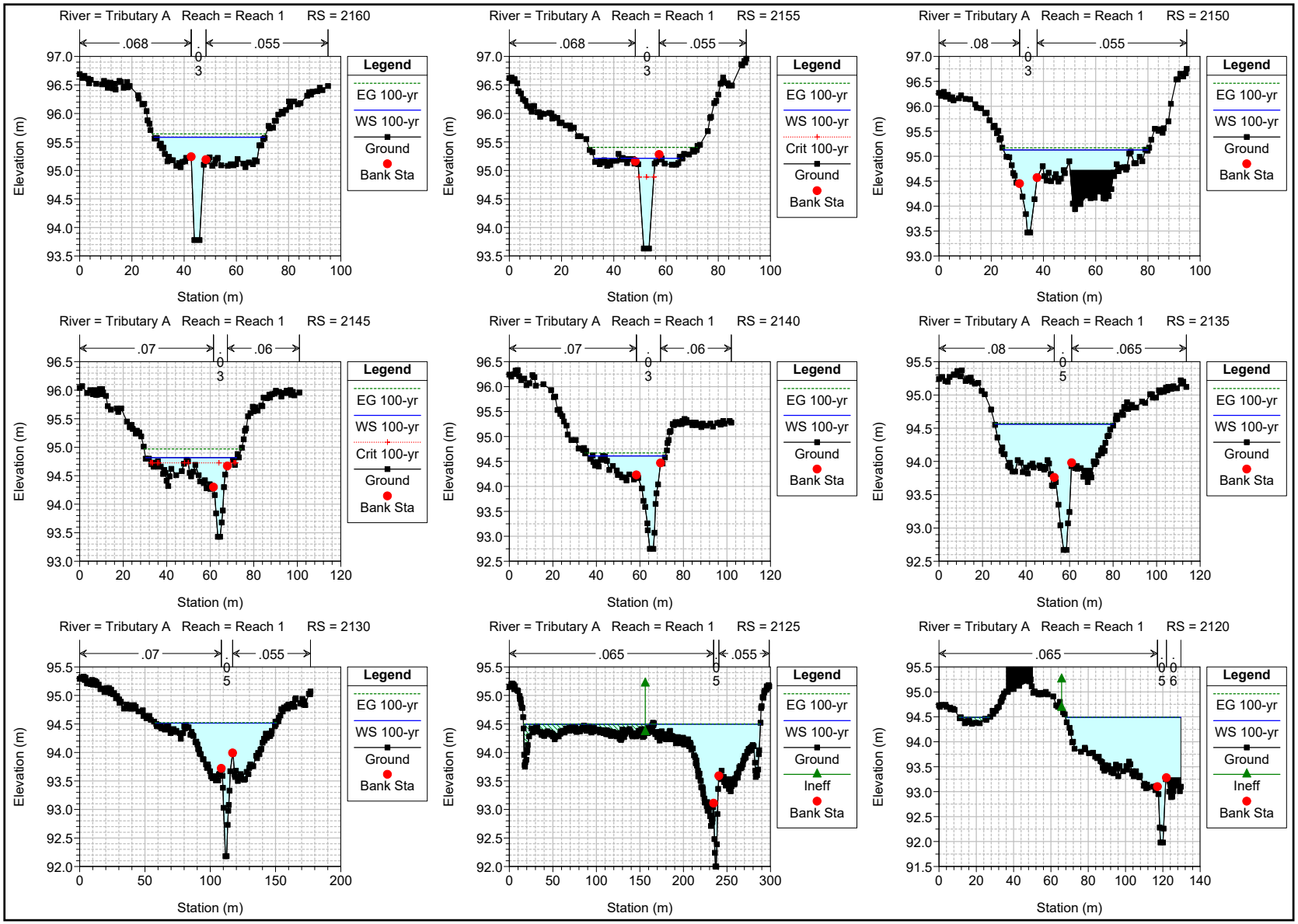

River = Mosquito Creek Reach = Reach 1 RS = 1155
.06 .03 .06
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Mosquito Creek Reach = Reach 1 RS = 1150
.08 .03 .08
River = Mosquito Creek Reach = Reach 1 RS = 1145
.08 .03 .06
River = Mosquito Creek Reach = Reach 1 RS = 1140
.035 .03 .035
Crit 100-yr
Ineff
River = Mosquito Creek Reach = Reach 1 RS = 1138 BR River Road
River = Mosquito Creek Reach = Reach 1 RS = 1135
.08 .03 .06
River = Mosquito Creek Reach = Reach 1 RS = 1130
.03 .06
River = Mosquito Creek Reach = Reach 1 RS = 1125
.045 .03 .065

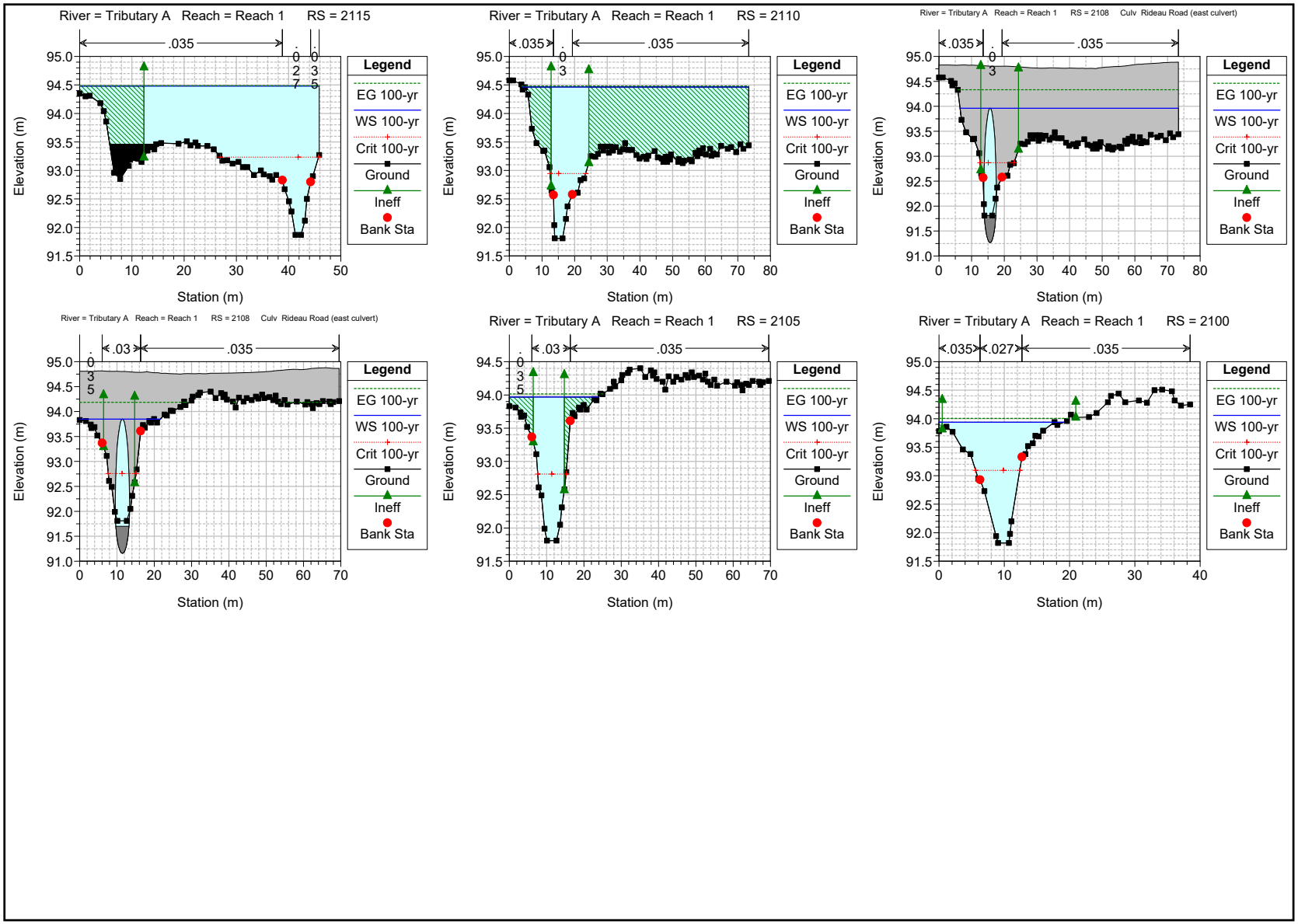

River = Mosquito Creek Reach = Reach 1 RS = 1120
.045
.04
.055
Elevation (m)
Station (m)
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
River = Mosquito Creek Reach = Reach 1 RS = 1116
.08
Crit 100-yr
Ineff
River = Mosquito Creek Reach = Reach 1 RS = 1115
.08
.03
.08
River = Mosquito Creek Reach = Reach 1 RS = 1111
.08
.03
.05
River = Mosquito Creek Reach = Reach 1 RS = 1110
.045
.03
.05
River = Mosquito Creek Reach = Reach 1 RS = 1105
.045
.04
.06
River = Mosquito Creek Reach = Reach 1 RS = 1100
.08
.03
.05

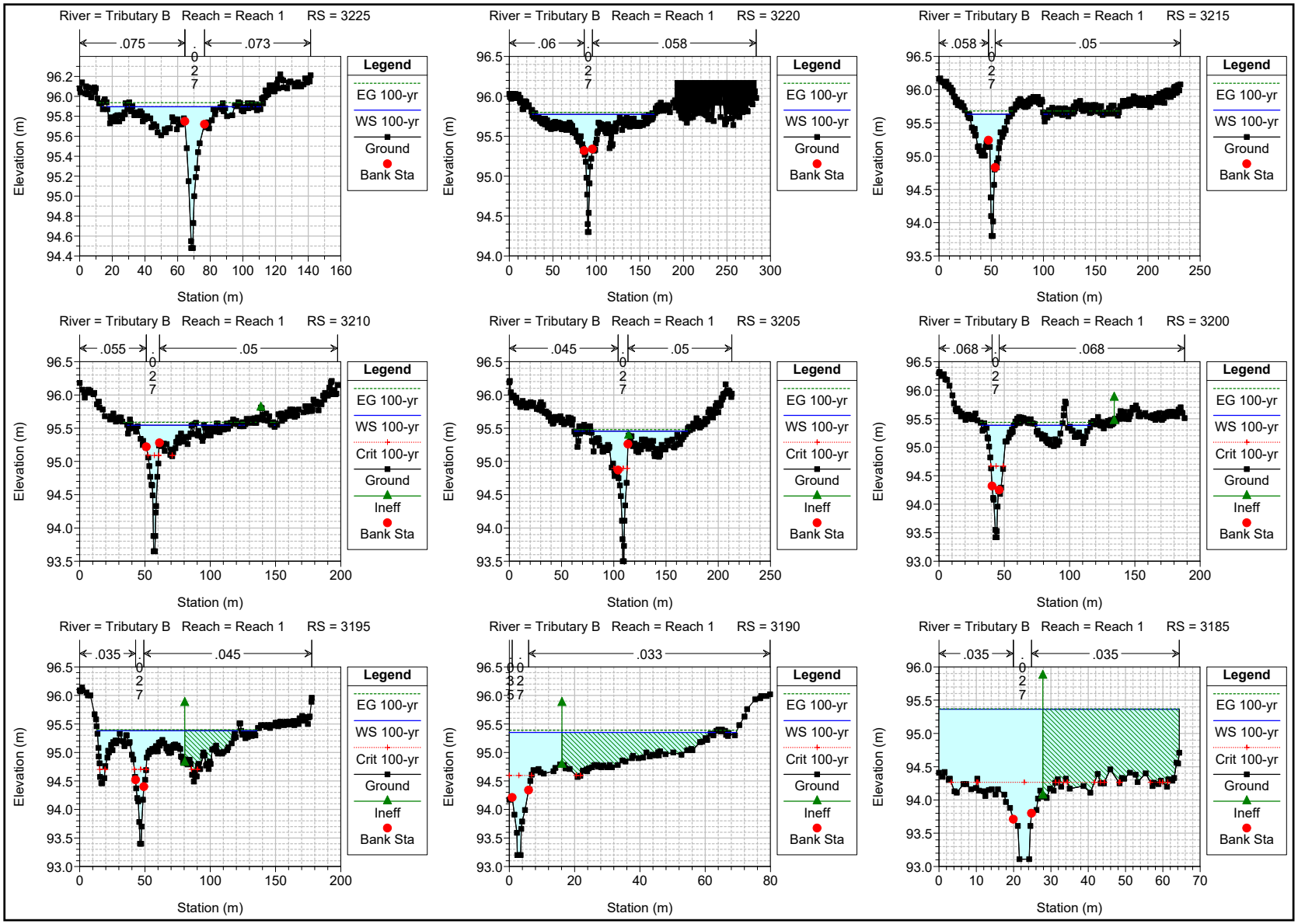

River = Tributary A Reach = Reach 1 RS = 2275
.04
.073
.027
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2270
.08
.08
.027
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2265
.04
.07
.027
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2260
.04
.027
.033
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2255
.035
.027
.035
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2253 Culv Bowesville Road
.035
.027
.035
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2253 Culv Bowesville Road
.05
.05
.027
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2250
.05
.05
.027
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2245
.07
.055
.027
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)

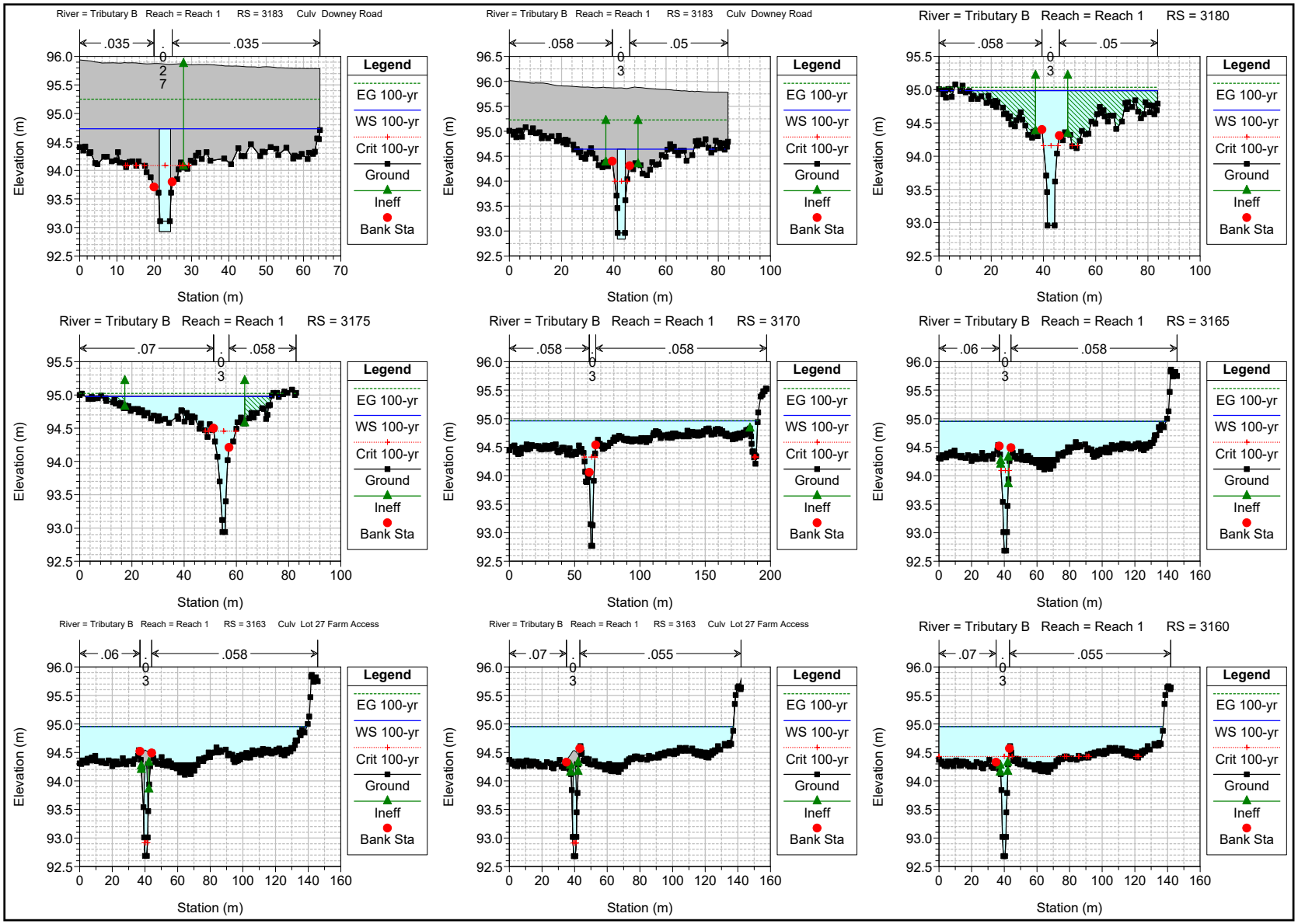

River = Tributary A Reach = Reach 1 RS = 2240
.055
.055
0.27
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2235
.073
.055
River = Tributary A Reach = Reach 1 RS = 2230
.08
.08
River = Tributary A Reach = Reach 1 RS = 2225
.06
.06
River = Tributary A Reach = Reach 1 RS = 2223 Culv Osgoode Link Pathway
.06
.06
River = Tributary A Reach = Reach 1 RS = 2223 Culv Osgoode Link Pathway
.072
.072
River = Tributary A Reach = Reach 1 RS = 2220
.072
.072
River = Tributary A Reach = Reach 1 RS = 2215
.055
.055
River = Tributary A Reach = Reach 1 RS = 2210
.07
.055
0.3

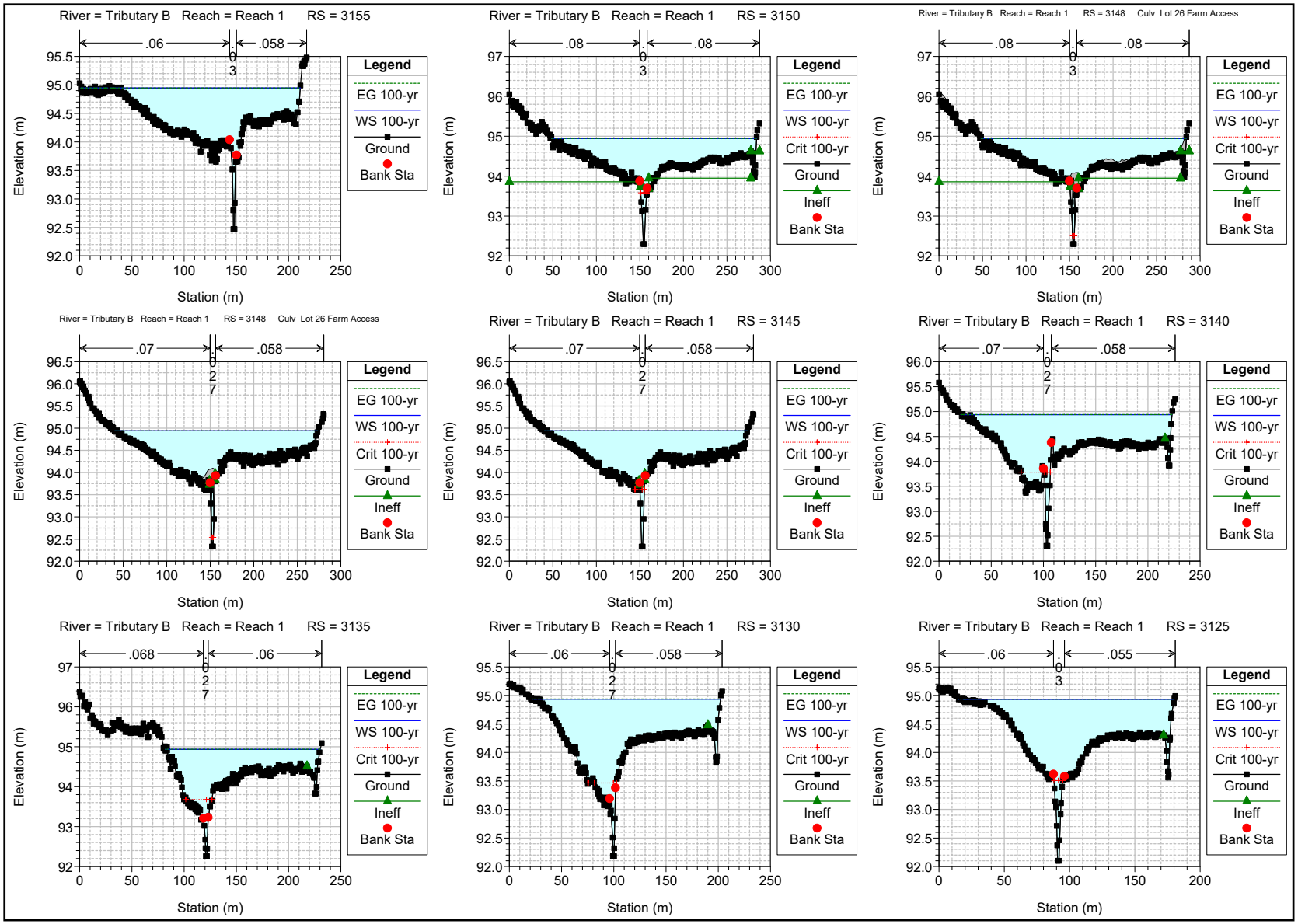

River = Tributary A Reach = Reach 1 RS = 2205
.055
.065
0
3
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2200
.08
.065
0
3
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2195
.065
.055
0
3
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2190
.08
.055
0
3
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2185
.07
.068
0
3
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2180
.08
.07
0
3
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2175
.07
.055
0
3
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2170
.055
.055
0
3
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2165
.07
.055
0
3
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)


River = Tributary A Reach = Reach 1 RS = 2160
.068
.055
0.3
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2155
.068
.055
0.3
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2150
.08
.055
0.3
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2145
.07
.06
0.3
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2140
.07
.06
0.3
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2135
.08
.065
0.5
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2130
.07
.055
0.5
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2125
.065
.055
0.5
Legend
EG 100-yr
WS 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2120
.065
0.5 0.6
Legend
EG 100-yr
WS 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)


River = Tributary A Reach = Reach 1 RS = 2115
.035
.027
.035
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary A Reach = Reach 1 RS = 2110
.035
.035
River = Tributary A Reach = Reach 1 RS = 2108 Culv Rideau Road (east culvert)
.035
.035
River = Tributary A Reach = Reach 1 RS = 2108 Culv Rideau Road (east culvert)
.03
.035
River = Tributary A Reach = Reach 1 RS = 2105
.03
.035
River = Tributary A Reach = Reach 1 RS = 2100
.035
.027
.035


River = Tributary B Reach = Reach 1 RS = 3225
.075
.073
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Tributary B Reach = Reach 1 RS = 3220
.06
.058
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Tributary B Reach = Reach 1 RS = 3215
.058
.05
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Tributary B Reach = Reach 1 RS = 3210
.055
.05
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary B Reach = Reach 1 RS = 3205
.045
.05
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary B Reach = Reach 1 RS = 3200
.068
.068
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary B Reach = Reach 1 RS = 3195
.035
.045
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary B Reach = Reach 1 RS = 3190
.033
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary B Reach = Reach 1 RS = 3185
.035
.035
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)


River = Tributary B Reach = Reach 1 RS = 3183 Culv Downey Road
.035
.027
.035
River = Tributary B Reach = Reach 1 RS = 3183 Culv Downey Road
.058
.03
.05
River = Tributary B Reach = Reach 1 RS = 3180
.058
.03
.05
River = Tributary B Reach = Reach 1 RS = 3175
.07
.03
.058
River = Tributary B Reach = Reach 1 RS = 3170
.058
.03
.058
River = Tributary B Reach = Reach 1 RS = 3165
.06
.03
.058
River = Tributary B Reach = Reach 1 RS = 3163 Culv Lot 27 Farm Access
.06
.03
.058
River = Tributary B Reach = Reach 1 RS = 3163 Culv Lot 27 Farm Access
.07
.03
.055
River = Tributary B Reach = Reach 1 RS = 3160
.07
.03
.055
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)


River = Tributary B Reach = Reach 1 RS = 3155
.06
.058
0
3
Legend
EG 100-yr
WS 100-yr
Ground
Bank Sta
Elevation (m)
Station (m)
River = Tributary B Reach = Reach 1 RS = 3150
.08
.08
0
3
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary B Reach = Reach 1 RS = 3148 Culv Lot 26 Farm Access
.08
.08
0
3
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary B Reach = Reach 1 RS = 3148 Culv Lot 26 Farm Access
.07
.058
0
2
7
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary B Reach = Reach 1 RS = 3145
.07
.058
0
2
7
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary B Reach = Reach 1 RS = 3140
.07
.058
0
2
7
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary B Reach = Reach 1 RS = 3135
.068
.06
0
2
7
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary B Reach = Reach 1 RS = 3130
.06
.058
0
2
7
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary B Reach = Reach 1 RS = 3125
.06
.055
0
3
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)

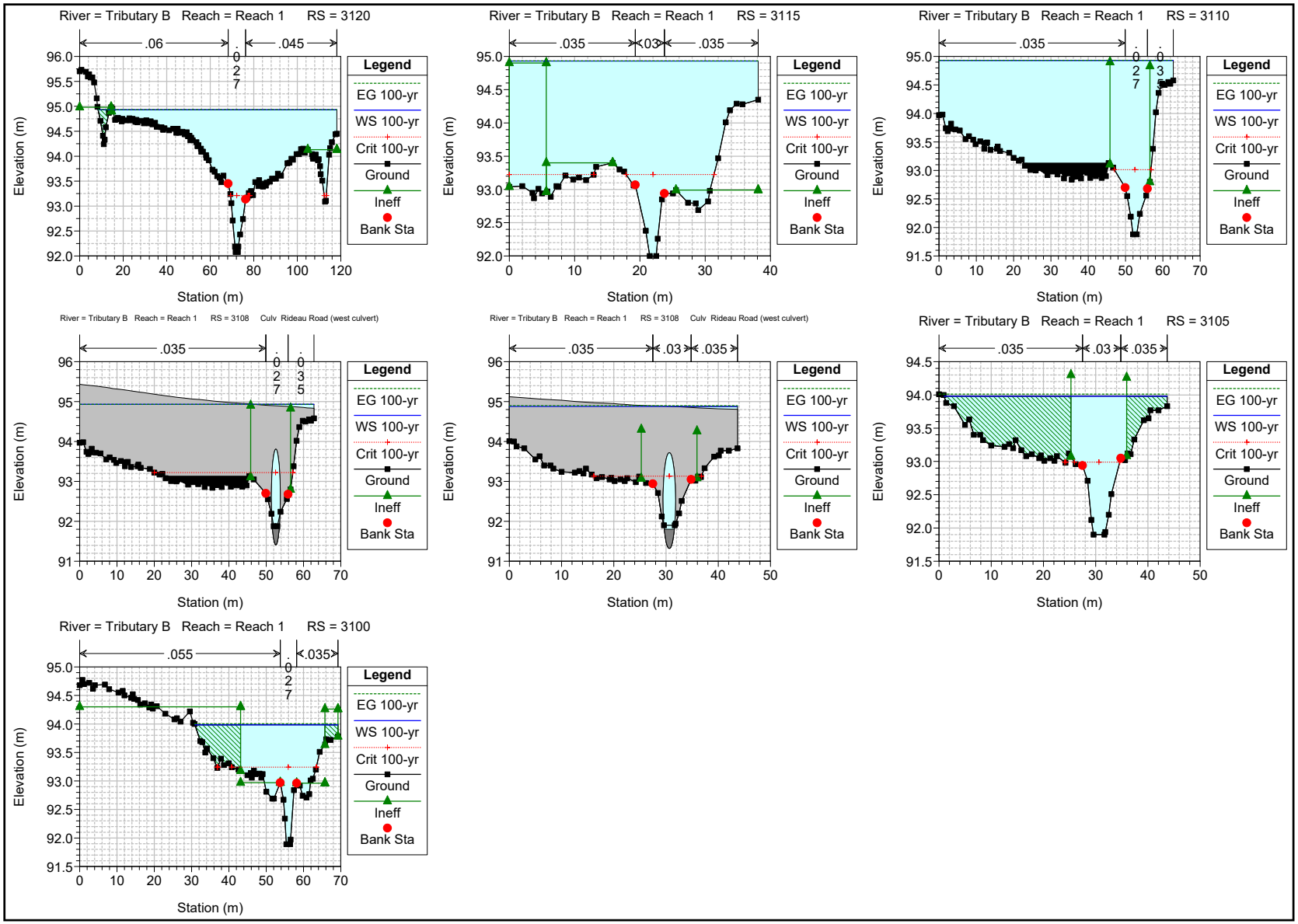

River = Tributary B Reach = Reach 1 RS = 3120
.06
.045
0
2
7
Legend
EG 100-yr
WS 100-yr
Crit 100-yr
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)
River = Tributary B Reach = Reach 1 RS = 3115
.035
.03
.035
River = Tributary B Reach = Reach 1 RS = 3110
.035
0
3
River = Tributary B Reach = Reach 1 RS = 3108 Culv Rideau Road (west culvert)
.035
0
2
7
0
3
5
River = Tributary B Reach = Reach 1 RS = 3105
River = Tributary B Reach = Reach 1 RS = 3100
.055
.035

Table B1 Manning n values

River	Reach	Xsec ID #	Left Bank		Channel		Right Bank	
			n	Description	n	Description	n	Description
Mosquito Creek	Reach 1	1100	0.080	Medium brush - summer	0.030	Natural, clean, straight, clay	0.050	Light brush / high grass
	Reach 1	1105	0.045	Light brush / short grass	0.040	Natural, clean, winding, clay	0.060	Light brush - summer
	Reach 1	1110	0.045	Light brush / short grass	0.030	Natural, clean, straight, clay	0.050	Light brush / high grass
	Reach 1	1111	0.080	Medium brush - summer	0.030	Natural, clean, straight, clay	0.050	Light brush / high grass
	Reach 1	1115	0.080	Medium brush - summer	0.030	Natural, clean, straight, clay	0.080	Medium brush - summer
	Reach 1	1116	0.080	Medium brush - summer	0.030	Natural, clean, straight, clay	0.080	Medium brush - summer
	Reach 1	1120	0.045	Light brush / short grass	0.040	Natural, clean, winding, clay	0.055	Medium brush / high grass
	Reach 1	1125	0.045	Light brush / short grass	0.030	Natural, clean, straight, clay	0.065	Medium brush / high grass
	Reach 1	1130	0.045	Light brush / short grass	0.030	Natural, clean, straight, clay	0.060	Light brush - summer
	Reach 1	1135	0.080	Medium brush - summer	0.030	Natural, clean, straight, clay	0.060	Light brush - summer
	Reach 1	1138	River Road					
	Reach 1	1140	0.035	High grass	0.030	Natural, clean, straight, clay	0.035	High grass
	Reach 1	1145	0.080	Medium brush - summer	0.030	Natural, clean, straight, clay	0.060	Light / scattered brush
	Reach 1	1150	0.080	Medium brush - summer	0.030	Natural, clean, straight, clay	0.080	Medium brush - summer
	Reach 1	1155	0.060	Light brush - summer	0.030	Natural, clean, straight, clay	0.060	Light brush - summer
	Reach 1	1160	0.050	Scattered brush	0.030	Natural, clean, straight, clay	0.060	Light brush - summer
	Reach 1	1165	0.050	Scattered brush	0.030	Natural, clean, straight, clay	0.080	High grass
	Reach 1	1168	Leitrim Road					
	Reach 1	1170	0.035	High grass	0.030	Natural, clean, straight, clay	0.035	High grass
	Reach 1	1175	0.080	Medium brush - summer	0.030	Natural, clean, straight, clay	0.045	Scattered brush / high grass
	Reach 1	1180	0.055	Light / scattered brush	0.030	Natural, clean, straight, clay	0.050	Scattered brush
	Reach 1	1185	0.050	Scattered brush	0.030	Natural, clean, straight, clay	0.050	Scattered brush
	Reach 1	1190	0.060	Light brush - summer	0.030	Natural, clean, straight, clay	0.050	Scattered brush
	Reach 1	1195	0.080	Medium brush - summer	0.030	Natural, clean, straight, clay	0.060	Light brush - summer
	Reach 1	1200	0.080	Medium brush - summer	0.040	Natural, clean, winding, clay	0.060	Light brush - summer
	Reach 1	1205	0.080	Medium brush - summer	0.040	Natural, clean, winding, clay	0.060	Light brush - summer
	Reach 1	1210	0.080	Medium brush - summer	0.030	Natural, clean, straight, clay	0.050	Scattered brush
	Reach 1	1215	0.080	Medium brush - summer	0.040	Natural, clean, winding, clay	0.060	Light brush - summer
	Reach 1	1220	0.070	Light / medium brush	0.040	Natural, clean, winding, clay	0.060	Light brush - summer
	Reach 1	1225	0.080	Medium brush - summer	0.040	Natural, clean, winding, clay	0.070	Light / medium brush
	Reach 1	1230	0.080	Medium brush - summer	0.040	Natural, clean, winding, clay	0.080	Medium brush - summer
	Reach 1	1235	0.080	Medium brush - summer	0.040	Natural, clean, winding, clay	0.080	Medium brush - summer
	Reach 1	1240	0.060	Light brush - summer	0.040	Natural, clean, winding, clay	0.070	Light / medium brush
	Reach 1	1245	0.080	Medium brush - summer	0.040	Natural, clean, winding, clay	0.070	Light / medium brush
	Reach 1	1250	0.080	Medium brush - summer	0.040	Natural, clean, winding, clay	0.080	Medium brush - summer
	Reach 1	1255	0.080	Medium brush - summer	0.043	Natural, clean, winding, mixed	0.080	Medium brush - summer
	Reach 1	1260	0.080	Medium brush - summer	0.040	Natural, clean, winding, mixed	0.080	Medium brush - summer
	Reach 1	1261	0.080	Medium brush - summer	0.040	Natural, clean, winding, bedrock	0.080	Medium brush - summer
	Reach 1	1265	0.080	Medium brush - summer	0.045	Natural, clean, winding, cobble	0.080	Medium brush - summer
	Reach 1	1266	0.080	Medium brush - summer	0.045	Natural, clean, winding, cobble	0.080	Medium brush - summer
	Reach 1	1270	0.080	Medium brush - summer	0.045	Natural, clean, winding, cobble	0.080	Medium brush - summer
	Reach 1	1271	0.080	Medium brush - summer	0.045	Natural, clean, winding, cobble	0.080	Medium brush - summer
	Reach 1	1275	0.080	Medium brush - summer	0.045	Natural, clean, winding, cobble	0.080	Medium brush - summer
	Reach 1	1280	0.080	Medium brush - summer	0.045	Natural, clean, winding, cobble	0.060	Light brush - summer
	Reach 1	1285	0.060	Light brush - summer	0.045	Natural, clean, winding, cobble	0.050	Scattered brush
	Reach 1	1288	Spratt Road					
	Reach 1	1290	0.035	High grass	0.040	Natural, clean, winding, cobble	0.035	High grass
	Reach 1	1295	0.045	Scattered brush / high grass	0.030	Natural, clean, straight, sand	0.035	High grass
	Reach 1	1300	0.050	Scattered brush	0.040	Natural, clean, winding, sand	0.050	Scattered brush
	Reach 1	1305	0.050	Scattered brush	0.030	Natural, clean, straight, silt	0.050	Scattered brush
	Reach 1	1310	0.050	Scattered brush	0.045	Natural, clean, winding, cobble	0.050	Scattered brush
	Reach 1	1315	0.060	Light brush - summer	0.040	Natural, clean, winding, clay	0.060	Light brush - summer
	Reach 1	1320	0.080	Medium brush - summer	0.040	Natural, clean, winding, clay	0.080	Medium brush - summer
	Reach 1	1325	0.080	Medium brush - summer	0.030	Natural, clean, straight, clay	0.080	Medium brush - summer
	Reach 1	1330	0.060	Light brush - summer	0.040	Natural, clean, winding, clay	0.060	Light brush - summer
	Reach 1	1335	0.050	Scattered brush	0.045	Natural, clean, winding, cobble	0.050	Scattered brush
	Reach 1	1340	0.050	Scattered brush	0.045	Natural, clean, winding, cobble	0.035	High grass
	Reach 1	1345	0.050	Scattered brush	0.045	Natural, clean, winding, cobble	0.035	High grass
	Reach 1	1350	0.050	Scattered brush	0.045	Natural, clean, winding, gravel	0.035	High grass
	Reach 1	1355	0.050	Scattered brush	0.030	Natural, clean, straight, sand	0.035	High grass
	Reach 1	1358	Limebank Road					
	Reach 1	1360	0.035	High grass	0.030	Natural, clean, straight, sand	0.035	High grass
	Reach 1	1365	0.080	Medium brush - summer	0.030	Natural, clean, straight, sand	0.080	Medium brush - summer
	Reach 1	1370	0.080	Medium brush - summer	0.040	Natural, clean, winding, sand	0.080	Medium brush - summer
	Reach 1	1375	0.080	Medium brush - summer	0.040	Natural, clean, winding, clay	0.070	Light / medium brush
	Reach 1	1380	0.080	Medium brush - summer	0.030	Natural, clean, straight, clay	0.080	Medium brush - summer
	Reach 1	1385	0.060	Light brush - summer	0.030	Natural, clean, straight, clay	0.070	Light / medium brush
	Reach 1	1390	0.060	Light brush - summer	0.040	Natural, clean, winding, clay	0.080	Medium brush - summer
	Reach 1	1395	0.080	Medium brush - summer	0.040	Natural, clean, winding, clay	0.080	Medium brush - summer
	Reach 1	1400	0.080	Medium brush - summer	0.030	Natural, clean, straight, clay	0.080	Medium brush - summer
	Reach 1	1405	0.080	Medium brush - summer	0.045	Natural, clean, winding, cobble	0.070	Light / medium brush
	Reach 1	1410	0.050	Scattered brush	0.035	Natural, clean, straight, cobble	0.050	Scattered brush
	Reach 1	1415	0.050	Scattered brush	0.040	Natural, clean, winding, clay	0.050	Scattered brush
	Reach 1	1420	0.050	Scattered brush	0.035	Natural, clean, straight, cobble	0.050	Scattered brush

River	Reach	Xsec ID #	Left Bank		Channel		Right Bank	
			n	Description	n	Description	n	Description
Mosquito Creek	Reach 1	1425	0.035	High grass	0.035	Natural, clean, straight, cobble	0.035	High grass
	Reach 1	1428	Earl Armstrong Road					
	Reach 1	1430	0.035	High grass	0.035	Natural, clean, straight, cobble	0.035	High grass
	Reach 1	1435	0.035	High grass	0.035	Natural, clean, straight, cobble	0.050	Scattered brush
	Reach 1	1440	0.050	Scattered brush	0.035	Natural, clean, straight, cobble	0.050	Scattered brush
	Reach 1	1445	0.050	Scattered brush	0.045	Natural, clean, winding, cobble	0.050	Scattered brush
	Reach 1	1450	0.050	Scattered brush	0.045	Natural, clean, winding, cobble	0.050	Scattered brush
	Reach 1	1455	0.080	Medium brush / row crops	0.045	Natural, clean, winding, cobble	0.050	Scattered brush
	Reach 1	1456	0.080	Medium brush / row crops	0.045	Natural, clean, winding, cobble	0.050	Scattered brush
	Reach 1	1460	0.060	Light brush - summer	0.045	Natural, clean, winding, cobble	0.050	Scattered brush
	Reach 1	1461	0.050	Scattered brush	0.045	Natural, clean, winding, cobble	0.050	Scattered brush
	Reach 1	1465	0.050	Scattered brush	0.045	Natural, clean, winding, cobble	0.050	Scattered brush
	Reach 1	1470	0.050	Scattered brush	0.040	Natural, clean, winding, silt	0.050	Scattered brush
	Reach 1	1475	0.053	Scattered brush / row crops	0.040	Natural, clean, winding, silt	0.050	Scattered brush
	Reach 1	1480	0.053	Scattered brush / row crops	0.030	Natural, clean, straight, sand	0.050	Scattered brush
	Reach 1	1485	0.053	Scattered brush / row crops	0.030	Natural, clean, straight, sand	0.050	Scattered brush
	Reach 1	1490	0.050	Scattered brush	0.030	Natural, clean, straight, sand	0.050	Scattered brush
	Reach 1	1495	0.052	Scattered brush / row crops	0.030	Natural, clean, straight, sand	0.050	Scattered brush
	Reach 1	1500	0.051	Scattered brush / row crops	0.030	Natural, clean, straight, sand	0.060	Light brush - summer
	Reach 1	1505	0.060	Light brush / row crops	0.040	Natural, clean, winding, sand	0.078	Medium brush / row crops
	Reach 1	1510	0.078	Medium brush / row crops	0.040	Natural, clean, winding, sand	0.078	Medium brush / row crops
	Reach 1	1515	0.080	Medium brush - summer	0.040	Natural, clean, winding, sand	0.078	Medium brush / row crops
	Reach 1	1520	0.080	Medium brush - summer	0.040	Natural, clean, winding, sand	0.080	Medium brush - summer
	Reach 1	1525	0.080	Medium brush - summer	0.045	Natural, clean, winding, gravel	0.080	Medium brush - summer
	Reach 1	1530	0.060	Light brush - summer	0.040	Natural, clean, winding, clay	0.060	Light brush - summer
	Reach 1	1535	0.060	Light brush - summer	0.040	Natural, clean, winding, clay	0.060	Light brush - summer
	Reach 1	1540	0.050	Scattered brush	0.040	Natural, clean, winding, clay	0.060	Light brush - summer
	Reach 1	1545	0.050	Scattered brush	0.040	Natural, clean, winding, clay	0.060	Light brush - summer
	Reach 1	1550	0.060	Light brush / row crops	0.040	Natural, clean, winding, clay	0.060	Light brush / row crops
	Reach 1	1555	0.060	Light brush / row crops	0.040	Natural, clean, winding, clay	0.075	Medium brush / row crops
	Reach 1	1560	0.060	Light brush / row crops	0.040	Natural, clean, winding, clay	0.060	Light brush / row crops
	Reach 1	1565	0.070	Medium brush / row crops	0.030	Natural, clean, straight, sand	0.070	Medium brush / row crops
	Reach 1	1570	0.070	Medium brush / row crops	0.030	Natural, clean, straight, sand	0.070	Medium brush / row crops
	Reach 1	1575	0.035	High grass	0.040	Natural, clean, winding, sand	0.035	High grass
	Reach 1	1580	0.075	Medium brush / row crops	0.040	Natural, clean, winding, sand	0.075	Medium brush / row crops
	Reach 1	1585	0.058	Scattered brush / row crops	0.040	Natural, clean, winding, sand	0.073	Medium brush / row crops
	Reach 1	1590	0.060	Light brush / row crops	0.040	Natural, clean, winding, clay	0.060	Light brush / row crops
	Reach 1	1595	0.060	Light brush / row crops	0.040	Natural, clean, winding, clay	0.075	Medium brush / row crops
	Reach 1	1600	0.060	Light brush / row crops	0.040	Natural, clean, winding, clay	0.072	Medium brush / row crops
	Reach 1	1605	0.060	Light brush / row crops	0.040	Natural, clean, winding, clay	0.060	Light brush / row crops
	Reach 1	1610	0.072	Medium brush / row crops	0.040	Natural, clean, winding, clay	0.060	Light brush / row crops
	Reach 1	1615	0.070	Medium brush / row crops	0.040	Natural, clean, winding, clay	0.075	Medium brush / row crops
	Reach 1	1620	0.060	Light brush / row crops	0.040	Natural, clean, winding, clay	0.055	Scattered brush / row crops
	Reach 1	1625	0.055	Scattered brush / row crops	0.030	Natural, clean, straight, clay	0.055	Scattered brush / row crops
	Reach 1	1630	0.055	Scattered brush / row crops	0.030	Natural, clean, straight, clay	0.055	Scattered brush / row crops
Tributary A	Reach 1	2100	0.035	High grass	0.027	Dredged, straight, grass	0.035	High grass
	Reach 1	2105	0.035	High grass	0.030	Dredged, winding, grass	0.035	High grass
	Reach 1	2108	Rideau Road (east)					
	Reach 1	2110	0.035	High grass	0.030	Dredged, winding, grass	0.035	High grass
	Reach 1	2115	0.035	High grass	0.027	Dredged, straight, grass	0.035	High grass
	Reach 1	2120	0.065	Medium brush / pasture	0.050	Dredged, light brush	0.060	Light brush
	Reach 1	2125	0.065	Medium brush / pasture	0.050	Dredged, light brush	0.055	Scattered / light brush
	Reach 1	2130	0.070	Medium brush / row crop	0.050	Dredged, light brush	0.055	Scattered / light brush
	Reach 1	2135	0.080	Medium brush - summer	0.050	Dredged, light brush	0.065	Scattered / medium brush
	Reach 1	2140	0.070	Light / medium brush	0.030	Dredged, winding, grass	0.060	Light brush / row crop
	Reach 1	2145	0.070	Light / medium brush	0.030	Dredged, winding, grass	0.060	Light brush / row crop
	Reach 1	2150	0.080	Medium brush - summer	0.030	Dredged, winding, grass	0.055	Scattered / light brush
	Reach 1	2155	0.068	Scattered / medium brush	0.030	Dredged, winding, grass	0.055	Scattered / light brush
	Reach 1	2160	0.068	Scattered / medium brush	0.030	Dredged, winding, grass	0.055	Scattered / light brush
	Reach 1	2165	0.070	Scattered / medium brush	0.030	Dredged, winding, grass	0.055	Scattered / light brush
	Reach 1	2170	0.055	Scattered / light brush	0.030	Dredged, winding, grass	0.055	Scattered / light brush
	Reach 1	2175	0.070	Scattered / medium brush	0.030	Dredged, winding, grass	0.055	Scattered / light brush
	Reach 1	2180	0.080	Medium brush - summer	0.030	Dredged, winding, grass	0.070	Scattered / medium brush
	Reach 1	2185	0.070	Scattered / medium brush	0.030	Dredged, winding, grass	0.068	Scattered / medium brush
	Reach 1	2190	0.080	Medium brush - summer	0.030	Dredged, winding, grass	0.055	Scattered / light brush
	Reach 1	2195	0.065	Medium brush / pasture	0.030	Dredged, winding, grass	0.055	Scattered / light brush
	Reach 1	2200	0.080	Medium brush - summer	0.030	Dredged, winding, grass	0.065	Scattered / medium brush
	Reach 1	2205	0.055	Scattered / light brush	0.030	Dredged, winding, grass	0.065	Scattered / medium brush
	Reach 1	2210	0.070	Scattered / medium brush	0.030	Dredged, winding, grass	0.055	Scattered / light brush
	Reach 1	2215	0.055	Scattered / light brush	0.027	Dredged, straight, grass	0.055	Scattered / light brush
	Reach 1	2220	0.072	Scattered / medium brush	0.027	Dredged, straight, grass	0.072	Scattered / medium brush
	Reach 1	2223	Osgoode Link Pathway					
	Reach 1	2225	0.060	Light brush - summer	0.027	Dredged, straight, grass	0.060	Light brush - summer
	Reach 1	2230	0.080	Medium brush - summer	0.027	Dredged, straight, grass	0.080	Medium brush - summer
	Reach 1	2235	0.073	Scattered / medium brush	0.027	Dredged, straight, grass	0.055	Scattered / light brush
	Reach 1	2240	0.055	Scattered / light brush	0.027	Dredged, straight, grass	0.055	Scattered / light brush

River	Reach	Xsec ID #	Left Bank		Channel		Right Bank	
			n	Description	n	Description	n	Description
Tributary A	Reach 1	2245	0.070	Scattered / medium brush	0.027	Dredged, straight, grass	0.055	Scattered / light brush
	Reach 1	2250	0.050	Scattered brush	0.027	Dredged, straight, grass	0.050	Scattered brush
	Reach 1	2253	Bowesville Road					
	Reach 1	2255	0.035	High grass	0.027	Dredged, straight, grass	0.035	High grass
	Reach 1	2260	0.040	Scattered brush / short grass	0.027	Dredged, straight, grass	0.033	High / Short grass
	Reach 1	2265	0.040	Scattered brush / short grass	0.027	Dredged, straight, grass	0.070	Medium brush / short grass
	Reach 1	2270	0.080	Medium brush - summer	0.027	Dredged, straight, grass	0.080	Medium brush - summer
	Reach 1	2275	0.040	Scattered brush / short grass	0.027	Dredged, straight, grass	0.073	Scattered / medium brush
Tributary B	Reach 1	3100	0.055	Scattered brush / row crop	0.027	Dredged, straight, grass	0.035	High grass
	Reach 1	3105	0.035	High grass	0.030	Dredged, winding, grass	0.035	High grass
	Reach 1	3108	Rideau Road (west)					
	Reach 1	3110	0.035	High grass	0.027	Dredged, straight, grass	0.035	High grass
	Reach 1	3115	0.035	High grass	0.030	Dredged, winding, grass	0.035	High grass
	Reach 1	3120	0.060	Light brush / row crop	0.027	Dredged, straight, grass	0.045	Scattered brush / high grass
	Reach 1	3125	0.060	Light brush / row crop	0.030	Dredged, winding, grass	0.055	Scattered brush / row crop
	Reach 1	3130	0.060	Light brush / row crop	0.027	Dredged, straight, grass	0.058	Scattered brush / row crop
	Reach 1	3135	0.068	Medium brush / row crop	0.027	Dredged, straight, grass	0.060	Light brush / row crop
	Reach 1	3140	0.070	Medium brush / row crop	0.027	Dredged, straight, grass	0.058	Scattered brush / row crop
	Reach 1	3145	0.070	Medium brush / row crop	0.027	Dredged, straight, grass	0.058	Scattered brush / row crop
	Reach 1	3148	Lot 26 Farm Access					
	Reach 1	3150	0.080	Medium brush - summer	0.030	Dredged, winding, grass	0.080	Medium brush - summer
	Reach 1	3155	0.060	Row crop - Mature	0.030	Dredged, winding, grass	0.058	Scattered brush / row crop
	Reach 1	3160	0.070	Medium brush / row crop	0.030	Dredged, winding, grass	0.055	High grass / row crop
	Reach 1	3163	Lot 27 Farm Access					
	Reach 1	3165	0.060	Row crop - Mature	0.030	Dredged, winding, grass	0.058	Scattered brush / row crop
	Reach 1	3170	0.058	Light brush / row crop	0.030	Dredged, winding, grass	0.058	Scattered brush / row crop
	Reach 1	3175	0.070	Medium brush / row crop	0.030	Dredged, winding, grass	0.058	Scattered brush / row crop
	Reach 1	3180	0.058	Scattered brush / row crop	0.030	Dredged, winding, grass	0.050	Scattered brush
	Reach 1	3183	Downey Road					
	Reach 1	3185	0.035	High grass	0.027	Dredged, straight, grass	0.035	High grass
	Reach 1	3190	0.035	High grass	0.027	Dredged, straight, grass	0.033	Short / high grass
	Reach 1	3195	0.035	High grass	0.027	Dredged, straight, grass	0.045	Scattered brush / short grass
	Reach 1	3200	0.068	Medium brush / short grass	0.027	Dredged, straight, grass	0.068	Scattered / medium brush
	Reach 1	3205	0.045	Scattered brush / short grass	0.027	Dredged, straight, grass	0.050	Scattered brush
	Reach 1	3210	0.055	Scattered brush / row crop	0.027	Dredged, straight, grass	0.050	Scattered brush
	Reach 1	3215	0.058	Scattered brush / row crop	0.027	Dredged, straight, grass	0.050	Scattered brush
	Reach 1	3220	0.060	Row crop - mature	0.027	Dredged, straight, grass	0.058	Scattered brush / row crop
	Reach 1	3225	0.075	Med brush / row crop	0.027	Dredged, straight, grass	0.073	Med brush / row crop

Table B2 HEC-RAS Detailed Output

HEC-RAS Plan: V22 Profile: 100-yr

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)	
Mosquito Creek	Reach 1	1100	100-yr	138.75	75.56	78.79	77.92	78.94	0.001001	1.99	116.96	94.50	0.39
Mosquito Creek	Reach 1	1105	100-yr	138.75	75.56	78.93		79.01	0.000999	1.45	126.90	82.05	0.29
Mosquito Creek	Reach 1	1110	100-yr	138.75	75.56	78.99	78.40	79.12	0.001109	1.92	120.95	96.12	0.39
Mosquito Creek	Reach 1	1111	100-yr	138.75	75.56	79.03		79.19	0.001051	2.04	116.71	88.98	0.39
Mosquito Creek	Reach 1	1115	100-yr	138.75	75.56	79.06		79.24	0.001280	2.12	134.55	113.65	0.43
Mosquito Creek	Reach 1	1116	100-yr	138.75	75.56	79.17	78.56	79.30	0.000981	2.00	169.53	122.46	0.38
Mosquito Creek	Reach 1	1120	100-yr	138.75	75.56	79.15		79.42	0.003932	2.63	72.55	52.01	0.54
Mosquito Creek	Reach 1	1125	100-yr	138.75	75.56	79.02	78.79	79.80	0.005684	3.92	35.53	17.97	0.85
Mosquito Creek	Reach 1	1130	100-yr	138.75	75.56	79.84	78.63	80.04	0.001003	2.10	89.51	62.78	0.39
Mosquito Creek	Reach 1	1135	100-yr	138.75	75.56	79.88	78.38	80.07	0.000779	2.01	90.04	68.36	0.35
Mosquito Creek	Reach 1	1138		Bridge									
Mosquito Creek	Reach 1	1140	100-yr	138.75	75.96	80.43	79.10	80.50	0.000324	1.30	140.00	131.91	0.23
Mosquito Creek	Reach 1	1145	100-yr	138.75	75.96	80.43		80.53	0.000524	1.64	165.86	90.93	0.29
Mosquito Creek	Reach 1	1150	100-yr	138.75	75.97	80.40		80.57	0.000907	2.20	136.34	79.22	0.37
Mosquito Creek	Reach 1	1155	100-yr	138.75	75.98	80.51		80.62	0.000560	1.76	131.98	59.72	0.30
Mosquito Creek	Reach 1	1160	100-yr	138.75	75.99	80.49	79.36	80.69	0.000943	2.19	87.74	72.52	0.38
Mosquito Creek	Reach 1	1165	100-yr	138.75	75.99	80.40	79.28	80.80	0.001589	2.96	57.02	67.29	0.49
Mosquito Creek	Reach 1	1168		Culvert									
Mosquito Creek	Reach 1	1170	100-yr	138.75	76.18	83.21	79.37	83.22	0.000040	0.67	294.24	100.22	0.08
Mosquito Creek	Reach 1	1175	100-yr	138.75	76.17	83.21	78.93	83.22	0.000027	0.55	385.54	106.29	0.07
Mosquito Creek	Reach 1	1180	100-yr	138.75	76.18	83.22		83.22	0.000021	0.49	470.92	102.07	0.06
Mosquito Creek	Reach 1	1185	100-yr	138.75	76.18	83.22		83.23	0.000031	0.59	404.20	93.79	0.08
Mosquito Creek	Reach 1	1190	100-yr	138.75	76.48	83.22		83.23	0.000026	0.54	490.78	122.40	0.07
Mosquito Creek	Reach 1	1195	100-yr	76.61	76.45	83.22		83.23	0.000019	0.45	273.77	66.34	0.06
Mosquito Creek	Reach 1	1200	100-yr	76.61	76.49	83.22		83.23	0.000041	0.48	286.42	73.89	0.06
Mosquito Creek	Reach 1	1205	100-yr	76.61	76.55	83.23		83.23	0.000038	0.46	277.28	73.20	0.06
Mosquito Creek	Reach 1	1210	100-yr	76.61	76.54	83.22		83.24	0.000043	0.64	188.94	52.39	0.09
Mosquito Creek	Reach 1	1215	100-yr	76.61	76.62	83.24		83.24	0.000033	0.44	288.50	73.19	0.06
Mosquito Creek	Reach 1	1220	100-yr	76.61	76.76	83.24		83.25	0.000065	0.59	218.39	60.73	0.08
Mosquito Creek	Reach 1	1225	100-yr	76.61	77.05	83.25		83.26	0.000043	0.47	300.71	92.20	0.07
Mosquito Creek	Reach 1	1230	100-yr	76.61	77.19	83.26		83.27	0.000078	0.62	206.94	67.09	0.09
Mosquito Creek	Reach 1	1235	100-yr	76.61	77.40	83.26		83.28	0.000089	0.58	222.48	81.24	0.09
Mosquito Creek	Reach 1	1240	100-yr	76.61	77.58	83.27		83.28	0.000074	0.54	244.31	96.46	0.08
Mosquito Creek	Reach 1	1245	100-yr	76.61	77.64	83.28		83.29	0.000091	0.59	243.66	100.48	0.09
Mosquito Creek	Reach 1	1250	100-yr	76.61	77.99	83.29		83.30	0.000133	0.68	176.01	71.05	0.11
Mosquito Creek	Reach 1	1255	100-yr	76.61	78.12	83.30		83.33	0.000231	0.88	150.59	58.58	0.14
Mosquito Creek	Reach 1	1260	100-yr	76.61	79.84	83.33		83.37	0.000462	1.00	128.14	85.40	0.20
Mosquito Creek	Reach 1	1261	100-yr	76.61	80.58	83.26		83.44	0.002765	2.33	58.52	38.50	0.48
Mosquito Creek	Reach 1	1265	100-yr	76.61	80.73	83.39		83.59	0.003440	2.22	50.02	33.35	0.47
Mosquito Creek	Reach 1	1266	100-yr	76.61	80.83	83.55		83.71	0.003722	2.30	64.89	56.64	0.48
Mosquito Creek	Reach 1	1270	100-yr	76.61	81.29	83.48	83.48	83.96	0.014637	3.57	36.12	48.63	0.90
Mosquito Creek	Reach 1	1271	100-yr	76.61	81.47	84.07		84.24	0.004024	2.39	61.31	47.63	0.50
Mosquito Creek	Reach 1	1275	100-yr	76.61	81.64	84.12	83.86	84.41	0.006323	2.78	43.08	45.02	0.62
Mosquito Creek	Reach 1	1280	100-yr	76.61	81.80	84.52		84.68	0.003690	2.10	53.21	38.93	0.47
Mosquito Creek	Reach 1	1285	100-yr	76.61	81.99	84.60	84.19	84.88	0.005439	2.61	39.31	47.55	0.58
Mosquito Creek	Reach 1	1288		Culvert									
Mosquito Creek	Reach 1	1290	100-yr	76.61	82.18	88.03	84.82	88.04	0.000029	0.40	256.17	94.68	0.06
Mosquito Creek	Reach 1	1295	100-yr	76.61	82.41	88.03		88.04	0.000021	0.44	276.53	71.90	0.06
Mosquito Creek	Reach 1	1300	100-yr	76.61	82.35	88.03		88.04	0.000036	0.43	254.96	71.48	0.06
Mosquito Creek	Reach 1	1305	100-yr	76.61	82.37	88.04		88.04	0.000017	0.39	327.73	85.29	0.06
Mosquito Creek	Reach 1	1310	100-yr	42.02	82.48	88.04		88.04	0.000021	0.29	174.59	49.46	0.04
Mosquito Creek	Reach 1	1315	100-yr	42.02	82.87	88.04		88.04	0.000031	0.37	157.23	48.31	0.06
Mosquito Creek	Reach 1	1320	100-yr	42.02	83.00	88.04		88.05	0.000018	0.28	249.95	72.98	0.04
Mosquito Creek	Reach 1	1325	100-yr	42.02	83.05	88.04		88.05	0.000033	0.50	183.97	58.35	0.07
Mosquito Creek	Reach 1	1330	100-yr	42.02	83.37	88.05		88.05	0.000019	0.28	269.67	97.48	0.04
Mosquito Creek	Reach 1	1335	100-yr	42.02	83.76	88.05		88.05	0.000036	0.31	173.49	64.38	0.05
Mosquito Creek	Reach 1	1340	100-yr	42.02	84.39	87.99		88.09	0.001050	1.53	32.50	15.03	0.27
Mosquito Creek	Reach 1	1345	100-yr	42.02	84.43	88.09		88.12	0.000328	0.86	59.13	28.01	0.15
Mosquito Creek	Reach 1	1350	100-yr	42.02	84.57	88.12	86.12	88.12	0.000045	0.31	162.26	74.64	0.06
Mosquito Creek	Reach 1	1355	100-yr	42.02	84.50	88.12	86.10	88.13	0.000070	0.58	103.76	65.00	0.10
Mosquito Creek	Reach 1	1358		Bridge									
Mosquito Creek	Reach 1	1360	100-yr	42.02	84.02	88.16	85.61	88.16	0.000028	0.35	161.90	112.31	0.07
Mosquito Creek	Reach 1	1365	100-yr	42.02	84.15	88.15	85.99	88.16	0.000055	0.51	192.55	99.72	0.09
Mosquito Creek	Reach 1	1370	100-yr	42.02	84.15	88.16		88.17	0.000158	0.63	119.16	56.76	0.11
Mosquito Creek	Reach 1	1375	100-yr	42.02	84.44	88.17	86.26	88.18	0.000099	0.50	152.53	76.88	0.09
Mosquito Creek	Reach 1	1380	100-yr	42.02	84.43	88.17	86.42	88.19	0.000150	0.80	103.08	51.07	0.15
Mosquito Creek	Reach 1	1385	100-yr	42.02	84.34	88.19	86.37	88.20	0.000080	0.56	132.82	66.54	0.11
Mosquito Creek	Reach 1	1390	100-yr	42.02	84.43	88.19		88.21	0.000236	0.76	81.65	43.75	0.14
Mosquito Creek	Reach 1	1395	100-yr	42.02	84.57	88.21	86.23	88.22	0.000151	0.60	122.65	61.78	0.11
Mosquito Creek	Reach 1	1400	100-yr	42.02	84.54	88.20		88.24	0.000279	1.02	81.83	48.61	0.20
Mosquito Creek	Reach 1	1405	100-yr	42.02	84.82	88.25	86.96	88.26	0.000250	0.61	130.21	92.81	0.12
Mosquito Creek	Reach 1	1410	100-yr	42.02	84.79	88.25		88.28	0.000318	0.89	67.14	43.11	0.18
Mosquito Creek	Reach 1	1415	100-yr	42.02	84.82	88.30		88.31	0.000223	0.63	130.82	137.44	0.13
Mosquito Creek	Reach 1	1420	100-yr	41.05	85.40	88.31	87.15	88.33	0.000326	0.85	85.64	89.31	0.18
Mosquito Creek	Reach 1	1425	100-yr	41.05	85.77	88.20	87.58	88.52	0.003059	2.51	16.69	35.99	0.56
Mosquito Creek	Reach 1	1428		Culvert									
Mosquito Creek	Reach 1	1430	100-yr	41.05	85.68	90.30	87.66	90.34	0.000184	0.96	44.89	57.67	0.15
Mosquito Creek	Reach 1	1435	100-yr	41.05	85.94	90.34	87.97	90.35	0.000074	0.56	108.92	52.28	0.09
Mosquito Creek	Reach 1	1440	100-yr	41.05	86.37	90.34		90.36	0.000127	0.70	91.55	48.53	0.12
Mosquito Creek	Reach 1	1445	100-yr	41.05	86.74	90.34		90.38	0.000569	1.06	56.33	43.66	0.19
Mosquito Creek	Reach 1	1450	100-yr	41.05	87.05	90.38	89.01	90.40	0.000432	0.85	70.19	50.24	0.17
Mosquito Creek	Reach 1	1455	100-yr	41.05	87.68	90.40		90.45	0.001030	1.16	46.82	38.99	0.25
Mosquito Creek	Reach 1	1456	100-yr	41.05	88.09	90.41		90.54	0.003290	1.85	29.30	26.24	0.43
Mosquito Creek	Reach 1	1460	100-yr	41.05	88.11	90.54		90.66	0.003035	1.66	29.63	25.72	0.41
Mosquito Creek	Reach 1	1461	100-yr	41.05	88.33	90.66		90.74	0.002122	1.48	36.75	33.44	0.35

HEC-RAS Plan: V22 Profile: 100-yr (Continued)

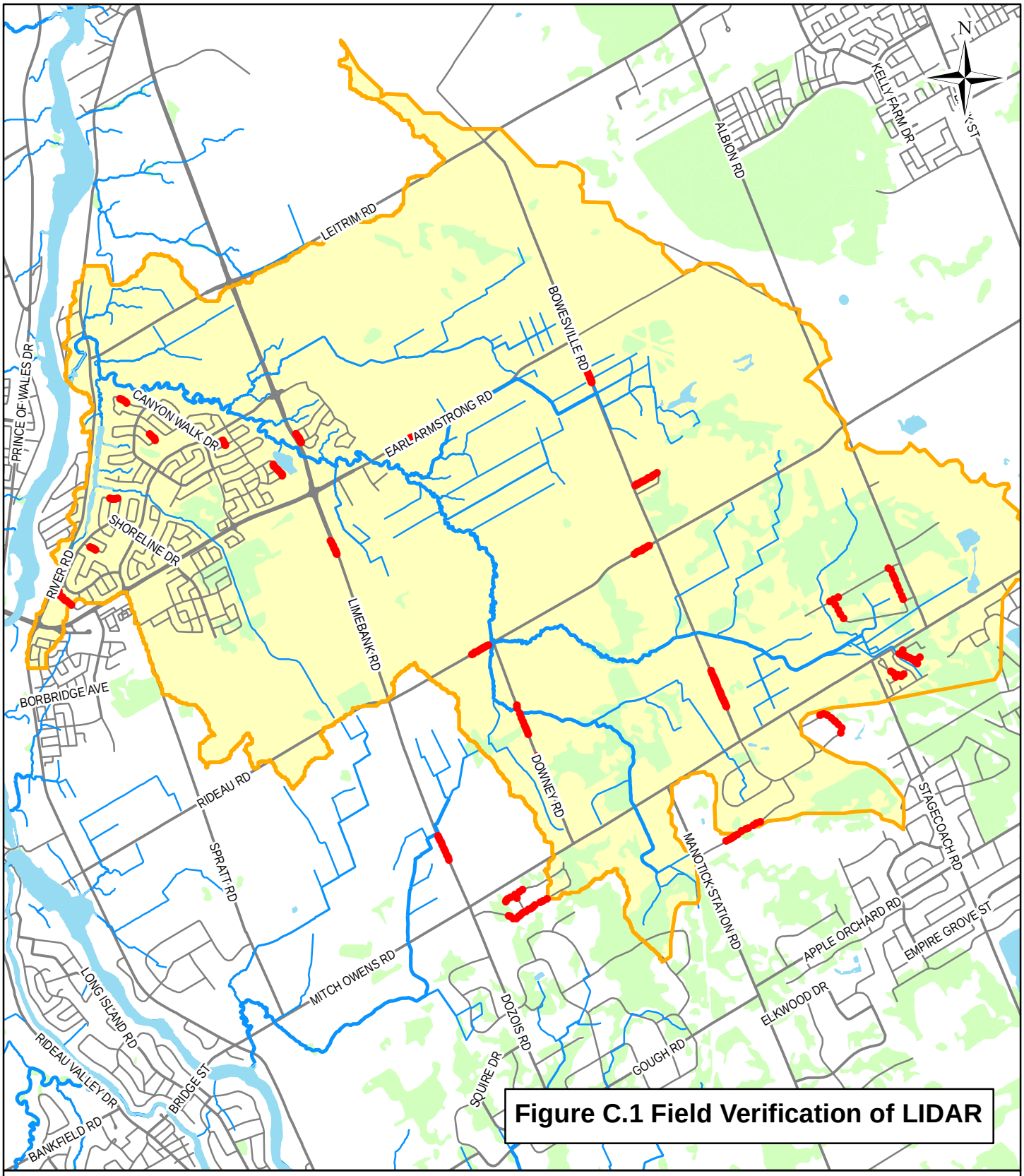
River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Mosquito Creek	Reach 1	1465	100-yr	41.05	88.38	90.73	90.24	90.80	0.001885	1.38	43.31	46.41	0.32
Mosquito Creek	Reach 1	1470	100-yr	41.05	88.41	90.82		90.84	0.000764	1.02	76.44	104.43	0.24
Mosquito Creek	Reach 1	1475	100-yr	41.05	88.39	90.87		90.90	0.000822	0.99	67.81	80.68	0.24
Mosquito Creek	Reach 1	1480	100-yr	41.05	88.47	90.85		90.94	0.001326	1.64	42.07	46.38	0.40
Mosquito Creek	Reach 1	1485	100-yr	41.05	88.38	90.93	90.30	90.97	0.000620	1.21	69.06	85.66	0.28
Mosquito Creek	Reach 1	1490	100-yr	41.05	88.39	90.92		91.01	0.001144	1.54	43.49	49.76	0.37
Mosquito Creek	Reach 1	1495	100-yr	41.05	88.35	91.01		91.09	0.000989	1.37	42.90	42.63	0.35
Mosquito Creek	Reach 1	1500	100-yr	41.05	88.56	91.12	90.53	91.22	0.001236	1.53	41.98	53.22	0.39
Mosquito Creek	Reach 1	1505	100-yr	41.05	88.54	91.33		91.38	0.001290	1.30	58.23	72.24	0.29
Mosquito Creek	Reach 1	1510	100-yr	41.05	88.67	91.38		91.46	0.001494	1.39	52.78	57.42	0.33
Mosquito Creek	Reach 1	1515	100-yr	41.05	88.79	91.57	90.89	91.65	0.001764	1.39	44.18	46.41	0.35
Mosquito Creek	Reach 1	1520	100-yr	41.05	88.91	91.70	90.45	91.75	0.000861	1.11	58.43	76.50	0.25
Mosquito Creek	Reach 1	1525	100-yr	41.05	88.95	91.71		91.80	0.002635	1.58	41.33	43.66	0.38
Mosquito Creek	Reach 1	1530	100-yr	41.05	89.09	91.90	90.92	91.94	0.000886	1.00	58.77	61.69	0.25
Mosquito Creek	Reach 1	1535	100-yr	41.05	89.23	91.98		92.07	0.001834	1.46	40.47	46.46	0.35
Mosquito Creek	Reach 1	1540	100-yr	41.05	89.36	92.13		92.24	0.002155	1.69	37.76	50.92	0.39
Mosquito Creek	Reach 1	1545	100-yr	41.05	89.51	92.31		92.41	0.001537	1.44	34.70	40.68	0.33
Mosquito Creek	Reach 1	1550	100-yr	41.05	89.63	92.48	91.79	92.53	0.001396	1.20	54.92	63.53	0.30
Mosquito Creek	Reach 1	1555	100-yr	41.05	89.72	92.53		92.64	0.001961	1.70	43.05	55.30	0.37
Mosquito Creek	Reach 1	1560	100-yr	41.05	89.85	92.72		92.82	0.001772	1.54	36.68	38.44	0.35
Mosquito Creek	Reach 1	1565	100-yr	41.05	89.94	92.81	91.89	92.89	0.000908	1.40	47.29	43.22	0.33
Mosquito Creek	Reach 1	1570	100-yr	41.05	89.97	92.87		92.91	0.000276	0.92	69.12	63.76	0.20
Mosquito Creek	Reach 1	1575	100-yr	41.05	90.10	92.87		92.92	0.000963	1.16	45.10	49.94	0.27
Mosquito Creek	Reach 1	1580	100-yr	41.05	90.08	92.83		92.96	0.002760	1.78	37.06	45.26	0.43
Mosquito Creek	Reach 1	1585	100-yr	41.05	90.28	93.15		93.25	0.002138	1.61	41.98	61.88	0.38
Mosquito Creek	Reach 1	1590	100-yr	41.05	90.86	93.44		93.51	0.001481	1.38	52.70	88.51	0.33
Mosquito Creek	Reach 1	1595	100-yr	25.33	90.94	93.54		93.56	0.000338	0.74	85.36	126.01	0.16
Mosquito Creek	Reach 1	1600	100-yr	25.33	90.96	93.56		93.58	0.000504	0.80	61.16	98.73	0.19
Mosquito Creek	Reach 1	1605	100-yr	25.33	91.01	93.59	92.57	93.61	0.000632	0.84	51.44	67.07	0.20
Mosquito Creek	Reach 1	1610	100-yr	25.33	91.22	93.63		93.66	0.000433	0.77	49.15	63.69	0.18
Mosquito Creek	Reach 1	1615	100-yr	25.33	91.37	93.66		93.71	0.001192	1.12	40.94	57.37	0.28
Mosquito Creek	Reach 1	1620	100-yr	25.33	91.52	93.76	93.20	93.80	0.001074	1.04	40.78	63.95	0.27
Mosquito Creek	Reach 1	1625	100-yr	25.33	91.67	93.83	93.48	93.90	0.001371	1.45	32.30	44.97	0.39
Mosquito Creek	Reach 1	1630	100-yr	25.33	91.85	93.94	93.36	93.99	0.000738	1.15	38.00	53.15	0.30
Tributary A	Reach 1	2100	100-yr	13.99	91.82	93.94	93.09	94.01	0.000652	1.21	14.20	19.11	0.30
Tributary A	Reach 1	2105	100-yr	13.99	91.81	93.97	92.81	94.02	0.000433	0.96	14.51	23.90	0.23
Tributary A	Reach 1	2108		Culvert									
Tributary A	Reach 1	2110	100-yr	13.99	91.81	94.46	92.95	94.48	0.000144	0.67	23.62	69.44	0.14
Tributary A	Reach 1	2115	100-yr	13.99	91.87	94.48	93.23	94.49	0.000058	0.45	46.89	45.86	0.10
Tributary A	Reach 1	2120	100-yr	13.99	91.98	94.49		94.49	0.000160	0.36	64.91	77.91	0.08
Tributary A	Reach 1	2125	100-yr	13.99	92.00	94.50		94.50	0.000115	0.30	88.40	271.08	0.07
Tributary A	Reach 1	2130	100-yr	13.99	92.18	94.52		94.52	0.000426	0.49	50.44	92.35	0.13
Tributary A	Reach 1	2135	100-yr	13.99	92.67	94.56		94.57	0.000787	0.67	36.76	54.54	0.18
Tributary A	Reach 1	2140	100-yr	13.99	92.75	94.61		94.67	0.001195	1.13	17.17	35.15	0.35
Tributary A	Reach 1	2145	100-yr	13.99	93.43	94.82	94.72	94.97	0.004709	1.97	13.76	41.91	0.68
Tributary A	Reach 1	2150	100-yr	13.99	93.47	95.13		95.17	0.000960	1.11	26.17	55.26	0.33
Tributary A	Reach 1	2155	100-yr	13.99	93.63	95.21	94.89	95.41	0.005265	1.97	8.36	30.10	0.70
Tributary A	Reach 1	2160	100-yr	13.99	93.78	95.58		95.64	0.001448	1.30	20.99	42.42	0.37
Tributary A	Reach 1	2165	100-yr	13.99	93.91	95.71		95.74	0.000988	1.00	30.19	62.60	0.31
Tributary A	Reach 1	2170	100-yr	13.99	94.10	95.83		95.89	0.001335	1.25	19.50	43.92	0.37
Tributary A	Reach 1	2175	100-yr	13.99	94.26	96.00	95.80	96.04	0.001836	1.26	23.00	66.48	0.40
Tributary A	Reach 1	2180	100-yr	13.99	94.38	96.14		96.24	0.003420	1.72	17.20	40.67	0.54
Tributary A	Reach 1	2185	100-yr	13.99	94.55	96.52	96.34	96.59	0.001991	1.48	27.93	83.28	0.40
Tributary A	Reach 1	2190	100-yr	13.99	94.72	96.68	96.04	96.72	0.000819	0.99	23.76	58.07	0.29
Tributary A	Reach 1	2195	100-yr	13.99	94.88	96.81		96.90	0.002397	1.47	16.17	46.39	0.47
Tributary A	Reach 1	2200	100-yr	13.99	95.06	97.03		97.08	0.001165	1.17	30.00	85.87	0.34
Tributary A	Reach 1	2205	100-yr	13.99	95.25	97.16		97.20	0.001064	1.08	25.04	70.00	0.33
Tributary A	Reach 1	2210	100-yr	13.99	95.60	97.39		97.48	0.001774	1.47	18.79	48.76	0.43
Tributary A	Reach 1	2215	100-yr	11.18	95.98	97.62	96.92	97.67	0.000941	1.05	12.21	23.18	0.34
Tributary A	Reach 1	2220	100-yr	11.18	96.11	97.58	97.20	97.74	0.003270	1.77	6.33	13.67	0.61
Tributary A	Reach 1	2223		Culvert									
Tributary A	Reach 1	2225	100-yr	11.18	96.22	98.16	97.37	98.19	0.000422	0.82	14.27	85.61	0.24
Tributary A	Reach 1	2230	100-yr	11.18	96.22	98.15	97.43	98.20	0.000798	1.05	16.03	105.99	0.32
Tributary A	Reach 1	2235	100-yr	11.18	96.31	98.22	97.67	98.23	0.000376	0.75	36.83	84.26	0.22
Tributary A	Reach 1	2240	100-yr	11.18	96.37	98.23	97.76	98.25	0.000395	0.75	31.49	64.58	0.22
Tributary A	Reach 1	2245	100-yr	11.18	96.45	98.24	97.63	98.29	0.000963	1.08	14.31	46.96	0.34
Tributary A	Reach 1	2250	100-yr	11.18	96.61	98.23	97.55	98.32	0.000865	1.28	8.71	26.11	0.35
Tributary A	Reach 1	2253		Culvert									
Tributary A	Reach 1	2255	100-yr	11.18	96.56	98.61	97.72	98.66	0.000540	1.03	11.42	41.00	0.27
Tributary A	Reach 1	2260	100-yr	11.18	96.60	98.64	97.90	98.68	0.000439	0.91	17.48	38.25	0.24
Tributary A	Reach 1	2265	100-yr	11.18	96.59	98.65	97.80	98.69	0.000577	0.96	16.63	30.39	0.27
Tributary A	Reach 1	2270	100-yr	11.18	96.65	98.69		98.72	0.000568	0.87	26.17	62.22	0.27
Tributary A	Reach 1	2275	100-yr	11.18	96.76	98.74		98.79	0.000895	1.04	14.54	38.24	0.33
Tributary B	Reach 1	3100	100-yr	11.72	91.89	93.98	93.24	94.00	0.000296	0.77	24.36	38.34	0.20
Tributary B	Reach 1	3105	100-yr	11.72	91.90	93.98	92.99	94.01	0.000354	0.83	15.28	42.74	0.21
Tributary B	Reach 1	3108		Culvert									
Tributary B	Reach 1	3110	100-yr	11.72	91.88	94.93	93.01	94.93	0.000007	0.18	104.52	62.80	0.04
Tributary B	Reach 1	3115	100-yr	11.72	92.00	94.93	93.22	94.93	0.000018	0.24	66.97	38.12	0.05
Tributary B	Reach 1	3120	100-yr	11.72	92.08	94.93	93.21	94.93	0.000019	0.27	97.29	108.62	0.06
Tributary B	Reach 1	3125	100-yr	11.72	92.10	94.93	93.51	94.94	0.000028	0.26	119.26	162.09	0.06
Tributary B	Reach 1	3130	100-yr	11.72	92.18	94.94	93.47	94.94	0.000019	0.25	147.02	178.78	0.05
Tributary B	Reach 1	3135	100-yr	11.72	92.26	94.94	93.68	94.94	0.000036	0.35	114.54	147.26	0.07
Tributary B	Reach 1	3140	100-yr	11.72	92.31	94.94	93.78	94.94	0.000028	0.26	143.17	201.61	0.06
Tributary B	Reach 1	3145	100-yr	11.72	92.33	94.94	93.61	94.94	0.000026	0.27	154.50	232.48	0.06
Tributary B	Reach 1	3148		Culvert									

HEC-RAS Plan: V22 Profile: 100-yr (Continued)

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)	
Tributary B	Reach 1	3150	100-yr	11.72	92.30	94.94	93.58	94.94	0.000033	0.28	155.58	235.53	0.07
Tributary B	Reach 1	3155	100-yr	11.72	92.47	94.95		94.95	0.000047	0.28	117.86	206.38	0.07
Tributary B	Reach 1	3160	100-yr	11.72	92.68	94.95	94.43	94.95	0.000105	0.36	80.57	137.31	0.10
Tributary B	Reach 1	3163		Culvert									
Tributary B	Reach 1	3165	100-yr	11.72	92.69	94.95	94.09	94.96	0.000110	0.39	78.59	139.09	0.11
Tributary B	Reach 1	3170	100-yr	11.72	92.77	94.96	94.33	94.97	0.000178	0.49	74.38	190.20	0.13
Tributary B	Reach 1	3175	100-yr	11.72	92.94	94.98	94.45	95.02	0.000966	1.11	21.62	70.80	0.31
Tributary B	Reach 1	3180	100-yr	11.72	92.96	94.99	94.16	95.04	0.000775	1.06	13.45	77.99	0.28
Tributary B	Reach 1	3183		Culvert									
Tributary B	Reach 1	3185	100-yr	11.72	93.11	95.36	94.27	95.37	0.000065	0.45	38.25	64.41	0.10
Tributary B	Reach 1	3190	100-yr	11.72	93.20	95.35	94.60	95.39	0.000467	0.98	15.94	66.34	0.25
Tributary B	Reach 1	3195	100-yr	11.72	93.40	95.38	94.70	95.40	0.000295	0.76	31.04	119.67	0.20
Tributary B	Reach 1	3200	100-yr	11.72	93.42	95.38	94.67	95.44	0.000633	1.15	22.55	62.30	0.30
Tributary B	Reach 1	3205	100-yr	11.72	93.50	95.46	94.90	95.48	0.000464	0.80	30.27	99.84	0.24
Tributary B	Reach 1	3210	100-yr	11.72	93.65	95.54	95.09	95.59	0.000944	1.02	20.04	76.87	0.34
Tributary B	Reach 1	3215	100-yr	11.72	93.80	95.63		95.68	0.000891	1.13	19.91	48.43	0.34
Tributary B	Reach 1	3220	100-yr	8.47	94.30	95.77		95.80	0.000699	0.81	26.10	137.72	0.29
Tributary B	Reach 1	3225	100-yr	8.47	94.48	95.90		95.94	0.001235	0.96	15.73	82.80	0.38

Appendix C

Field Verification of LIDAR Data



Rideau Valley Conservation Authority

Trimble Points

Wetlands

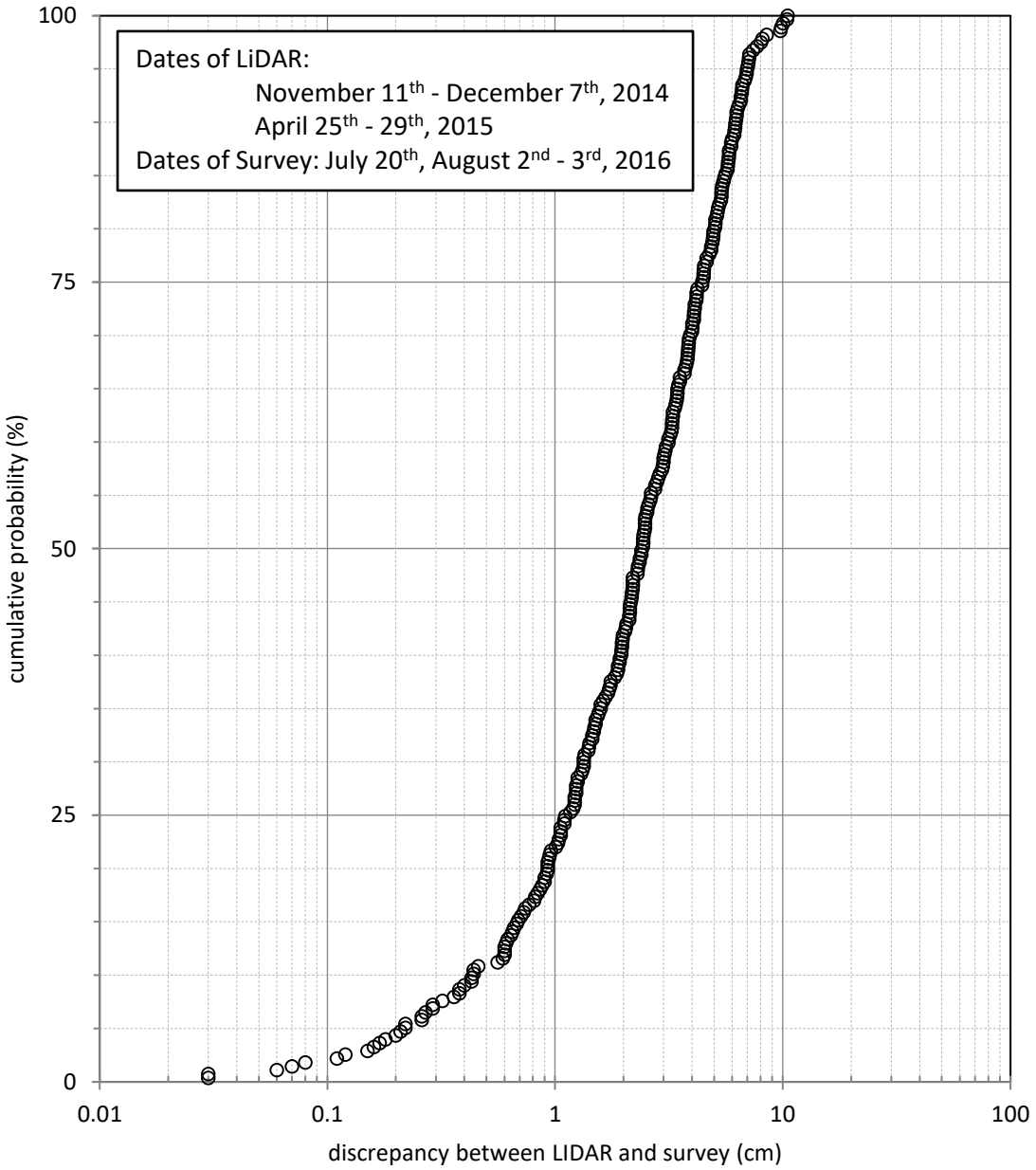
Mosquito Creek

0 0.5 1 2 Kilometers

Map Scale: 1:50,000

Date Modified: 27/Apr/2020

Figure C.2 Field verification of LIDAR data
(Mosquito Creek)



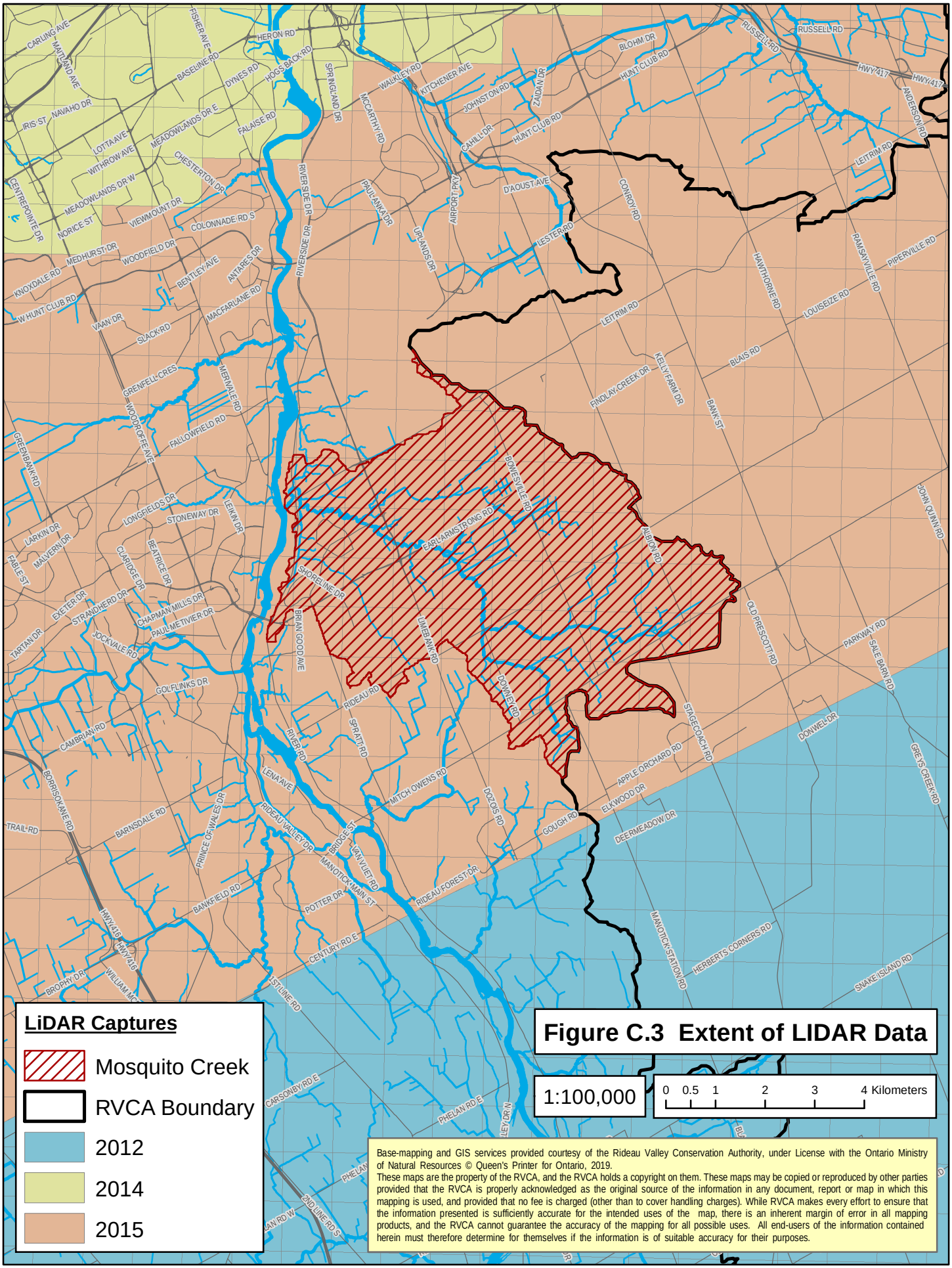

LiDAR Captures
Mosquito Creek
RVCA Boundary
2012
2014
2015
Figure C.3 Extent of LIDAR Data
1:100,000
0 0.5 1 2 3 4 Kilometers
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Table C.1 Field verification of LIDAR data (spot heights)

	RVCA Field Survey (July 20, August 2 and 3, 2016)							Nearest Lidar Point	Comparison		
Location ID	X (m)	Y (m)	Z (m)	Horizontal Accuracy (m)	Veritcal Accuracy (m)	Date/Time	Field Observations	Z (m)	△z (m)	|△z | (cm)	|△z| > 0.33m
mosqutio-spt-1	445329.169	5013345.89	89.135	0.007	0.01	7/20/16 1:10 PM	Road	89.1132	-0.022	2.2	
mosqutio-spt-2	445346.634	5013331.63	89.133	0.01	0.016	7/20/16 1:11 PM	Road	89.111	-0.022	2.2	
mosqutio-spt-3	445364.903	5013316.86	89.011	0.011	0.017	7/20/16 1:11 PM	Road	88.9646	-0.046	4.6	
mosqutio-spt-4	445386.515	5013298.99	89.112	0.012	0.018	7/20/16 1:12 PM	Road	89.0629	-0.049	4.9	
mosqutio-spt-5	445412.243	5013277.91	89.201	0.012	0.02	7/20/16 1:13 PM	Road	89.1428	-0.058	5.8	
mosqutio-spt-6	445325.62	5013349.58	89.132	0.01	0.014	7/20/16 1:15 PM	Road	89.1123	-0.020	2.0	
mosqutio-spt-7	445307.997	5013363.01	89.028	0.011	0.017	7/20/16 1:15 PM	Road	89.0412	0.013	1.3	
mosqutio-spt-8	445288.366	5013380.88	88.911	0.012	0.019	7/20/16 1:16 PM	Road	88.9178	0.007	0.7	
mosqutio-spt-9	445291.268	5013401.44	88.998	0.012	0.019	7/20/16 1:17 PM	Road	88.9385	-0.059	5.9	
mosqutio-spt-10	445294.25	5013409.09	89.04	0.012	0.019	7/20/16 1:18 PM	Road	89	-0.040	4.0	
mosqutio-spt-11	445276.186	5013383.86	89.102	0.012	0.019	7/20/16 1:18 PM	Road	89.0405	-0.061	6.1	
mt-rollingriver1	445634.645	5013801.41	89.562	0.01	0.017	7/20/16 1:27 PM	Road	89.5598	-0.002	0.2	
mt-rollingriver2	445626.635	5013805.66	89.534	0.011	0.018	7/20/16 1:27 PM	Road	89.4939	-0.040	4.0	
mt-rollingriver3	445616.062	5013810.82	89.485	0.012	0.02	7/20/16 1:28 PM	Road	89.4399	-0.045	4.5	
mt-rollingriver4	445601.723	5013818.03	89.293	0.012	0.019	7/20/16 1:28 PM	Road	89.2846	-0.008	0.8	
mt-rollingriver5	445583.542	5013827.03	89.023	0.012	0.018	7/20/16 1:29 PM	Road	89.0537	0.031	3.1	
mt-rainfst1	445805.025	5014274.42	90.134	0.012	0.02	7/20/16 1:36 PM	Road	90.11	-0.024	2.4	
mt-rainfst2	445820.753	5014274.78	90.21	0.012	0.02	7/20/16 1:36 PM	Road	90.1693	-0.041	4.1	
mt-rainfst3	445843.335	5014277.52	90.37	0.012	0.02	7/20/16 1:37 PM	Road	90.3903	0.020	2.0	
mt-rainfst4	445789.73	5014273.77	90.054	0.012	0.02	7/20/16 1:39 PM	Road	90.0867	0.033	3.3	
mt-rainfst5	445773.022	5014277.79	89.963	0.011	0.019	7/20/16 1:40 PM	Road	89.9612	-0.002	0.2	
mt-moutain-1	446144.23	5014879.86	90.782	0.008	0.014	7/20/16 1:48 PM	Road	90.7478	-0.034	3.4	
mt-moutain-2	446157.362	5014869.96	90.89	0.012	0.02	7/20/16 1:49 PM	Road	90.8457	-0.044	4.4	
mt-moutain-3	446171.479	5014857.73	90.982	0.011	0.02	7/20/16 1:50 PM	Road	90.9472	-0.035	3.5	
mt-moutain-4	446189.972	5014842.71	91.09	0.011	0.02	7/20/16 1:52 PM	Road	91.0703	-0.020	2.0	
mt-moutain-5	446193.456	5014825.1	91.232	0.012	0.02	7/20/16 1:53 PM	Road	91.2035	-0.028	2.8	
mt-twinfalls-1	445895.832	5015197.5	89.668	0.01	0.012	7/20/16 1:59 PM	Road	89.631	-0.037	3.7	
mt-twinfalls-2	445915.721	5015185.02	89.539	0.012	0.02	7/20/16 2:01 PM	Road	89.5036	-0.035	3.5	
mt-twinfalls-3	445928.561	5015176.72	89.657	0.015	0.02	7/20/16 2:02 PM	Road	89.6711	0.014	1.4	
mt-twinfalls-4	445882.87	5015204.98	89.765	0.011	0.014	7/20/16 2:03 PM	Road	89.7257	-0.039	3.9	
mt-twinfalls-5	445865.307	5015212.65	89.6	0.012	0.02	7/20/16 2:03 PM	Road	89.5593	-0.041	4.1	
mt-nextpond-1	447344.95	5014545.46	92.229	0.008	0.012	7/20/16 2:14 PM	Road	92.223	-0.006	0.6	
mt-nextpond-2	447356.94	5014533.75	92.101	0.011	0.016	7/20/16 2:15 PM	Road	92.0798	-0.021	2.1	
mt-nextpond-3	447372.767	5014518.07	91.924	0.013	0.018	7/20/16 2:15 PM	Road	91.8895	-0.034	3.4	
mt-nextpond-4	447385.584	5014506.67	91.928	0.013	0.018	7/20/16 2:16 PM	Road	91.95	0.022	2.2	
mt-nextpond-5	447385.414	5014495.17	91.898	0.012	0.018	7/20/16 2:16 PM	Road	91.8997	0.002	0.2	

Table C.1 Field verification of LIDAR data (spot heights)

	RVCA Field Survey (July 20, August 2 and 3, 2016)							Nearest Lidar Point	Comparison		
Location ID	X (m)	Y (m)	Z (m)	Horizontal Accuracy (m)	Veritcal Accuracy (m)	Date/Time	Field Observations	Z (m)	△z (m)	|△z | (cm)	|△z| > 0.33m
mt-nextpond-6	447336.544	5014551.2	92.219	0.013	0.019	7/20/16 2:17 PM	Road	92.2314	0.012	1.2	
mt-nextpond-7	447326.974	5014562.55	92.195	0.013	0.02	7/20/16 2:18 PM	Road	92.1868	-0.008	0.8	
mt-nextpond-8	447314.423	5014579.32	92.04	0.013	0.02	7/20/16 2:18 PM	Road	92.0526	0.013	1.3	
mt-nextpond-9	447306.063	5014588.36	91.988	0.013	0.02	7/20/16 2:19 PM	Road	91.99	0.002	0.2	
mt-nextpond-10	447298.81	5014596.92	91.985	0.013	0.02	7/20/16 2:19 PM	Road	91.9879	0.003	0.3	
mt-greyseal-1	446830.196	5014815.64	92.587	0.012	0.018	7/20/16 2:29 PM	Road	92.5451	-0.042	4.2	
mt-greyseal-2	446835.941	5014805.63	92.521	0.014	0.02	7/20/16 2:30 PM	Road	92.5399	0.019	1.9	
mt-greyseal-3	446841.632	5014795.57	92.508	0.013	0.02	7/20/16 2:31 PM	Road	92.553	0.045	4.5	
mt-greyseal-4	446845.938	5014787.99	92.596	0.013	0.018	7/20/16 2:32 PM	Road	92.634	0.038	3.8	
mt-greyseal-5	446849.879	5014782.27	92.612	0.012	0.018	7/20/16 2:32 PM	Road	92.6395	0.028	2.8	
mt-greyseal-6	446851.01	5014774.61	92.613	0.012	0.017	7/20/16 2:33 PM	Road	92.6281	0.015	1.5	
mt-greyseal-7	446828.322	5014818.73	92.577	0.01	0.014	7/20/16 2:33 PM	Road	92.5773	0.000	0.0	
mt-cooksmill-1	447545.961	5014836.77	92.728	0.01	0.015	7/20/16 2:48 PM	Road	92.7816	0.054	5.4	
mt-cooksmill-2	447539.575	5014844.1	92.616	0.007	0.011	7/20/16 2:48 PM	Road	92.6168	0.001	0.1	
mt-cooksmill-3	447527.621	5014862.87	92.631	0.007	0.01	7/20/16 2:52 PM	Road	92.6693	0.038	3.8	
mt-cooksmill-4	447515.084	5014878.91	92.787	0.016	0.024	7/20/16 2:53 PM	Road	92.8117	0.025	2.5	
mt-cooksmill-5	447515.095	5014878.89	92.781	0.01	0.015	7/20/16 2:53 PM	Road	92.8125	0.031	3.1	
mt-cooksmill-6	447511.063	5014884.93	92.813	0.012	0.018	7/20/16 2:54 PM	Road	92.8342	0.021	2.1	
mt-cooksmill-7	447547.114	5014831.45	92.709	0.011	0.018	7/20/16 2:55 PM	Road	92.7345	0.026	2.6	
mt-cooksmill-8	447550.505	5014824.6	92.76	0.011	0.017	7/20/16 2:56 PM	Road	92.8009	0.041	4.1	
mt-cooksmill-9	447558.45	5014810.84	92.83	0.013	0.019	7/20/16 2:56 PM	Road	92.8654	0.035	3.5	
mt-cooksmill-10	447561.896	5014804.21	92.882	0.012	0.018	7/20/16 2:56 PM	Road	92.9527	0.071	7.1	
sunvista-1	453312.182	5012754.05	102.401	0.006	0.011	8/2/16 8:50 AM	Road	102.4193	0.018	1.8	
sunvista-2	453299.534	5012762.37	102.328	0.008	0.014	8/2/16 8:50 AM	Road	102.3397	0.012	1.2	
sunvista-3	453286.202	5012769.79	102.206	0.009	0.016	8/2/16 8:51 AM	Road	102.22	0.014	1.4	
sunvista-4	453263.482	5012782.08	101.998	0.01	0.017	8/2/16 8:52 AM	Road	102.02	0.022	2.2	
sunvista-5	453242.297	5012794	101.86	0.011	0.019	8/2/16 8:52 AM	Road	101.8789	0.019	1.9	
sunvista-6	453220.704	5012806.1	101.86	0.011	0.019	8/2/16 8:53 AM	Road	101.8844	0.024	2.4	
sunvista-7	453202.265	5012815.36	101.824	0.011	0.019	8/2/16 8:53 AM	Road	101.8453	0.021	2.1	
sunvista-8	453183.192	5012820.65	101.795	0.011	0.019	8/2/16 8:54 AM	Road	101.7744	-0.021	2.1	
sunvista-9	453164.838	5012821.02	101.686	0.011	0.02	8/2/16 8:55 AM	Road	101.6953	0.009	0.9	
sunvista-10	453188.497	5012836.64	101.791	0.012	0.019	8/2/16 8:56 AM	Road	101.8002	0.009	0.9	
sunvista-11	453194.98	5012860.29	101.751	0.011	0.019	8/2/16 8:56 AM	Road	101.8028	0.052	5.2	
sunvista-12	453319.54	5012763.09	102.248	0.012	0.02	8/2/16 8:59 AM	Road	102.26	0.012	1.2	
sunvista-13	453331.84	5012769.97	102.067	0.011	0.02	8/2/16 9:01 AM	Road	102.0627	-0.004	0.4	
sunvista-14	453359.377	5012787.07	102.15	0.012	0.019	8/2/16 9:02 AM	Road	102.1581	0.008	0.8	

Table C.1 Field verification of LIDAR data (spot heights)

	RVCA Field Survey (July 20, August 2 and 3, 2016)							Nearest Lidar Point	Comparison		
Location ID	X (m)	Y (m)	Z (m)	Horizontal Accuracy (m)	Veritcal Accuracy (m)	Date/Time	Field Observations	Z (m)	△Z (m)	|△Z | (cm)	|△Z| > 0.33m
sunvista-15	453330.786	5012734.8	102.445	0.012	0.02	8/2/16 9:04 AM	Road	102.4506	0.006	0.6	
sunvista-16	453205.56	5012633.87	102.545	0.013	0.018	8/2/16 9:10 AM	Road	102.4678	-0.077	7.7	
sunvista-17	453178.067	5012613.85	102.584	0.008	0.014	8/2/16 9:11 AM	Road	102.4854	-0.099	9.9	
sunvista-18	453152.568	5012623.19	102.563	0.011	0.02	8/2/16 9:14 AM	Road	102.4579	-0.105	10.5	
sunvista-19	453129.694	5012606.69	102.448	0.013	0.02	8/2/16 9:16 AM	Road	102.4155	-0.032	3.2	
sunvista-20	453109.444	5012647.67	102.616	0.014	0.02	8/2/16 9:17 AM	Road	102.5536	-0.062	6.2	
sunvista-21	453084.823	5012661.76	102.612	0.012	0.019	8/2/16 9:18 AM	Road	102.5839	-0.028	2.8	
albion masion-1	453142.359	5013476.01	102.885	0.007	0.01	8/2/16 9:32 AM	Road	102.9186	0.034	3.4	
albion masion-2	453126.761	5013514.35	103.11	0.008	0.011	8/2/16 9:33 AM	Road	103.0907	-0.019	1.9	
albion masion-3	453116.871	5013541.49	103.228	0.009	0.013	8/2/16 9:33 AM	Road	103.219	-0.009	0.9	
albion masion-4	453104.456	5013568.79	103.382	0.01	0.015	8/2/16 9:34 AM	Road	103.3556	-0.026	2.6	
albion masion-5	453086.003	5013613.21	103.665	0.011	0.016	8/2/16 9:35 AM	Road	103.6806	0.016	1.6	
albion masion-6	453061.444	5013623.12	103.903	0.011	0.016	8/2/16 9:36 AM	Road	103.9417	0.039	3.9	
albion masion-7	453149.674	5013454.19	102.736	0.013	0.018	8/2/16 9:39 AM	Road	102.7981	0.062	6.2	
albion masion-8	453169.031	5013410.7	102.58	0.013	0.019	8/2/16 9:40 AM	Road	102.6121	0.032	3.2	
albion masion-9	453188.502	5013363.31	102.609	0.013	0.017	8/2/16 9:42 AM	Road	102.6805	0.072	7.2	
albion masion-10	453200.692	5013335.08	102.741	0.013	0.017	8/2/16 9:42 AM	Road	102.7972	0.056	5.6	
albion masion-11	452590.758	5013355.72	102.729	0.009	0.012	8/2/16 10:03 AM	Road	102.72	-0.009	0.9	
albion masion-12	452549.069	5013333.67	102.389	0.012	0.02	8/2/16 10:04 AM	Road	102.3868	-0.002	0.2	
albion masion-13	452515.622	5013314.62	102.411	0.012	0.017	8/2/16 10:05 AM	Road	102.444	0.033	3.3	
albion masion-14	452549.43	5013311.06	102.236	0.012	0.018	8/2/16 10:05 AM	Road	102.1883	-0.048	4.8	
albion masion-15	452567.407	5013279.94	102.011	0.013	0.018	8/2/16 10:06 AM	Road	101.9783	-0.033	3.3	
albion masion-16	452592.222	5013235.48	101.676	0.014	0.02	8/2/16 10:07 AM	Road	101.701	0.025	2.5	
albion masion-17	452614.255	5013194.02	101.452	0.014	0.019	8/2/16 10:08 AM	Road	101.4482	-0.004	0.4	
albion masion-18	452640.804	5013151.83	101.606	0.015	0.02	8/2/16 10:09 AM	Road	101.6446	0.039	3.9	
rickansen-1	452558.222	5012194.85	102.157	0.007	0.009	8/2/16 10:23 AM	Road	102.1182	-0.039	3.9	
rickansen-2	452527.63	5012219.8	102.154	0.008	0.011	8/2/16 10:24 AM	Road	102.1613	0.007	0.7	
rickansen-3	452490.986	5012250.13	102.242	0.013	0.02	8/2/16 10:26 AM	Road	102.19	-0.052	5.2	
rickansen-4	452457.109	5012260.57	102.338	0.014	0.02	8/2/16 10:27 AM	Road	102.344	0.006	0.6	
rickansen-5	452424.331	5012246.49	102.48	0.014	0.02	8/2/16 10:28 AM	Road	102.4904	0.010	1.0	
rickansen-6	452566.894	5012185.69	102.201	0.013	0.02	8/2/16 10:31 AM	Road	102.1665	-0.034	3.4	
rickansen-7	452592.435	5012165.18	102.274	0.013	0.02	8/2/16 10:32 AM	Road	102.2233	-0.051	5.1	
rickansen-8	452623.501	5012128.68	102.378	0.013	0.02	8/2/16 10:34 AM	Road	102.3485	-0.030	3.0	
rickansen-9	452615.654	5012086.36	102.568	0.011	0.017	8/2/16 10:35 AM	Road	102.591	0.023	2.3	
sway-1	451621.772	5011118.2	100.14	0.01	0.015	8/2/16 10:55 AM	Road	100.146	0.006	0.6	
sway-2	451645.738	5011133.99	100.246	0.012	0.019	8/2/16 10:56 AM	Road	100.2955	0.049	4.9	

Table C.1 Field verification of LIDAR data (spot heights)

	RVCA Field Survey (July 20, August 2 and 3, 2016)							Nearest Lidar Point	Comparison		
Location ID	X (m)	Y (m)	Z (m)	Horizontal Accuracy (m)	Veritcal Accuracy (m)	Date/Time	Field Observations	Z (m)	△Z (m)	|△Z | (cm)	|△Z| > 0.33m
sway-3	451686.311	5011162.99	100.491	0.012	0.018	8/2/16 10:57 AM	Road	100.5141	0.023	2.3	
sway-4	451729.247	5011185.17	100.443	0.012	0.02	8/2/16 10:59 AM	Road	100.473	0.030	3.0	
sway-5	451747.953	5011194.18	100.408	0.015	0.019	8/2/16 11:01 AM	Road	100.4255	0.017	1.7	
sway-6	451796.432	5011215.92	100.653	0.012	0.017	8/2/16 11:02 AM	Road	100.6514	-0.002	0.2	
sway-7	451827.065	5011232.7	100.878	0.012	0.018	8/2/16 11:03 AM	Road	100.911	0.033	3.3	
sway-8	451862.852	5011252.57	100.976	0.013	0.02	8/2/16 11:06 AM	Road	100.9654	-0.011	1.1	
sway-9	451615.381	5011110.85	99.985	0.015	0.019	8/2/16 11:14 AM	Road	100.0063	0.021	2.1	
sway-10	451595.026	5011101.05	99.972	0.015	0.019	8/2/16 11:16 AM	Road	100.03	0.058	5.8	
sway-11	451570.448	5011085.87	99.813	0.015	0.02	8/2/16 11:17 AM	Road	99.8501	0.037	3.7	
sway-12	451543.835	5011069.8	99.682	0.015	0.019	8/2/16 11:18 AM	Road	99.7239	0.042	4.2	
bowsill-1	451400.446	5012665.77	102.325	0.009	0.018	8/2/16 11:40 AM	Road	102.3353	0.010	1.0	
bowsill-2	451410.333	5012642.01	102.351	0.008	0.016	8/2/16 11:40 AM	Road	102.3621	0.011	1.1	
bowsill-3	451422.307	5012614.24	102.529	0.013	0.02	8/2/16 11:46 AM	Road	102.5254	-0.004	0.4	
limebank-1	448947.844	5010892.33	95.816	0.014	0.02	8/2/16 12:06 PM	Road	95.8379	0.022	2.2	
limebank-2	448937.607	5010915.03	95.777	0.014	0.02	8/2/16 12:08 PM	Road	95.7892	0.012	1.2	
limebank-3	448925.023	5010943.1	95.606	0.014	0.02	8/2/16 12:09 PM	Road	95.6125	0.007	0.7	
limebank-4	448911.121	5010973.75	95.431	0.013	0.019	8/2/16 12:10 PM	Road	95.4586	0.028	2.8	
limebank-5	448898.883	5011000.56	95.363	0.013	0.019	8/2/16 12:11 PM	Road	95.4012	0.038	3.8	
limebank-6	448885.09	5011030.51	95.222	0.013	0.018	8/2/16 12:12 PM	Road	95.2425	0.020	2.0	
limebank-7	448874.012	5011054.91	95.158	0.014	0.02	8/2/16 12:13 PM	Road	95.1715	0.013	1.3	
limebank-8	448862.767	5011079.38	95.067	0.014	0.019	8/2/16 12:14 PM	Road	95.0536	-0.013	1.3	
limebank-9	448853.505	5011100.05	94.909	0.013	0.019	8/2/16 12:14 PM	Road	94.9004	-0.009	0.9	
limebank-10	448847.017	5011114.31	94.891	0.012	0.018	8/2/16 12:15 PM	Road	94.8916	0.001	0.1	
rideau-1	449264.653	5012875.39	95.795	0.008	0.013	8/2/16 12:26 PM	Road	95.7443	-0.051	5.1	
rideau-2	449252.643	5012868.46	95.934	0.009	0.015	8/2/16 12:26 PM	Road	95.9343	0.000	0.0	
rideau-3	449229.76	5012855.44	96.216	0.01	0.016	8/2/16 12:27 PM	Road	96.1961	-0.020	2.0	
rideau-4	449208.898	5012843.69	96.474	0.01	0.016	8/2/16 12:27 PM	Road	96.4911	0.017	1.7	
rideau-5	449189.588	5012832.76	96.766	0.012	0.019	8/2/16 12:28 PM	Road	96.7704	0.004	0.4	
rideau-6	449177.311	5012825.71	96.948	0.011	0.017	8/2/16 12:29 PM	Road	96.9723	0.024	2.4	
rideau-7	449162.331	5012817.12	97.159	0.01	0.016	8/2/16 12:29 PM	Road	97.1788	0.020	2.0	
rideau-8	449276.079	5012881.8	95.667	0.011	0.017	8/2/16 12:32 PM	Road	95.6685	0.001	0.1	
rideau-9	449299.938	5012895.38	95.346	0.011	0.018	8/2/16 12:36 PM	Road	95.3709	0.025	2.5	
rideau-10	449314.746	5012904.11	95.171	0.012	0.02	8/2/16 12:37 PM	Road	95.1798	0.009	0.9	
downey-1	449580.937	5012339.96	95.661	0.011	0.02	8/2/16 1:07 PM	Road	95.7149	0.054	5.4	
downey-2	449587.816	5012317.85	95.715	0.013	0.019	8/2/16 1:11 PM	Road	95.6896	-0.025	2.5	
downey-3	449611.884	5012263.64	95.884	0.012	0.02	8/2/16 1:16 PM	Road	95.9496	0.066	6.6	

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	RVCA Field Survey (July 20, August 2 and 3, 2016)							Nearest Lidar Point	Comparison		
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downey-4	449625.411	5012225.04	96.042	0.011	0.02	8/2/16 1:21 PM	Road	96.0296	-0.012	1.2	
downey-5	449639.235	5012191.84	96.083	0.012	0.02	8/2/16 1:23 PM	Road	96.0956	0.013	1.3	
downey-6	449653.611	5012157.97	96.209	0.012	0.02	8/2/16 1:24 PM	Road	96.1942	-0.015	1.5	
downey-7	449663.029	5012136.85	96.393	0.012	0.02	8/2/16 1:25 PM	Road	96.4093	0.016	1.6	
downey-8	449670.328	5012119.14	96.549	0.012	0.02	8/2/16 1:27 PM	Road	96.5396	-0.009	0.9	
downey-9	449678.082	5012099.75	96.704	0.012	0.02	8/2/16 1:30 PM	Road	96.7135	0.009	0.9	
downey-10	449688.243	5012074.65	96.808	0.009	0.018	8/2/16 1:31 PM	Road	96.868	0.060	6.0	
riedau2-1	450681.915	5013758.85	110.249	0.008	0.014	8/2/16 1:46 PM	Road	110.2114	-0.038	3.8	
riedau2-2	450707.264	5013773.03	110.528	0.009	0.015	8/2/16 1:47 PM	Road	110.541	0.013	1.3	
riedau2-3	450725.737	5013783.41	110.616	0.009	0.015	8/2/16 1:48 PM	Road	110.6561	0.040	4.0	
riedau2-4	450743.773	5013793.47	110.6	0.01	0.016	8/2/16 1:48 PM	Road	110.6043	0.004	0.4	
riedau2-5	450755.065	5013799.77	110.551	0.013	0.019	8/2/16 1:49 PM	Road	110.6065	0.055	5.5	
riedau2-6	450759.475	5013802.11	110.537	0.011	0.018	8/2/16 1:52 PM	Road	110.5246	-0.012	1.2	
riedau2-7	450772.248	5013809.27	110.512	0.011	0.018	8/2/16 1:52 PM	Road	110.5266	0.015	1.5	
riedau2-8	450788.612	5013818.49	110.408	0.012	0.02	8/2/16 1:53 PM	Road	110.419	0.011	1.1	
riedau2-9	450810.128	5013830.61	110.143	0.012	0.02	8/2/16 1:54 PM	Road	110.2057	0.063	6.3	
riedau2-10	450821.186	5013836.82	109.99	0.012	0.02	8/2/16 1:54 PM	Road	110.02	0.030	3.0	
ficko-1	450812.834	5014473.13	108.178	0.007	0.012	8/2/16 2:05 PM	Road	108.263	0.085	8.5	
ficko-2	450795.007	5014460.89	108.283	0.008	0.013	8/2/16 2:05 PM	Road	108.3519	0.069	6.9	
ficko-3	450774.12	5014448.71	108.362	0.009	0.015	8/2/16 2:06 PM	Road	108.4597	0.098	9.8	
ficko-4	450759.977	5014440.31	108.463	0.012	0.019	8/2/16 2:06 PM	Road	108.5202	0.057	5.7	
ficko-5	450746.927	5014432.87	108.603	0.01	0.017	8/2/16 2:07 PM	Road	108.6441	0.041	4.1	
ficko-6	450733.332	5014425.48	108.752	0.012	0.019	8/2/16 2:07 PM	Road	108.7848	0.033	3.3	
ficko-7	450715.351	5014415.17	109.049	0.011	0.019	8/2/16 2:08 PM	Road	109.0734	0.024	2.4	
ficko-8	450704.074	5014408.94	109.161	0.012	0.019	8/2/16 2:08 PM	Road	109.1786	0.018	1.8	
ficko-9	450692.678	5014402.56	109.2	0.012	0.02	8/2/16 2:12 PM	Road	109.2235	0.023	2.3	
ficko-10	450838.102	5014481.53	108.113	0.011	0.016	8/2/16 2:14 PM	Road	108.1826	0.070	7.0	
ficko-11	450850.067	5014489.68	107.984	0.009	0.017	8/2/16 2:15 PM	Road	108.0467	0.063	6.3	
ficko-12	450862.555	5014498.42	107.779	0.01	0.018	8/2/16 2:15 PM	Road	107.8288	0.050	5.0	
ficko-13	450892.792	5014515.18	107.287	0.013	0.018	8/2/16 2:16 PM	Road	107.3464	0.059	5.9	
bowsill2-1	450261.548	5015421.67	100.163	0.005	0.008	8/2/16 2:26 PM	Road	100.2275	0.064	6.4	
bowsill2-2	450252.228	5015445.92	100.158	0.007	0.012	8/2/16 2:27 PM	Road	100.2245	0.066	6.6	
bowsill2-3	450246.38	5015460.58	100.178	0.008	0.013	8/2/16 2:28 PM	Road	100.2318	0.054	5.4	
bowsill2-4	450239.528	5015477.81	100.167	0.008	0.014	8/2/16 2:28 PM	Road	100.2197	0.053	5.3	
bowsill2-5	450231.892	5015497	100.158	0.008	0.014	8/2/16 2:29 PM	Road	100.212	0.054	5.4	
bowsill2-6	450225.973	5015511.8	100.179	0.009	0.016	8/2/16 2:29 PM	Road	100.2286	0.050	5.0	

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bowsill2-7	450220.44	5015526.04	100.223	0.01	0.017	8/2/16 2:30 PM	Road	100.2886	0.066	6.6	
bowsill2-8	450212.534	5015545.64	100.237	0.009	0.015	8/2/16 2:30 PM	Road	100.2914	0.054	5.4	
bowsill2-9	450203.575	5015568.3	100.247	0.01	0.016	8/2/16 2:31 PM	Road	100.2914	0.044	4.4	
bowsill2-10	450196.59	5015586.11	100.287	0.009	0.015	8/2/16 2:31 PM	Road	100.3505	0.064	6.4	
bowsill2-11	450264.087	5015414.49	100.193	0.013	0.02	8/2/16 2:35 PM	Road	100.2634	0.070	7.0	
bowsill2-12	450271.033	5015398.74	100.235	0.011	0.017	8/2/16 2:36 PM	Road	100.2925	0.057	5.7	
bowsill2-13	450274.116	5015390.66	100.222	0.011	0.017	8/2/16 2:36 PM	Road	100.2882	0.066	6.6	
bowsill2-14	450278.29	5015380.31	100.209	0.011	0.017	8/2/16 2:37 PM	Road	100.2892	0.080	8.0	
bowsill2-15	450281.972	5015370.64	100.209	0.011	0.017	8/2/16 2:37 PM	Road	100.3135	0.105	10.5	
bowsill2-16	450284.835	5015363.39	100.189	0.014	0.019	8/2/16 2:37 PM	Road	100.2631	0.074	7.4	
linebank2-1	447837.735	5013886.16	93.64	0.007	0.011	8/2/16 3:01 PM	Road	93.636	-0.004	0.4	
linebank2-2	447844.76	5013870.68	93.742	0.009	0.015	8/2/16 3:01 PM	Road	93.7274	-0.015	1.5	
linebank2-3	447855.026	5013849.25	93.892	0.011	0.017	8/2/16 3:02 PM	Road	93.9054	0.013	1.3	
linebank2-4	447862.681	5013833.21	93.985	0.011	0.017	8/2/16 3:02 PM	Road	93.9728	-0.012	1.2	
linebank2-5	447869.251	5013818.83	94.086	0.012	0.018	8/2/16 3:03 PM	Road	94.0738	-0.012	1.2	
linebank2-6	447877.22	5013802.46	94.201	0.011	0.017	8/2/16 3:04 PM	Road	94.2111	0.010	1.0	
linebank2-7	447883.011	5013790.79	94.297	0.011	0.017	8/2/16 3:04 PM	Road	94.3285	0.032	3.2	
linebank2-8	447889.272	5013777.08	94.407	0.011	0.017	8/2/16 3:05 PM	Road	94.4004	-0.007	0.7	
linebank2-9	447893.521	5013766.78	94.48	0.011	0.017	8/2/16 3:05 PM	Road	94.5315	0.051	5.1	
linebank2-10	447897.399	5013758.09	94.524	0.012	0.018	8/2/16 3:05 PM	Road	94.5903	0.066	6.6	
longheath-1	449711.915	5010440.7	100.042	0.007	0.012	8/3/16 8:09 AM	Road	100.1132	0.071	7.1	
longheath-2	449690.369	5010429.41	100.128	0.008	0.015	8/3/16 8:09 AM	Road	100.1898	0.062	6.2	
longheath-3	449664.65	5010414.62	100.468	0.009	0.016	8/3/16 8:10 AM	Road	100.5257	0.058	5.8	
longheath-4	449636.742	5010397.08	100.635	0.01	0.017	8/3/16 8:10 AM	Road	100.7353	0.100	10.0	
longheath-5	449615.771	5010378.52	100.348	0.01	0.018	8/3/16 8:11 AM	Road	100.4174	0.069	6.9	
longheath-6	449597.484	5010362.07	99.879	0.009	0.02	8/3/16 8:12 AM	Road	99.9403	0.061	6.1	
longheath-7	449579.339	5010344.34	99.258	0.011	0.019	8/3/16 8:12 AM	Road	99.3131	0.055	5.5	
longheath-8	449549.726	5010339.53	98.755	0.009	0.02	8/3/16 8:13 AM	Road	98.8364	0.081	8.1	
longheath-9	449523.932	5010362.39	98.437	0.009	0.02	8/3/16 8:15 AM	Road	98.4219	-0.015	1.5	
longheath-10	449506.164	5010369.65	98.342	0.009	0.02	8/3/16 8:16 AM	Road	98.3526	0.011	1.1	
longheath-11	449728.598	5010450.48	100.189	0.012	0.02	8/3/16 8:22 AM	Road	100.2339	0.045	4.5	
longheath-12	449752.643	5010466.49	100.646	0.01	0.02	8/3/16 8:24 AM	Road	100.6386	-0.007	0.7	
longheath-13	449800.167	5010493.81	102.306	0.012	0.02	8/3/16 8:26 AM	Road	102.2846	-0.021	2.1	
longheath-14	449829.061	5010509.5	103.452	0.012	0.02	8/3/16 8:27 AM	Road	103.4136	-0.038	3.8	
longheath-15	449865.66	5010532.37	104.246	0.012	0.02	8/3/16 8:29 AM	Road	104.2556	0.010	1.0	
longheath-16	449634.83	5010612.01	99.035	0.009	0.015	8/3/16 8:36 AM	Road	99.0208	-0.014	1.4	

Table C.1 Field verification of LIDAR data (spot heights)

	RVCA Field Survey (July 20, August 2 and 3, 2016)							Nearest Lidar Point	Comparison		
Location ID	X (m)	Y (m)	Z (m)	Horizontal Accuracy (m)	Veritcal Accuracy (m)	Date/Time	Field Observations	Z (m)	△Z (m)	|△Z | (cm)	|△Z| > 0.33m
longheath-17	449607.898	5010595.13	98.932	0.011	0.02	8/3/16 8:37 AM	Road	98.9341	0.002	0.2	
longheath-18	449566.591	5010570.42	98.811	0.011	0.02	8/3/16 8:40 AM	Road	98.8121	0.001	0.1	
longheath-19	449524.166	5010543.65	98.381	0.008	0.014	8/3/16 8:42 AM	Road	98.3546	-0.026	2.6	
longheath-20	449498.833	5010527.17	98.177	0.011	0.019	8/3/16 8:43 AM	Road	98.1796	0.003	0.3	
longheath-21	449484.193	5010514.91	98.088	0.009	0.016	8/3/16 8:43 AM	Road	98.0622	-0.026	2.6	
longheath-22	449480.521	5010503.48	98.069	0.011	0.019	8/3/16 8:44 AM	Road	98.0796	0.011	1.1	
longheath-23	449571.546	5010559.74	98.79	0.011	0.02	8/3/16 8:47 AM	Road	98.7868	-0.003	0.3	
longheath-24	449577.434	5010545.72	98.831	0.011	0.019	8/3/16 8:47 AM	Road	98.8114	-0.020	2.0	
longheath-25	449583.447	5010534.86	98.856	0.011	0.02	8/3/16 8:48 AM	Road	98.8629	0.007	0.7	
downey2-1	449825.299	5011733.22	99.112	0.006	0.01	8/3/16 9:11 AM	Road	99.1213	0.009	0.9	
downey2-2	449816.595	5011754.45	99.211	0.007	0.011	8/3/16 9:12 AM	Road	99.2244	0.013	1.3	
downey2-3	449810.284	5011770.42	99.274	0.008	0.013	8/3/16 9:12 AM	Road	99.2932	0.019	1.9	
downey2-4	449798.648	5011792.62	99.21	0.009	0.015	8/3/16 9:13 AM	Road	99.2259	0.016	1.6	
downey2-5	449792.482	5011808.41	99.252	0.01	0.016	8/3/16 9:13 AM	Road	99.2491	-0.003	0.3	
downey2-6	449792.193	5011816.81	99.378	0.009	0.016	8/3/16 9:14 AM	Road	99.3563	-0.022	2.2	
downey2-7	449787.095	5011828.91	99.343	0.01	0.016	8/3/16 9:14 AM	Road	99.3666	0.024	2.4	
downey2-8	449783.651	5011837.29	99.333	0.01	0.017	8/3/16 9:15 AM	Road	99.3134	-0.020	2.0	
downey2-9	449779.053	5011849.51	99.235	0.01	0.016	8/3/16 9:15 AM	Road	99.2101	-0.025	2.5	
downey2-10	449772.347	5011865.86	99.112	0.011	0.017	8/3/16 9:15 AM	Road	99.1132	0.001	0.1	
downey2-11	449830.959	5011720.7	99.049	0.01	0.017	8/3/16 9:18 AM	Road	99.0752	0.026	2.6	
downey2-12	449839.91	5011699.42	99.002	0.011	0.017	8/3/16 9:18 AM	Road	99.0318	0.030	3.0	
downey2-13	449852.953	5011669.47	99.034	0.011	0.017	8/3/16 9:19 AM	Road	99.0191	-0.015	1.5	
downey2-14	449863.268	5011644.1	99.1	0.011	0.018	8/3/16 9:20 AM	Road	99.1339	0.034	3.4	
downey2-15	449871.782	5011621.94	99.167	0.013	0.019	8/3/16 9:20 AM	Road	99.178	0.011	1.1	
downey2-16	449876.633	5011608.59	99.273	0.011	0.018	8/3/16 9:21 AM	Road	99.2666	-0.006	0.6	
downey2-17	449886.887	5011583.98	99.363	0.012	0.02	8/3/16 9:23 AM	Road	99.3879	0.025	2.5	
downey2-18	449897.069	5011554.58	99.375	0.01	0.017	8/3/16 9:24 AM	Road	99.3909	0.016	1.6	
downey2-19	449911.356	5011520.97	99.469	0.011	0.017	8/3/16 9:25 AM	Road	99.5195	0.050	5.0	
downey2-20	449922.113	5011495.45	99.572	0.012	0.017	8/3/16 9:26 AM	Road	99.6025	0.030	3.0	
bowsille2-1	451489.523	5012453.88	103.187	0.007	0.009	8/3/16 9:37 AM	Road	103.2115	0.025	2.5	
bowsille2-2	451486.997	5012460.33	103.192	0.008	0.01	8/3/16 9:38 AM	Road	103.2372	0.045	4.5	
bowsille2-3	451481.979	5012472.62	103.195	0.007	0.012	8/3/16 9:38 AM	Road	103.2253	0.030	3.0	
bowsille2-4	451475.61	5012488.42	103.194	0.01	0.013	8/3/16 9:39 AM	Road	103.1894	-0.005	0.5	
bowsille2-5	451460.718	5012523.42	102.894	0.009	0.013	8/3/16 9:41 AM	Road	102.8966	0.003	0.3	
bowsille2-6	451451.52	5012545.38	102.755	0.01	0.014	8/3/16 9:42 AM	Road	102.7506	-0.004	0.4	
bowsille2-7	451447.238	5012555.04	102.736	0.014	0.018	8/3/16 9:42 AM	Road	102.7514	0.015	1.5	

Table C.1 Field verification of LIDAR data (spot heights)

	RVCA Field Survey (July 20, August 2 and 3, 2016)							Nearest Lidar Point	Comparison		
Location ID	X (m)	Y (m)	Z (m)	Horizontal Accuracy (m)	Veritcal Accuracy (m)	Date/Time	Field Observations	Z (m)	△Z (m)	|△Z | (cm)	|△Z| > 0.33m
bowsille2-8	451443.152	5012564.34	102.725	0.01	0.014	8/3/16 9:42 AM	Road	102.7288	0.004	0.4	
bowsille2-9	451440.076	5012572.21	102.716	0.011	0.017	8/3/16 9:43 AM	Road	102.7347	0.019	1.9	
bowsille2-10	451434.796	5012584.57	102.66	0.011	0.019	8/3/16 9:43 AM	Road	102.6773	0.017	1.7	
bowsille2-11	451427.663	5012601.75	102.562	0.011	0.019	8/3/16 9:44 AM	Road	102.5613	-0.001	0.1	
bowsille2-12	451492.69	5012447.69	103.154	0.012	0.02	8/3/16 9:48 AM	Road	103.1957	0.042	4.2	
bowsille2-13	451498.54	5012433.36	103.143	0.011	0.018	8/3/16 9:49 AM	Road	103.1893	0.046	4.6	
bowsille2-14	451505.104	5012417.38	103.005	0.011	0.018	8/3/16 9:49 AM	Road	103.0109	0.006	0.6	
bowsille2-15	451511.378	5012402.47	102.87	0.011	0.018	8/3/16 9:50 AM	Road	102.8916	0.022	2.2	
bowsille2-16	451514.723	5012394.39	102.821	0.011	0.018	8/3/16 9:50 AM	Road	102.845	0.024	2.4	
bowsille2-17	451522.976	5012375.2	102.734	0.012	0.017	8/3/16 9:50 AM	Road	102.7507	0.017	1.7	
bowsille2-18	451527.77	5012363.69	102.764	0.012	0.017	8/3/16 9:51 AM	Road	102.7984	0.034	3.4	
bowsille2-19	451537.67	5012340.36	102.78	0.012	0.017	8/3/16 9:52 AM	Road	102.8481	0.068	6.8	
bowsille2-20	451543.934	5012325.25	102.843	0.014	0.019	8/3/16 9:52 AM	Road	102.8841	0.041	4.1	
eal armstog-1	448577.186	5014840.15	94.524	0.009	0.013	8/3/16 10:05 AM	Road	94.5529	0.029	2.9	
eal armstog-2	448591.783	5014848.52	94.606	0.01	0.015	8/3/16 10:06 AM	Road	94.6033	-0.003	0.3	
eal armstog-3	448609.698	5014858.6	94.685	0.009	0.013	8/3/16 10:07 AM	Road	94.6911	0.006	0.6	
eal armstog-4	448625.676	5014867.9	94.709	0.009	0.013	8/3/16 10:07 AM	Road	94.6605	-0.049	4.9	
eal armstog-5	448636.746	5014873.94	94.737	0.009	0.013	8/3/16 10:08 AM	Road	94.7447	0.008	0.8	
eal armstog-6	448653.295	5014883.55	94.814	0.009	0.012	8/3/16 10:08 AM	Road	94.8069	-0.007	0.7	
eal armstog-7	448665.716	5014890.94	94.917	0.009	0.012	8/3/16 10:09 AM	Road	94.9752	0.058	5.8	
eal armstog-8	448684.375	5014901.52	95.04	0.009	0.013	8/3/16 10:09 AM	Road	95.0885	0.048	4.8	
eal armstog-9	448700.124	5014910.9	95.121	0.009	0.013	8/3/16 10:10 AM	Road	95.1117	-0.009	0.9	
eal armstog-10	448719.049	5014921.48	95.214	0.009	0.013	8/3/16 10:10 AM	Road	95.2078	-0.006	0.6	
eal armstog-11	448740.251	5014933.72	95.218	0.009	0.013	8/3/16 10:11 AM	Road	95.1948	-0.023	2.3	
eal armstog-12	448753.667	5014941.38	95.241	0.009	0.013	8/3/16 10:11 AM	Road	95.2833	0.042	4.2	

Mean △Z :	3.0	0 Yes out of 277
Median△Z :	2.4	
Max △Z :	10.5	
Min △Z :	0.0	

Appendix D

SWMHYMO Model Files

```
2     Metric units
*#*****************************************************************************
*#  Project Name: [Mosquito]    Project Number: [10418]
*#  Model Version: [V12-final]
*#  Date        : 22 Sept 2021
*#  Modeled by    : [ Tyler Bauman ]
*#  Checked by    : [ Calvin Paul ]
*#  Company     : Rideau Valley Conservation Authority
*#  License #   :  5329846
*#*****************************************************************************
*% 100 Year 3 Hour Chicago Design Storm
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[3]
*%                   ["100YC3H.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------------|
READ STORM          STORM_FILENAME=["storm.001"]
*%-----------------|-------------------------------------------------------------|
DEFAULT VALUES      ICASEdef=[1],  read and print values
                    DEFVAL_FILENAME=["mosq_val.val"]
*%-----------------|-------------------------------------------------------------|
*# Tributary A
CALIB NASHYD        ID=[3], NHYD=["TA1"], DT=[1]min, AREA=[636.3](ha),
                    DWF=[0](cms),  CN/C=[58.9], IA=[8.87](mm),
                    N=[3], TP=[2.49]hrs,
                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%-----------------|-------------------------------------------------------------|
SAVE HYD            ID=[3],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Runoff Hydrograph for TA1"]
*%-----------------|-------------------------------------------------------------|
ROUTE CHANNEL       IDout=[2], NHYD=["C6"], IDin=[3],
                    RDT=[1](min),
                    CHLGTH=[2390](m),  CHSLOPE=[0.199](%),
                                       FPSLOPE=[0.199](%),
                    SECNUM=[2170],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.063, 13.78] NSEG times
                                            -0.032, 23.63
                                            0.055, 44.35
                    ( DISTANCE (m), ELEVATION (m))=[0.00, 95.86]
                                                   6.20, 95.49
                                                   13.78, 95.83
                                                   18.17, 94.10
                                                   20.13, 94.10
                                                   23.63, 95.46
                                                   36.65, 95.50
                                                   44.35, 95.86
*%-----------------|-------------------------------------------------------------|
SAVE HYD            ID=[2],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Routing Hydrograph for C6"]
*%-----------------|-------------------------------------------------------------|
CALIB NASHYD        ID=[1], NHYD=["TA2"], DT=[1]min, AREA=[220.8](ha),
                    DWF=[0](cms),  CN/C=[53.7], IA=[10.95](mm),
                    N=[3], TP=[1.83]hrs,
                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%-----------------|-------------------------------------------------------------|
SAVE HYD            ID=[1],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Runoff Hydrograph for TA2"]
*%-----------------|-------------------------------------------------------------|
ADD HYD             IDsum=[5], NHYD=["N7"], IDs to add=[1 + 2]
*%-----------------|-------------------------------------------------------------|
SAVE HYD            ID=[5],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Confluence Hydrograph for N7"]
*%-----------------|-------------------------------------------------------------|
*# Tributary B
CALIB NASHYD        ID=[3], NHYD=["TB1"], DT=[1]min, AREA=[331.3](ha),
                    DWF=[0](cms),  CN/C=[56.5], IA=[9.79](mm),
                    N=[3], TP=[1.36]hrs,
                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%-----------------|-------------------------------------------------------------|
SAVE HYD            ID=[3],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Runoff Hydrograph for TB1"]
*%-----------------|-------------------------------------------------------------|
ROUTE CHANNEL       IDout=[2], NHYD=["C7"], IDin=[3],
                    RDT=[1](min),
                    CHLGTH=[1590](m),  CHSLOPE=[0.168](%),
                                       FPSLOPE=[0.168](%),
                    SECNUM=[3140],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.061, 35.30] NSEG times
```

```
                                    -0.028, 42.86
                                    0.055, 50.44
                  ( DISTANCE (m), ELEVATION (m))=[0.00, 94.10]
                                          19.69, 93.43
                                          35.30, 93.86
                                          38.13, 92.33
                                          39.13, 92.33
                                          42.86, 94.10
                                          46.65, 94.04
                                          50.44, 94.10
*%-----------------|-------------------------------------------------------|
SAVE HYD            ID=[2],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Routing Hydrograph for C7"]
*%-----------------|-------------------------------------------------------|
CALIB NASHYD        ID=[1], NHYD=["TB2"], DT=[1]min, AREA=[212.6](ha),
                    DWF=[0](cms),  CN/C=[64.3], IA=[7.06](mm),
                    N=[3], TP=[2.56]hrs,
                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%-----------------|-------------------------------------------------------|
SAVE HYD            ID=[1],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Runoff Hydrograph for TB2"]
*%-----------------|-------------------------------------------------------|
ADD HYD             IDsum=[6], NHYD=["N9"], IDs to add=[1 + 2]
*%-----------------|-------------------------------------------------------|
SAVE HYD            ID=[6],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Confluence Hydrograph for N9"]
*%-----------------|-------------------------------------------------------|
*# Tributary C
CALIB STANDHYD      ID=[7], NHYD=["TC1"], DT=[1]min, AREA=[662.6](ha),
                    XIMP=[0.406], TIMP=[0.451], DWF=[0](cms),  LOSS=[2],
                    SCS curve number CN=[70.9],
                    Pervious Surfaces:   IAper=[5.21](mm), SLPP=[2](%)
                                         LGP=[70.3](m), MNP=[0.25], SCP=[0](min),
                    Impervious Surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
                                         LGI=[2102](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%-----------------|-------------------------------------------------------|
SAVE HYD            ID=[7],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Runoff Hydrograph for TC1"]
*%-----------------|-------------------------------------------------------|
*# Main Channel
ADD HYD             IDsum=[3], NHYD=["J1"], IDs to add=[5 + 6]
*%-----------------|-------------------------------------------------------|
SAVE HYD            ID=[3],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Confluence Hydrograph for J1"]
*%-----------------|-------------------------------------------------------|
ROUTE CHANNEL       IDout=[2], NHYD=["C1"], IDin=[3],
                    RDT=[1](min),
                    CHLGTH=[2670](m),  CHSLOPE=[0.205](%),
                                       FPSLOPE=[0.205](%),
                    SECNUM=[1555],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.061, 3.70] NSEG times
                                          -0.039, 12.43
                                          0.062, 51.91
                    ( DISTANCE (m), ELEVATION (m))=[0.00, 92.43]
                                          3.70, 91.56
                                          6.75, 89.72
                                          7.85, 89.72
                                          12.43, 91.32
                                          21.12, 91.44
                                          22.71, 91.96
                                          51.91, 92.43
*%-----------------|-------------------------------------------------------|
SAVE HYD            ID=[2],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Routing Hydrograph for C1"]
*%-----------------|-------------------------------------------------------|
CALIB NASHYD        ID=[1], NHYD=["M1"], DT=[1]min, AREA=[874](ha),
                    DWF=[0](cms),  CN/C=[59.4], IA=[8.7](mm),
                    N=[3], TP=[1.76]hrs,
                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%-----------------|-------------------------------------------------------|
SAVE HYD            ID=[1],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Runoff Hydrograph for M1"]
*%-----------------|-------------------------------------------------------|
ADD HYD             IDsum=[3], NHYD=["N1"], IDs to add=[1 + 2]
*%-----------------|-------------------------------------------------------|
```

```
SAVE HYD            ID=[3],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Confluence Hydrograph for N1"]
*%-----------------|-----------------------------------------------------------|
ROUTE CHANNEL       IDout=[2], NHYD=["C2"], IDin=[3],
                    RDT=[1](min),
                    CHLGTH=[1580](m),  CHSLOPE=[0.178](%),
                                       FPSLOPE=[0.178](%),
                    SECNUM=[1400],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.059, 22.16] NSEG times
                                            -0.038, 31.90
                                            0.058, 45.91
                    ( DISTANCE (m), ELEVATION (m))=[0.00, 87.64]
                                                   1.67, 86.74
                                                   22.16, 86.45
                                                   27.23, 84.54
                                                   28.58, 84.54
                                                   31.90, 86.58
                                                   43.42, 86.85
                                                   45.91, 87.64
*%-----------------|-----------------------------------------------------------|
SAVE HYD            ID=[2],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Routing Hydrograph for C2"]
*%-----------------|-----------------------------------------------------------|
CALIB STANDHYD      ID=[1], NHYD=["M2"], DT=[1]min, AREA=[222.3](ha),
                    XIMP=[0.458], TIMP=[0.509], DWF=[0](cms),  LOSS=[2],
                    SCS curve number CN=[71.8],
                    Pervious Surfaces:   IAper=[4.99](mm), SLPP=[2](%)
                                         LGP=[67.7](m), MNP=[0.25], SCP=[0](min),
                    Impervious Surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
                                         LGI=[1217](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%-----------------|-----------------------------------------------------------|
SAVE HYD            ID=[1],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Runoff Hydrograph for M2"]
*%-----------------|-----------------------------------------------------------|
ADD HYD             IDsum=[3], NHYD=["N2"], IDs to add=[1 + 2]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            ID=[3],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Confluence Hydrograph for N2"]
*%-----------------|-----------------------------------------------------------|
ROUTE CHANNEL       IDout=[2], NHYD=["C3"], IDin=[3],
                    RDT=[1](min),
                    CHLGTH=[390](m),  CHSLOPE=[0.234](%),
                                      FPSLOPE=[0.234](%),
                    SECNUM=[1305],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.053, 53.23] NSEG times
                                            -0.039, 65.23
                                            0.049, 71.35
                    ( DISTANCE (m), ELEVATION (m))=[0.00, 84.73]
                                                   2.65, 84.07
                                                   53.23, 83.78
                                                   58.13, 82.37
                                                   60.00, 82.37
                                                   65.23, 84.01
                                                   70.70, 84.55
                                                   71.35, 84.73
*%-----------------|-----------------------------------------------------------|
SAVE HYD            ID=[2],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Routing Hydrograph for C3"]
*%-----------------|-----------------------------------------------------------|
CALIB STANDHYD      ID=[1], NHYD=["M3"], DT=[1]min, AREA=[598.8](ha),
                    XIMP=[0.281], TIMP=[0.312], DWF=[0](cms),  LOSS=[2],
                    SCS curve number CN=[53.4],
                    Pervious Surfaces:   IAper=[11.08](mm), SLPP=[2](%)
                                         LGP=[98.2](m), MNP=[0.25], SCP=[0](min),
                    Impervious Surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
                                         LGI=[1998](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%-----------------|-----------------------------------------------------------|
SAVE HYD            ID=[1],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Runoff Hydrograph for M3"]
*%-----------------|-----------------------------------------------------------|
ADD HYD             IDsum=[3], NHYD=["N3"], IDs to add=[1 + 2]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            ID=[3],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Confluence Hydrograph for N3"]
```

```
*%-----------------|-------------------------------------------------------|
ROUTE CHANNEL       IDout=[2], NHYD=["C4"], IDin=[3],
                    RDT=[1](min),
                    CHLGTH=[1460](m),  CHSLOPE=[0.297](%),
                                       FPSLOPE=[0.297](%),
                    SECNUM=[1240],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.078, 43.34] NSEG times
                                            -0.040, 57.23
                                            0.071, 71.83
                    ( DISTANCE (m), ELEVATION (m))=[0.00, 81.41]
                                                  3.13, 80.54
                                                  43.34, 80.44
                                                  48.54, 77.58
                                                  49.89, 77.58
                                                  57.23, 80.35
                                                  63.93, 80.35
                                                  71.83, 81.41
*%-----------------|-------------------------------------------------------|
SAVE HYD            ID=[2],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Routing Hydrograph for C4"]
*%-----------------|-------------------------------------------------------|
CALIB STANDHYD      ID=[1], NHYD=["M4"], DT=[1]min, AREA=[50.7](ha),
                    XIMP=[0.288], TIMP=[0.319], DWF=[0](cms),  LOSS=[2],
                    SCS curve number CN=[78.0],
                    Pervious Surfaces:   IAper=[3.58](mm), SLPP=[2](%)
                                         LGP=[73.2](m), MNP=[0.25], SCP=[0](min),
                    Impervious Surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
                                         LGI=[582](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%-----------------|-------------------------------------------------------|
SAVE HYD            ID=[1],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Runoff Hydrograph for M4"]
*%-----------------|-------------------------------------------------------|
ADD HYD             IDsum=[4], NHYD=["N4"], IDs to add=[1 + 2]
*%-----------------|-------------------------------------------------------|
SAVE HYD            ID=[4],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Confluence Hydrograph for N4"]
*%-----------------|-------------------------------------------------------|
ADD HYD             IDsum=[3], NHYD=["J2"], IDs to add=[4 + 7]
*%-----------------|-------------------------------------------------------|
SAVE HYD            ID=[3],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Confluence Hydrograph for J2"]
*%-----------------|-------------------------------------------------------|
ROUTE CHANNEL       IDout=[2], NHYD=["C5"], IDin=[3],
                    RDT=[1](min),
                    CHLGTH=[980](m),  CHSLOPE=[0.094](%),
                                      FPSLOPE=[0.094](%),
                    SECNUM=[1180],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.054, 45.90] NSEG times
                                            -0.031, 65.30
                                            0.057, 91.14
                    ( DISTANCE (m), ELEVATION (m))=[0.00, 80.15]
                                                  3.01, 78.70
                                                  45.90, 78.03
                                                  55.11, 76.18
                                                  56.91, 76.18
                                                  65.30, 78.63
                                                  88.85, 78.95
                                                  91.14, 80.15
*%-----------------|-------------------------------------------------------|
SAVE HYD            ID=[2],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Routing Hydrograph for C5"]
*%-----------------|-------------------------------------------------------|
CALIB STANDHYD      ID=[1], NHYD=["M5"], DT=[1]min, AREA=[152](ha),
                    XIMP=[0.262], TIMP=[0.291], DWF=[0](cms),  LOSS=[2],
                    SCS curve number CN=[75.7],
                    Pervious Surfaces:   IAper=[4.08](mm), SLPP=[2](%)
                                         LGP=[116.7](m), MNP=[0.25], SCP=[0](min),
                    Impervious Surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
                                         LGI=[1007](m), MNI=[0.013], SCI=[0](min),
                    RAINFALL=[ ,  ,  ,  , ](mm/hr),  END=-1
*%-----------------|-------------------------------------------------------|
SAVE HYD            ID=[1],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Runoff Hydrograph for M5"]
*%-----------------|-------------------------------------------------------|
ADD HYD             IDsum=[3], NHYD=["N5"], IDs to add=[1 + 2]
```

```
*%-----------------|---------------------------------------------------------|
SAVE HYD            ID=[3],   # OF PCYCLES=[1],  ICASEsh=[1]
                    HYD_COMMENT=["Confluence Hydrograph for N5"]
*%-----------------|---------------------------------------------------------|
*% 100 Year 3 Hour SCS Design Storm
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[4]
*%                   ["100YS3.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|---------------------------------------------------------|
*% 100 Year 6 Hour Chicago Design Storm
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[6]
*%                   ["100YC6H.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|---------------------------------------------------------|
*% 100 Year 6 Hour SCS Design Storm
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[7]
*%                   ["100YS6.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|---------------------------------------------------------|
*% 100 Year 12 Hour Chicago Design Storm
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[12]
*%                   ["100YC12H.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|---------------------------------------------------------|
*% 100 Year 12 Hour SCS Design Storm
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[13]
*%                   ["100YS12.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|---------------------------------------------------------|
*% 100 Year 24 Hour Chicago Design Storm
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[24]
*%                   ["100YC24H.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|---------------------------------------------------------|
*% 100 Year 24 Hour SCS Design Storm
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[25]
*%                   ["100YS24.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|---------------------------------------------------------|
*% 2 Year 24 Hour SCS Design Storm
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[240]
*%                   ["2YS24.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|---------------------------------------------------------|
*% 5 Year 24 Hour SCS Design Storm
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[241]
*%                   ["5YS24.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|---------------------------------------------------------|
*% 10 Year 24 Hour SCS Design Storm
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[242]
*%                   ["10YS24.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|---------------------------------------------------------|
*% 20 Year 24 Hour SCS Design Storm
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[243]
*%                   ["20YS24.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|---------------------------------------------------------|
*% 50 Year 24 Hour SCS Design Storm
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[244]
*%                   ["50YS24.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|---------------------------------------------------------|
*% 200 Year 24 Hour SCS Design Storm
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[245]
*%                   ["200YS24.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|---------------------------------------------------------|
*% 350 Year 24 Hour SCS Design Storm
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[246]
*%                   ["350YS24.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|---------------------------------------------------------|
*% 500 Year 24 Hour SCS Design Storm
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[247]
*%                   ["500YS24.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|---------------------------------------------------------|
FINISH
```

```
================================================================================

   SSSSS  W   W  M   M  H   H  Y   Y  M   M   OOO       999    999    =========
   S      W W W  MM MM  H   H   Y Y   MM MM  O   O      9   9  9   9
   SSSSS  W W W  M M M  HHHHH    Y    M M M  O   O  ##  9   9  9   9   Ver  4.05
      S   W W    M   M  H   H    Y    M   M  O   O       9999   9999   Sept 2011
   SSSSS   W W   M   M  H   H    Y    M   M   OOO          9      9    =========
                                                        9   9  9   9   # 5329846
        StormWater Management HYdrologic Model           999    999    =========

 ***************************************************************************
 ***************************** SWMHYMO Ver/4.05  ***************************
 *********  A single event and continuous hydrologic simulation model  *********
 *********     based on the principles of HYMO and its successors      *********
 *********                  OTTHYMO-83 and OTTHYMO-89.                  *********
 ***************************************************************************
 ********* Distributed by:  J.F. Sabourin and Associates Inc.          *********
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 *********                  E-Mail: swmhymo@jfsa.Com                   *********
 ***************************************************************************

 ***************************************************************************
 ********* Licensed user: Rideau Valley Conservation Authority         *********
 *********                Manotick              SERIAL#:5329846        *********
 ***************************************************************************

 ***************************************************************************
 *********           ++++++ PROGRAM ARRAY DIMENSIONS ++++++            *********
 *********           Maximum value for ID numbers  :     10            *********
 *********           Max. number of rainfall points: 105408            *********
 *********           Max. number of flow points    : 105408            *********
 ***************************************************************************

 ***** DESCRIPTION SUMMARY TABLE HEADERS (units depend on METOUT in START) *****
 *****-------------------------------------------------------------------*****
 *****    ID:  Hydrograph IDentification numbers, (1-10).                *****
 *****  NHYD:  Hydrograph reference numbers, (6 digits or characters).   *****
 *****  AREA:  Drainage area associated with hydrograph, (ac.) or (ha.).  *****
 ***** QPEAK:  Peak flow of simulated hydrograph, (ft^3/s) or (m^3/s).   *****
 ***** TpeakDate_hh:mm is the date and time of the peak flow.            *****
 *****  R.V.:  Runoff Volume of simulated hydrograph, (in) or (mm).      *****
 *****  R.C.:  Runoff Coefficient of simulated hydrograph, (ratio).      *****
 *****     *:  see WARNING or NOTE message printed at end of run.        *****
 *****    **:  see  ERROR  message printed at end of run.                *****
 ***************************************************************************
 ***************************************************************************

:::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::

 ***************************************************************************

 **********************   S U M M A R Y   O U T P U T   **********************
 ***************************************************************************
 *         DATE: 2021-10-27     TIME: 13:03:41     RUN COUNTER: 000050         *
 ***************************************************************************
 * Input   filename: C:\MODEL_~1\Current\MOSQUI~1\mosq.dat                   *
 * Output  filename: C:\MODEL_~1\Current\MOSQUI~1\mosq.out                   *
 * Summary filename: C:\MODEL_~1\Current\MOSQUI~1\mosq.sum                   *
 * User comments:                                                            *
 * 1:_____________________________________________________________________*
 * 2:_____________________________________________________________________*
 * 3:_____________________________________________________________________*
 ***************************************************************************


#****************************************************************************
#  Project Name: [Mosquito]    Project Number: [10418]
#  Model Version: [V12-final]
#  Date        : 22 Sept 2021
#  Modeled by    : [ Tyler Bauman ]
#  Checked by    : [ Calvin Paul ]
#  Company     : Rideau Valley Conservation Authority
#  License #   :  5329846
#****************************************************************************
  ** END OF RUN :   2

****************************************************************************




 RUN:COMMAND#
 003:0001----------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on       0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  =   3 ]
#****************************************************************************
#  Project Name: [Mosquito]    Project Number: [10418]
#  Model Version: [V12-final]
#  Date        : 22 Sept 2021
#  Modeled by    : [ Tyler Bauman ]
#  Checked by    : [ Calvin Paul ]
#  Company     : Rideau Valley Conservation Authority
#  License #   :  5329846
#****************************************************************************
 003:0002----------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  =
      [SDT=10.00:SDUR=   3.00:PTOT=  74.43]
 003:0003----------------------------------------------------------------------
     DEFAULT VALUES
      Filename = C:\MODEL_~1\Current\MOSQUI~1\mosq_val.val
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Bilberry Creek Default Value File]
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=90.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .045]
      Parameters used in NASHYD:
      [Ia=   1.50 mm] [N= 3.00]
# Tributary A
 003:0004--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TA1          636.30    6.449 No_date    4:04   17.70 .238
      [CN= 58.9: N= 3.00]
      [Tp= 2.49:DT= 1.00]
 003:0005--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:TA1          636.30    6.449 No_date    4:04   17.70  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA1.003
      remark:Runoff Hydrograph for TA1
 003:0006--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL    -> 03:TA1          636.30    6.449 No_date    4:04   17.70  n/a
      [RDT= 1.00] out<- 02:C6           636.30    6.129 No_date    4:35   17.70  n/a
      [L/S/n= 2390./ .199/.032]
      {Vmax= 1.096:Dmax= 1.182}
 003:0007--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C6           636.30    6.129 No_date    4:35   17.70  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C6.003
      remark:Routing Hydrograph for C6
 003:0008--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TA2          220.80    2.316 No_date    3:28   14.26 .192
      [CN= 53.7: N= 3.00]
      [Tp= 1.83:DT= 1.00]
 003:0009--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:TA2          220.80    2.316 No_date    3:28   14.26  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA2.003
      remark:Runoff Hydrograph for TA2
 003:0010--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:TA2          220.80    2.316 No_date    3:28   14.26  n/a
                      +  02:C6           636.30    6.129 No_date    4:35   17.70  n/a
      [DT= 1.00]  SUM=  05:N7           857.10    8.072 No_date    4:15   16.82  n/a
 003:0011--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           05:N7           857.10    8.072 No_date    4:15   16.82  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N7.003
      remark:Confluence Hydrograph for N7
# Tributary B
 003:0012--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TB1          331.30    4.806 No_date    2:56   16.06 .216
      [CN= 56.5: N= 3.00]
      [Tp= 1.36:DT= 1.00]
 003:0013--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:TB1          331.30    4.806 No_date    2:56   16.06  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB1.003
      remark:Runoff Hydrograph for TB1
 003:0014--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL    -> 03:TB1          331.30    4.806 No_date    2:56   16.06  n/a
      [RDT= 1.00] out<- 02:C7           331.30    4.525 No_date    3:28   16.06  n/a
      [L/S/n= 1590./ .168/.028]
      {Vmax=  .977:Dmax= 1.237}
 003:0015--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C7           331.30    4.525 No_date    3:28   16.06  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C7.003
      remark:Routing Hydrograph for C7
 003:0016--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TB2          212.60    2.590 No_date    4:06   21.78 .293
      [CN= 64.3: N= 3.00]
      [Tp= 2.56:DT= 1.00]
 003:0017--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:TB2          212.60    2.590 No_date    4:06   21.78  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB2.003
      remark:Runoff Hydrograph for TB2
 003:0018--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:TB2          212.60    2.590 No_date    4:06   21.78  n/a
                      +  02:C7           331.30    4.525 No_date    3:28   16.06  n/a
      [DT= 1.00]  SUM=  06:N9           543.90    6.990 No_date    3:37   18.29  n/a
 003:0019--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           06:N9           543.90    6.990 No_date    3:37   18.29  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N9.003
      remark:Confluence Hydrograph for N9
# Tributary C
 003:0020--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     07:TC1          662.60   67.511 No_date    1:16   46.92 .630
      [XIMP=.41:TIMP=.45]
      [LOSS= 2 :CN= 70.9]
      [Pervious     area: IAper= 5.21:SLPP=2.00:LGP=  70.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=2102.:MNI=.013:SCI=   .0]
 003:0021--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           07:TC1          662.60   67.511 No_date    1:16   46.92  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TC1.003
      remark:Runoff Hydrograph for TC1
# Main Channel
 003:0022--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            05:N7           857.10    8.072 No_date    4:15   16.82  n/a
                      +  06:N9           543.90    6.990 No_date    3:37   18.29  n/a
      [DT= 1.00]  SUM=  03:J1          1401.00   14.743 No_date    3:53   17.39  n/a
 003:0023--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:J1           1401.00   14.743 No_date    3:53   17.39  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-J1.003
      remark:Confluence Hydrograph for J1
 003:0024--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL    -> 03:J1          1401.00   14.743 No_date    3:53   17.39  n/a
      [RDT= 1.00] out<- 02:C1           1401.00   13.459 No_date    4:32   17.39  n/a
      [L/S/n= 2670./ .205/.039]
      {Vmax= 1.066:Dmax= 1.982}
 003:0025--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C1           1401.00   13.459 No_date    4:32   17.39  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C1.003
      remark:Routing Hydrograph for C1
 003:0026--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:M1           874.00   11.952 No_date    3:22   18.05 .243
      [CN= 59.4: N= 3.00]
      [Tp= 1.76:DT= 1.00]
 003:0027--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M1           874.00   11.952 No_date    3:22   18.05  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M1.003
      remark:Runoff Hydrograph for M1
 003:0028--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M1           874.00   11.952 No_date    3:22   18.05  n/a
                      +  02:C1          1401.00   13.459 No_date    4:32   17.39  n/a
      [DT= 1.00]  SUM=  03:N1          2275.00   23.696 No_date    3:59   17.64  n/a
 003:0029--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N1           2275.00   23.696 No_date    3:59   17.64  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N1.003
      remark:Confluence Hydrograph for N1
 003:0030--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL    -> 03:N1          2275.00   23.696 No_date    3:59   17.64  n/a
      [RDT= 1.00] out<- 02:C2           2275.00   22.675 No_date    4:29   17.64  n/a
      [L/S/n= 1580./ .178/.038]
      {Vmax=  .991:Dmax= 2.378}
 003:0031--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C2           2275.00   22.675 No_date    4:29   17.64  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C2.003
      remark:Routing Hydrograph for C2
 003:0032--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M2           222.30   30.652 No_date    1:09   49.90 .670
      [XIMP=.46:TIMP=.51]
      [LOSS= 2 :CN= 71.8]
      [Pervious     area: IAper= 4.99:SLPP=2.00:LGP=  68.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1217.:MNI=.013:SCI=   .0]
```

```
003:0033--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M2           222.30   30.652 No_date    1:09   49.90  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M2.003
     remark:Runoff Hydrograph for M2
003:0034--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M2           222.30   30.652 No_date    1:09   49.90  n/a
                  +  02:C2          2275.00   22.675 No_date    4:29   17.64  n/a
     [DT= 1.00]  SUM=  03:N2          2497.30   30.684 No_date    1:09   20.51  n/a
003:0035--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N2          2497.30   30.684 No_date    1:09   20.51  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N2.003
     remark:Confluence Hydrograph for N2
003:0036--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N2          2497.30   30.684 No_date    1:09   20.51  n/a
     [RDT= 1.00] out<- 02:C3          2497.30   25.975 No_date    1:18   20.51  n/a
     [L/S/n=  390./ .234/.039]
     {Vmax=  .892:Dmax= 1.921}
003:0037--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C3          2497.30   25.975 No_date    1:18   20.51  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C3.003
     remark:Routing Hydrograph for C3
003:0038--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M3           598.80   38.396 No_date    1:15   31.09 .418
     [XIMP=.28:TIMP=.31]
     [LOSS= 2 :CN= 53.4]
     [Pervious     area: IAper=11.08:SLPP=2.00:LGP=  98.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1998.:MNI=.013:SCI=   .0]
003:0039--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M3           598.80   38.396 No_date    1:15   31.09  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M3.003
     remark:Runoff Hydrograph for M3
003:0040--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M3           598.80   38.396 No_date    1:15   31.09  n/a
                  +  02:C3          2497.30   25.975 No_date    1:18   20.51  n/a
     [DT= 1.00]  SUM=  03:N3          3096.10   64.178 No_date    1:15   22.56  n/a
003:0041--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N3          3096.10   64.178 No_date    1:15   22.56  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N3.003
     remark:Confluence Hydrograph for N3
003:0042--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N3          3096.10   64.178 No_date    1:15   22.56  n/a
     [RDT= 1.00] out<- 02:C4          3096.10   50.216 No_date    1:36   22.56  n/a
     [L/S/n= 1460./ .297/.040]
     {Vmax= 1.374:Dmax= 3.270}
003:0043--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C4          3096.10   50.216 No_date    1:36   22.56  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C4.003
     remark:Routing Hydrograph for C4
003:0044--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M4            50.70    6.385 No_date    1:05   46.71 .628
     [XIMP=.29:TIMP=.32]
     [LOSS= 2 :CN= 78.0]
     [Pervious     area: IAper= 3.58:SLPP=2.00:LGP=  73.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 582.:MNI=.013:SCI=   .0]
003:0045--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M4            50.70    6.385 No_date    1:05   46.71  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M4.003
     remark:Runoff Hydrograph for M4
003:0046--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M4            50.70    6.385 No_date    1:05   46.71  n/a
                  +  02:C4          3096.10   50.216 No_date    1:36   22.56  n/a
     [DT= 1.00]  SUM=  04:N4          3146.80   53.696 No_date    1:34   22.95  n/a
003:0047--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           04:N4          3146.80   53.696 No_date    1:34   22.95  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N4.003
     remark:Confluence Hydrograph for N4
003:0048--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            04:N4          3146.80   53.696 No_date    1:34   22.95  n/a
                  +  07:TC1          662.60   67.511 No_date    1:16   46.92  n/a
     [DT= 1.00]  SUM=  03:J2          3809.40  115.419 No_date    1:23   27.12  n/a
003:0049--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:J2          3809.40  115.419 No_date    1:23   27.12  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-J2.003
     remark:Confluence Hydrograph for J2
003:0050--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:J2          3809.40  115.419 No_date    1:23   27.12  n/a
     [RDT= 1.00] out<- 02:C5          3809.40   95.592 No_date    1:38   27.12  n/a
     [L/S/n=  980./ .094/.031]
     {Vmax= 1.030:Dmax= 3.320}
003:0051--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C5          3809.40   95.592 No_date    1:38   27.12  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C5.003
     remark:Routing Hydrograph for C5
003:0052--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M5           152.00   14.139 No_date    1:08   43.74 .588
     [XIMP=.26:TIMP=.29]
     [LOSS= 2 :CN= 75.7]
     [Pervious     area: IAper= 4.08:SLPP=2.00:LGP= 117.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1007.:MNI=.013:SCI=   .0]
003:0053--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M5           152.00   14.139 No_date    1:08   43.74  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M5.003
     remark:Runoff Hydrograph for M5
003:0054--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M5           152.00   14.139 No_date    1:08   43.74  n/a
                  +  02:C5          3809.40   95.592 No_date    1:38   27.12  n/a
     [DT= 1.00]  SUM=  03:N5          3961.40  105.795 No_date    1:35   27.76  n/a
003:0055--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N5          3961.40  105.795 No_date    1:35   27.76  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N5.003
     remark:Confluence Hydrograph for N5
  ** END OF RUN :   3

*******************************************************************************




 RUN:COMMAND#
 004:0001--------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  =   4 ]
#*******************************************************************************
#  Project Name: [Mosquito]    Project Number: [10418]
#  Model Version: [V12-final]
#  Date        : 22 Sept 2021
#  Modeled by    : [ Tyler Bauman ]
#  Checked by    : [ Calvin Paul ]
#  Company     : Rideau Valley Conservation Authority
#  License #   :  5329846
#*******************************************************************************
 004:0002--------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  =
      [SDT=30.00:SDUR=   3.00:PTOT=  74.46]
 004:0003--------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = C:\MODEL_~1\Current\MOSQUI~1\mosq_val.val
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Bilberry Creek Default Value File]
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
     Horton's infiltration equation parameters:
     [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
     Parameters for PERVIOUS surfaces in STANDHYD:
     [IAper=   4.67 mm] [LGP=90.00 m] [MNP= .250]
     Parameters for IMPERVIOUS surfaces in STANDHYD:
     [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .045]
     Parameters used in NASHYD:
     [Ia=   1.50 mm] [N= 3.00]
# Tributary A
 004:0004--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TA1          636.30    6.611 No_date    4:18   17.72 .238
      [CN= 58.9: N= 3.00]
      [Tp= 2.49:DT= 1.00]
 004:0005--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:TA1          636.30    6.611 No_date    4:18   17.72  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA1.004
      remark:Runoff Hydrograph for TA1
 004:0006--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TA1          636.30    6.611 No_date    4:18   17.72  n/a
      [RDT= 1.00] out<- 02:C6          636.30    6.264 No_date    4:49   17.72  n/a
      [L/S/n= 2390./ .199/.032]
      {Vmax= 1.102:Dmax= 1.195}
 004:0007--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C6          636.30    6.264 No_date    4:49   17.72  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C6.004
      remark:Routing Hydrograph for C6
 004:0008--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TA2          220.80    2.427 No_date    3:41   14.28 .192
      [CN= 53.7: N= 3.00]
      [Tp= 1.83:DT= 1.00]
 004:0009--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:TA2          220.80    2.427 No_date    3:41   14.28  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA2.004
      remark:Runoff Hydrograph for TA2
 004:0010--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:TA2          220.80    2.427 No_date    3:41   14.28  n/a
                   +  02:C6          636.30    6.264 No_date    4:49   17.72  n/a
      [DT= 1.00]  SUM=  05:N7          857.10    8.260 No_date    4:30   16.83  n/a
 004:0011--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           05:N7          857.10    8.260 No_date    4:30   16.83  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N7.004
      remark:Confluence Hydrograph for N7
# Tributary B
 004:0012--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TB1          331.30    5.190 No_date    3:13   16.07 .216
      [CN= 56.5: N= 3.00]
      [Tp= 1.36:DT= 1.00]
 004:0013--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:TB1          331.30    5.190 No_date    3:13   16.07  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB1.004
      remark:Runoff Hydrograph for TB1
 004:0014--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TB1          331.30    5.190 No_date    3:13   16.07  n/a
      [RDT= 1.00] out<- 02:C7          331.30    4.790 No_date    3:44   16.07  n/a
      [L/S/n= 1590./ .168/.028]
      {Vmax=  .945:Dmax= 1.273}
 004:0015--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C7          331.30    4.790 No_date    3:44   16.07  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C7.004
      remark:Routing Hydrograph for C7
 004:0016--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TB2          212.60    2.649 No_date    4:21   21.80 .293
      [CN= 64.3: N= 3.00]
      [Tp= 2.56:DT= 1.00]
 004:0017--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:TB2          212.60    2.649 No_date    4:21   21.80  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB2.004
      remark:Runoff Hydrograph for TB2
 004:0018--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:TB2          212.60    2.649 No_date    4:21   21.80  n/a
                   +  02:C7          331.30    4.790 No_date    3:44   16.07  n/a
      [DT= 1.00]  SUM=  06:N9          543.90    7.315 No_date    3:52   18.31  n/a
 004:0019--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           06:N9          543.90    7.315 No_date    3:52   18.31  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N9.004
      remark:Confluence Hydrograph for N9
# Tributary C
 004:0020--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     07:TC1          662.60   55.187 No_date    1:47   46.95 .631
      [XIMP=.41:TIMP=.45]
      [LOSS= 2 :CN= 70.9]
      [Pervious     area: IAper= 5.21:SLPP=2.00:LGP=  70.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=2102.:MNI=.013:SCI=   .0]
 004:0021--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           07:TC1          662.60   55.187 No_date    1:47   46.95  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TC1.004
      remark:Runoff Hydrograph for TC1
# Main Channel
 004:0022--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            05:N7          857.10    8.260 No_date    4:30   16.83  n/a
                   +  06:N9          543.90    7.315 No_date    3:52   18.31  n/a
      [DT= 1.00]  SUM=  03:J1         1401.00   15.245 No_date    4:07   17.41  n/a
 004:0023--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:J1         1401.00   15.245 No_date    4:07   17.41  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-J1.004
      remark:Confluence Hydrograph for J1
 004:0024--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:J1         1401.00   15.245 No_date    4:07   17.41  n/a
      [RDT= 1.00] out<- 02:C1         1401.00   13.815 No_date    4:47   17.41  n/a
      [L/S/n= 2670./ .205/.039]
      {Vmax= 1.071:Dmax= 2.003}
 004:0025--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C1         1401.00   13.815 No_date    4:47   17.41  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C1.004
      remark:Routing Hydrograph for C1
 004:0026--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:M1           874.00   12.552 No_date    3:36   18.07 .243
      [CN= 59.4: N= 3.00]
      [Tp= 1.76:DT= 1.00]
 004:0027--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
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    SAVE HYD           01:M1           874.00   12.552 No_date    3:36   18.07  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M1.004
     remark:Runoff Hydrograph for M1
004:0028--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M1           874.00   12.552 No_date    3:36   18.07  n/a
                   +  02:C1          1401.00   13.815 No_date    4:47   17.41  n/a
     [DT= 1.00]  SUM=  03:N1          2275.00   24.374 No_date    4:12   17.66  n/a
004:0029--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N1          2275.00   24.374 No_date    4:12   17.66  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N1.004
     remark:Confluence Hydrograph for N1
004:0030--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N1          2275.00   24.374 No_date    4:12   17.66  n/a
     [RDT= 1.00] out<- 02:C2          2275.00   23.272 No_date    4:41   17.66  n/a
     [L/S/n= 1580./ .178/.038]
     {Vmax=  .987:Dmax= 2.397}
004:0031--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C2          2275.00   23.272 No_date    4:41   17.66  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C2.004
     remark:Routing Hydrograph for C2
004:0032--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M2           222.30   22.947 No_date    1:39   49.93 .670
     [XIMP=.46:TIMP=.51]
     [LOSS= 2 :CN= 71.8]
     [Pervious     area: IAper= 4.99:SLPP=2.00:LGP=  68.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1217.:MNI=.013:SCI=   .0]
004:0033--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M2           222.30   22.947 No_date    1:39   49.93  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M2.004
     remark:Runoff Hydrograph for M2
004:0034--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M2           222.30   22.947 No_date    1:39   49.93  n/a
                   +  02:C2          2275.00   23.272 No_date    4:41   17.66  n/a
     [DT= 1.00]  SUM=  03:N2          2497.30   23.435 No_date    4:41   20.53  n/a
004:0035--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N2          2497.30   23.435 No_date    4:41   20.53  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N2.004
     remark:Confluence Hydrograph for N2
004:0036--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N2          2497.30   23.435 No_date    4:41   20.53  n/a
     [RDT= 1.00] out<- 02:C3          2497.30   23.322 No_date    4:49   20.53  n/a
     [L/S/n=  390./ .234/.039]
     {Vmax=  .871:Dmax= 1.808}
004:0037--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C3          2497.30   23.322 No_date    4:49   20.53  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C3.004
     remark:Routing Hydrograph for C3
004:0038--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M3           598.80   30.456 No_date    1:44   31.11 .418
     [XIMP=.28:TIMP=.31]
     [LOSS= 2 :CN= 53.4]
     [Pervious     area: IAper=11.08:SLPP=2.00:LGP=  98.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1998.:MNI=.013:SCI=   .0]
004:0039--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M3           598.80   30.456 No_date    1:44   31.11  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M3.004
     remark:Runoff Hydrograph for M3
004:0040--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M3           598.80   30.456 No_date    1:44   31.11  n/a
                   +  02:C3          2497.30   23.322 No_date    4:49   20.53  n/a
     [DT= 1.00]  SUM=  03:N3          3096.10   51.793 No_date    1:45   22.58  n/a
004:0041--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N3          3096.10   51.793 No_date    1:45   22.58  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N3.004
     remark:Confluence Hydrograph for N3
004:0042--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N3          3096.10   51.793 No_date    1:45   22.58  n/a
     [RDT= 1.00] out<- 02:C4          3096.10   46.103 No_date    2:11   22.58  n/a
     [L/S/n= 1460./ .297/.040]
     {Vmax= 1.473:Dmax= 3.094}
004:0043--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C4          3096.10   46.103 No_date    2:11   22.58  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C4.004
     remark:Routing Hydrograph for C4
004:0044--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M4            50.70    4.959 No_date    1:36   46.74 .628
     [XIMP=.29:TIMP=.32]
     [LOSS= 2 :CN= 78.0]
     [Pervious     area: IAper= 3.58:SLPP=2.00:LGP=  73.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 582.:MNI=.013:SCI=   .0]
004:0045--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M4            50.70    4.959 No_date    1:36   46.74  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M4.004
     remark:Runoff Hydrograph for M4
004:0046--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M4            50.70    4.959 No_date    1:36   46.74  n/a
                   +  02:C4          3096.10   46.103 No_date    2:11   22.58  n/a
     [DT= 1.00]  SUM=  04:N4          3146.80   49.553 No_date    2:08   22.97  n/a
004:0047--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           04:N4          3146.80   49.553 No_date    2:08   22.97  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N4.004
     remark:Confluence Hydrograph for N4
004:0048--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            04:N4          3146.80   49.553 No_date    2:08   22.97  n/a
                   +  07:TC1          662.60   55.187 No_date    1:47   46.95  n/a
     [DT= 1.00]  SUM=  03:J2          3809.40  101.277 No_date    1:54   27.14  n/a
004:0049--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:J2          3809.40  101.277 No_date    1:54   27.14  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-J2.004
     remark:Confluence Hydrograph for J2
004:0050--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:J2          3809.40  101.277 No_date    1:54   27.14  n/a
     [RDT= 1.00] out<- 02:C5          3809.40   90.811 No_date    2:10   27.14  n/a
     [L/S/n=  980./ .094/.031]
     {Vmax= 1.004:Dmax= 3.192}
004:0051--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C5          3809.40   90.811 No_date    2:10   27.14  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C5.004
     remark:Routing Hydrograph for C5
004:0052--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M5           152.00   11.189 No_date    1:41   43.77 .588
     [XIMP=.26:TIMP=.29]
     [LOSS= 2 :CN= 75.7]
     [Pervious     area: IAper= 4.08:SLPP=2.00:LGP= 117.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1007.:MNI=.013:SCI=   .0]
004:0053--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M5           152.00   11.189 No_date    1:41   43.77  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M5.004
     remark:Runoff Hydrograph for M5
004:0054--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M5           152.00   11.189 No_date    1:41   43.77  n/a
                   +  02:C5          3809.40   90.811 No_date    2:10   27.14  n/a
     [DT= 1.00]  SUM=  03:N5          3961.40  100.683 No_date    2:09   27.78  n/a
004:0055--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N5          3961.40  100.683 No_date    2:09   27.78  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N5.004
     remark:Confluence Hydrograph for N5
  ** END OF RUN :   5

************************************************************************************




 RUN:COMMAND#
 006:0001--------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  =   6 ]
#*********************************************************************************
#  Project Name: [Mosquito]    Project Number: [10418]
#  Model Version: [V12-final]
#  Date        : 22 Sept 2021
#  Modeled by    : [ Tyler Bauman ]
#  Checked by    : [ Calvin Paul ]
#  Company     : Rideau Valley Conservation Authority
#  License #   : 5329846
#*********************************************************************************
 006:0002--------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  =
      [SDT=10.00:SDUR=   6.00:PTOT=  88.42]
 006:0003--------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = C:\MODEL_~1\Current\MOSQUI~1\mosq_val.val
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Bilberry Creek Default Value File]
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=90.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .045]
      Parameters used in NASHYD:
      [Ia=   1.50 mm] [N= 3.00]
# Tributary A
 006:0004--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TA1          636.30    7.662 No_date    5:25   24.65 .279
      [CN= 58.9: N= 3.00]
      [Tp= 2.49:DT= 1.00]
 006:0005--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:TA1          636.30    7.662 No_date    5:25   24.65  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA1.006
      remark:Runoff Hydrograph for TA1
 006:0006--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TA1          636.30    7.662 No_date    5:25   24.65  n/a
      [RDT= 1.00] out<- 02:C6          636.30    7.450 No_date    5:57   24.65  n/a
      [L/S/n= 2390./ .199/.032]
      {Vmax= 1.145:Dmax= 1.279}
 006:0007--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C6          636.30    7.450 No_date    5:57   24.65  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C6.006
      remark:Routing Hydrograph for C6
 006:0008--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TA2          220.80    2.669 No_date    4:33   20.25 .229
      [CN= 53.7: N= 3.00]
      [Tp= 1.83:DT= 1.00]
 006:0009--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:TA2          220.80    2.669 No_date    4:33   20.25  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA2.006
      remark:Runoff Hydrograph for TA2
 006:0010--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:TA2          220.80    2.669 No_date    4:33   20.25  n/a
                    +  02:C6          636.30    7.450 No_date    5:57   24.65  n/a
      [DT= 1.00]  SUM=  05:N7          857.10    9.749 No_date    5:36   23.51  n/a
 006:0011--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           05:N7          857.10    9.749 No_date    5:36   23.51  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N7.006
      remark:Confluence Hydrograph for N7
# Tributary B
 006:0012--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TB1          331.30    5.481 No_date    3:51   22.55 .255
      [CN= 56.5: N= 3.00]
      [Tp= 1.36:DT= 1.00]
 006:0013--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:TB1          331.30    5.481 No_date    3:51   22.55  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB1.006
      remark:Runoff Hydrograph for TB1
 006:0014--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TB1          331.30    5.481 No_date    3:51   22.55  n/a
      [RDT= 1.00] out<- 02:C7          331.30    5.121 No_date    4:27   22.55  n/a
      [L/S/n= 1590./ .168/.028]
      {Vmax=  .921:Dmax= 1.297}
 006:0015--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C7          331.30    5.121 No_date    4:27   22.55  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C7.006
      remark:Routing Hydrograph for C7
 006:0016--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TB2          212.60    3.050 No_date    5:27   29.77 .337
      [CN= 64.3: N= 3.00]
      [Tp= 2.56:DT= 1.00]
 006:0017--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:TB2          212.60    3.050 No_date    5:27   29.77  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB2.006
      remark:Runoff Hydrograph for TB2
 006:0018--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:TB2          212.60    3.050 No_date    5:27   29.77  n/a
                    +  02:C7          331.30    5.121 No_date    4:27   22.55  n/a
      [DT= 1.00]  SUM=  06:N9          543.90    7.973 No_date    4:42   25.37  n/a
 006:0019--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           06:N9          543.90    7.973 No_date    4:42   25.37  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N9.006
      remark:Confluence Hydrograph for N9
# Tributary C
 006:0020--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     07:TC1          662.60   70.442 No_date    2:16   58.34 .660
      [XIMP=.41:TIMP=.45]
      [LOSS= 2 :CN= 70.9]
      [Pervious     area: IAper= 5.21:SLPP=2.00:LGP=  70.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=2102.:MNI=.013:SCI=   .0]
 006:0021--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
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     SAVE HYD           07:TC1         662.60   70.442 No_date    2:16   58.34  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TC1.006
      remark:Runoff Hydrograph for TC1
# Main Channel
 006:0022---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            05:N7          857.10    9.749 No_date    5:36   23.51  n/a
                    +   06:N9          543.90    7.973 No_date    4:42   25.37  n/a
      [DT= 1.00]  SUM=  03:J1         1401.00   17.364 No_date    5:09   24.23  n/a
 006:0023---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:J1          1401.00   17.364 No_date    5:09   24.23  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-J1.006
      remark:Confluence Hydrograph for J1
 006:0024---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:J1          1401.00   17.364 No_date    5:09   24.23  n/a
      [RDT= 1.00] out<- 02:C1          1401.00   16.398 No_date    5:51   24.23  n/a
      [L/S/n= 2670./ .205/.039]
      {Vmax= 1.094:Dmax= 2.090}
 006:0025---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C1          1401.00   16.398 No_date    5:51   24.23  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C1.006
      remark:Routing Hydrograph for C1
 006:0026---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:M1           874.00   13.597 No_date    4:24   25.09 .284
      [CN= 59.4: N= 3.00]
      [Tp= 1.76:DT= 1.00]
 006:0027---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M1           874.00   13.597 No_date    4:24   25.09  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M1.006
      remark:Runoff Hydrograph for M1
 006:0028---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M1           874.00   13.597 No_date    4:24   25.09  n/a
                    +   02:C1          1401.00   16.398 No_date    5:51   24.23  n/a
      [DT= 1.00]  SUM=  03:N1         2275.00   28.130 No_date    5:16   24.56  n/a
 006:0029---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N1          2275.00   28.130 No_date    5:16   24.56  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N1.006
      remark:Confluence Hydrograph for N1
 006:0030---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N1          2275.00   28.130 No_date    5:16   24.56  n/a
      [RDT= 1.00] out<- 02:C2          2275.00   27.357 No_date    5:46   24.56  n/a
      [L/S/n= 1580./ .178/.038]
      {Vmax=  .986:Dmax= 2.485}
 006:0031---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C2          2275.00   27.357 No_date    5:46   24.56  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C2.006
      remark:Routing Hydrograph for C2
 006:0032---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M2           222.30   31.881 No_date    2:09   61.67 .697
      [XIMP=.46:TIMP=.51]
      [LOSS= 2 :CN= 71.8]
      [Pervious     area: IAper= 4.99:SLPP=2.00:LGP=  68.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1217.:MNI=.013:SCI=   .0]
 006:0033---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M2           222.30   31.881 No_date    2:09   61.67  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M2.006
      remark:Runoff Hydrograph for M2
 006:0034---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M2           222.30   31.881 No_date    2:09   61.67  n/a
                    +   02:C2          2275.00   27.357 No_date    5:46   24.56  n/a
      [DT= 1.00]  SUM=  03:N2         2497.30   31.936 No_date    2:09   27.87  n/a
 006:0035---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N2          2497.30   31.936 No_date    2:09   27.87  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N2.006
      remark:Confluence Hydrograph for N2
 006:0036---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N2          2497.30   31.936 No_date    2:09   27.87  n/a
      [RDT= 1.00] out<- 02:C3          2497.30   29.493 No_date    5:47   27.87  n/a
      [L/S/n=  390./ .234/.039]
      {Vmax=  .896:Dmax= 1.940}
 006:0037---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C3          2497.30   29.493 No_date    5:47   27.87  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C3.006
      remark:Routing Hydrograph for C3
 006:0038---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M3           598.80   39.633 No_date    2:15   39.42 .446
      [XIMP=.28:TIMP=.31]
      [LOSS= 2 :CN= 53.4]
      [Pervious     area: IAper=11.08:SLPP=2.00:LGP=  98.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1998.:MNI=.013:SCI=   .0]
 006:0039---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M3           598.80   39.633 No_date    2:15   39.42  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M3.006
      remark:Runoff Hydrograph for M3
 006:0040---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M3           598.80   39.633 No_date    2:15   39.42  n/a
                    +   02:C3          2497.30   29.493 No_date    5:47   27.87  n/a
      [DT= 1.00]  SUM=  03:N3         3096.10   66.784 No_date    2:16   30.10  n/a
 006:0041---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N3          3096.10   66.784 No_date    2:16   30.10  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N3.006
      remark:Confluence Hydrograph for N3
 006:0042---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N3          3096.10   66.784 No_date    2:16   30.10  n/a
      [RDT= 1.00] out<- 02:C4          3096.10   52.451 No_date    2:38   30.10  n/a
      [L/S/n= 1460./ .297/.040]
      {Vmax= 1.367:Dmax= 3.303}
 006:0043---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C4          3096.10   52.451 No_date    2:38   30.10  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C4.006
      remark:Routing Hydrograph for C4
 006:0044---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M4            50.70    6.893 No_date    2:05   58.52 .662
      [XIMP=.29:TIMP=.32]
      [LOSS= 2 :CN= 78.0]
      [Pervious     area: IAper= 3.58:SLPP=2.00:LGP=  73.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 582.:MNI=.013:SCI=   .0]
 006:0045---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M4            50.70    6.893 No_date    2:05   58.52  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M4.006
      remark:Runoff Hydrograph for M4
 006:0046---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M4            50.70    6.893 No_date    2:05   58.52  n/a
                    +   02:C4          3096.10   52.451 No_date    2:38   30.10  n/a
      [DT= 1.00]  SUM=  04:N4         3146.80   56.004 No_date    2:34   30.56  n/a
 006:0047---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           04:N4          3146.80   56.004 No_date    2:34   30.56  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N4.006
      remark:Confluence Hydrograph for N4
 006:0048---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            04:N4          3146.80   56.004 No_date    2:34   30.56  n/a
                    +   07:TC1          662.60   70.442 No_date    2:16   58.34  n/a
      [DT= 1.00]  SUM=  03:J2         3809.40  121.006 No_date    2:23   35.39  n/a
 006:0049---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:J2          3809.40  121.006 No_date    2:23   35.39  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-J2.006
      remark:Confluence Hydrograph for J2
 006:0050---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:J2          3809.40  121.006 No_date    2:23   35.39  n/a
      [RDT= 1.00] out<- 02:C5          3809.40  101.075 No_date    2:35   35.39  n/a
      [L/S/n=  980./ .094/.031]
      {Vmax= 1.041:Dmax= 3.367}
 006:0051---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C5          3809.40  101.075 No_date    2:35   35.39  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C5.006
      remark:Routing Hydrograph for C5
 006:0052---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M5           152.00   15.120 No_date    2:08   55.12 .623
      [XIMP=.26:TIMP=.29]
      [LOSS= 2 :CN= 75.7]
      [Pervious     area: IAper= 4.08:SLPP=2.00:LGP= 117.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1007.:MNI=.013:SCI=   .0]
 006:0053---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M5           152.00   15.120 No_date    2:08   55.12  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M5.006
      remark:Runoff Hydrograph for M5
 006:0054---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M5           152.00   15.120 No_date    2:08   55.12  n/a
                    +   02:C5          3809.40  101.075 No_date    2:35   35.39  n/a
      [DT= 1.00]  SUM=  03:N5         3961.40  112.351 No_date    2:35   36.15  n/a
 006:0055---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N5          3961.40  112.351 No_date    2:35   36.15  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N5.006
      remark:Confluence Hydrograph for N5
  ** END OF RUN :   6

************************************************************************************




 RUN:COMMAND#
 007:0001---------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  =   7 ]
#************************************************************************
#  Project Name: [Mosquito]    Project Number: [10418]
#  Model Version: [V12-final]
#  Date        : 22 Sept 2021
#  Modeled by    : [ Tyler Bauman ]
#  Checked by    : [ Calvin Paul ]
#  Company     : Rideau Valley Conservation Authority
#  License #   :  5329846
#************************************************************************
 007:0002---------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  =
      [SDT=30.00:SDUR=   6.00:PTOT=  88.43]
 007:0003---------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = C:\MODEL_~1\Current\MOSQUI~1\mosq_val.val
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Bilberry Creek Default Value File]
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=90.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .045]
      Parameters used in NASHYD:
      [Ia=   1.50 mm] [N= 3.00]
# Tributary A
 007:0004---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TA1          636.30    8.356 No_date    6:06   24.65 .279
      [CN= 58.9: N= 3.00]
      [Tp= 2.49:DT= 1.00]
 007:0005---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:TA1          636.30    8.356 No_date    6:06   24.65  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA1.007
      remark:Runoff Hydrograph for TA1
 007:0006---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TA1          636.30    8.356 No_date    6:06   24.65  n/a
      [RDT= 1.00] out<- 02:C6          636.30    8.079 No_date    6:34   24.65  n/a
      [L/S/n= 2390./ .199/.032]
      {Vmax= 1.170:Dmax= 1.330}
 007:0007---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C6          636.30    8.079 No_date    6:34   24.65  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C6.007
      remark:Routing Hydrograph for C6
 007:0008---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TA2          220.80    2.975 No_date    5:17   20.25 .229
      [CN= 53.7: N= 3.00]
      [Tp= 1.83:DT= 1.00]
 007:0009---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:TA2          220.80    2.975 No_date    5:17   20.25  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA2.007
      remark:Runoff Hydrograph for TA2
 007:0010---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:TA2          220.80    2.975 No_date    5:17   20.25  n/a
                    +   02:C6          636.30    8.079 No_date    6:34   24.65  n/a
      [DT= 1.00]  SUM=  05:N7          857.10   10.632 No_date    6:16   23.52  n/a
 007:0011---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           05:N7          857.10   10.632 No_date    6:16   23.52  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N7.007
      remark:Confluence Hydrograph for N7
# Tributary B
 007:0012---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TB1          331.30    6.171 No_date    4:41   22.56 .255
      [CN= 56.5: N= 3.00]
      [Tp= 1.36:DT= 1.00]
 007:0013---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:TB1          331.30    6.171 No_date    4:41   22.56  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB1.007
      remark:Runoff Hydrograph for TB1
 007:0014---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TB1          331.30    6.171 No_date    4:41   22.56  n/a
      [RDT= 1.00] out<- 02:C7          331.30    5.672 No_date    5:20   22.56  n/a
      [L/S/n= 1590./ .168/.028]
      {Vmax=  .869:Dmax= 1.354}
 007:0015---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C7          331.30    5.672 No_date    5:20   22.56  n/a
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```
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C7.007
     remark:Routing Hydrograph for C7
 007:0016--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TB2          212.60    3.307 No_date    6:08   29.77 .337
      [CN= 64.3: N= 3.00]
      [Tp= 2.56:DT= 1.00]
 007:0017--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:TB2          212.60    3.307 No_date    6:08   29.77  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB2.007
      remark:Runoff Hydrograph for TB2
 007:0018--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:TB2          212.60    3.307 No_date    6:08   29.77  n/a
                   +  02:C7           331.30    5.672 No_date    5:20   22.56  n/a
      [DT= 1.00]  SUM=  06:N9           543.90    8.816 No_date    5:34   25.38  n/a
 007:0019--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           06:N9           543.90    8.816 No_date    5:34   25.38  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N9.007
      remark:Confluence Hydrograph for N9
# Tributary C
 007:0020--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     07:TC1          662.60   62.334 No_date    3:15   58.35 .660
      [XIMP=.41:TIMP=.45]
      [LOSS= 2 :CN= 70.9]
      [Pervious     area: IAper= 5.21:SLPP=2.00:LGP=  70.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=2102.:MNI=.013:SCI=   .0]
 007:0021--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           07:TC1          662.60   62.334 No_date    3:15   58.35  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TC1.007
      remark:Runoff Hydrograph for TC1
# Main Channel
 007:0022--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            05:N7           857.10   10.632 No_date    6:16   23.52  n/a
                   +  06:N9           543.90    8.816 No_date    5:34   25.38  n/a
      [DT= 1.00]  SUM=  03:J1          1401.00   19.111 No_date    5:54   24.24  n/a
 007:0023--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:J1           1401.00   19.111 No_date    5:54   24.24  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-J1.007
      remark:Confluence Hydrograph for J1
 007:0024--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:J1           1401.00   19.111 No_date    5:54   24.24  n/a
      [RDT= 1.00] out<- 02:C1          1401.00   17.947 No_date    6:32   24.24  n/a
      [L/S/n= 2670./ .205/.039]
      {Vmax= 1.112:Dmax= 2.154}
 007:0025--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C1           1401.00   17.947 No_date    6:32   24.24  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C1.007
      remark:Routing Hydrograph for C1
 007:0026--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:M1           874.00   15.095 No_date    5:09   25.10 .284
      [CN= 59.4: N= 3.00]
      [Tp= 1.76:DT= 1.00]
 007:0027--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M1           874.00   15.095 No_date    5:09   25.10  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M1.007
      remark:Runoff Hydrograph for M1
 007:0028--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M1           874.00   15.095 No_date    5:09   25.10  n/a
                   +  02:C1          1401.00   17.947 No_date    6:32   24.24  n/a
      [DT= 1.00]  SUM=  03:N1          2275.00   30.870 No_date    5:59   24.57  n/a
 007:0029--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N1           2275.00   30.870 No_date    5:59   24.57  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N1.007
      remark:Confluence Hydrograph for N1
 007:0030--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N1           2275.00   30.870 No_date    5:59   24.57  n/a
      [RDT= 1.00] out<- 02:C2          2275.00   29.902 No_date    6:26   24.57  n/a
      [L/S/n= 1580./ .178/.038]
      {Vmax=  .991:Dmax= 2.546}
 007:0031--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C2           2275.00   29.902 No_date    6:26   24.57  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C2.007
      remark:Routing Hydrograph for C2
 007:0032--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M2            222.30   25.763 No_date    3:08   61.68 .697
      [XIMP=.46:TIMP=.51]
      [LOSS= 2 :CN= 71.8]
      [Pervious     area: IAper= 4.99:SLPP=2.00:LGP=  68.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1217.:MNI=.013:SCI=   .0]
 007:0033--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M2            222.30   25.763 No_date    3:08   61.68  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M2.007
      remark:Runoff Hydrograph for M2
 007:0034--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M2            222.30   25.763 No_date    3:08   61.68  n/a
                   +  02:C2          2275.00   29.902 No_date    6:26   24.57  n/a
      [DT= 1.00]  SUM=  03:N2          2497.30   31.564 No_date    6:08   27.87  n/a
 007:0035--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N2           2497.30   31.564 No_date    6:08   27.87  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N2.007
      remark:Confluence Hydrograph for N2
 007:0036--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N2           2497.30   31.564 No_date    6:08   27.87  n/a
      [RDT= 1.00] out<- 02:C3          2497.30   31.419 No_date    6:10   27.87  n/a
      [L/S/n=  390./ .234/.039]
      {Vmax=  .895:Dmax= 1.935}
 007:0037--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C3           2497.30   31.419 No_date    6:10   27.87  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C3.007
      remark:Routing Hydrograph for C3
 007:0038--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M3            598.80   34.025 No_date    3:13   39.43 .446
      [XIMP=.28:TIMP=.31]
      [LOSS= 2 :CN= 53.4]
      [Pervious     area: IAper=11.08:SLPP=2.00:LGP=  98.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1998.:MNI=.013:SCI=   .0]
 007:0039--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M3            598.80   34.025 No_date    3:13   39.43  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M3.007
      remark:Runoff Hydrograph for M3
 007:0040--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M3            598.80   34.025 No_date    3:13   39.43  n/a
                   +  02:C3          2497.30   31.419 No_date    6:10   27.87  n/a
      [DT= 1.00]  SUM=  03:N3          3096.10   57.951 No_date    3:14   30.11  n/a
 007:0041--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N3           3096.10   57.951 No_date    3:14   30.11  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N3.007
      remark:Confluence Hydrograph for N3
 007:0042--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N3           3096.10   57.951 No_date    3:14   30.11  n/a
      [RDT= 1.00] out<- 02:C4          3096.10   50.251 No_date    3:39   30.11  n/a
      [L/S/n= 1460./ .297/.040]
      {Vmax= 1.393:Dmax= 3.191}
 007:0043--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C4           3096.10   50.251 No_date    3:39   30.11  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C4.007
      remark:Routing Hydrograph for C4
 007:0044--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M4            50.70    5.834 No_date    3:05   58.53 .662
      [XIMP=.29:TIMP=.32]
      [LOSS= 2 :CN= 78.0]
      [Pervious     area: IAper= 3.58:SLPP=2.00:LGP=  73.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 582.:MNI=.013:SCI=   .0]
 007:0045--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M4            50.70    5.834 No_date    3:05   58.53  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M4.007
      remark:Runoff Hydrograph for M4
 007:0046--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M4            50.70    5.834 No_date    3:05   58.53  n/a
                   +  02:C4          3096.10   50.251 No_date    3:39   30.11  n/a
      [DT= 1.00]  SUM=  04:N4          3146.80   53.863 No_date    3:33   30.57  n/a
 007:0047--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           04:N4           3146.80   53.863 No_date    3:33   30.57  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N4.007
      remark:Confluence Hydrograph for N4
 007:0048--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            04:N4           3146.80   53.863 No_date    3:33   30.57  n/a
                   +  07:TC1           662.60   62.334 No_date    3:15   58.35  n/a
      [DT= 1.00]  SUM=  03:J2          3809.40  111.999 No_date    3:20   35.40  n/a
 007:0049--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:J2           3809.40  111.999 No_date    3:20   35.40  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-J2.007
      remark:Confluence Hydrograph for J2
 007:0050--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:J2           3809.40  111.999 No_date    3:20   35.40  n/a
      [RDT= 1.00] out<- 02:C5          3809.40   98.534 No_date    3:37   35.40  n/a
      [L/S/n=  980./ .094/.031]
      {Vmax= 1.024:Dmax= 3.289}
 007:0051--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C5           3809.40   98.534 No_date    3:37   35.40  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C5.007
      remark:Routing Hydrograph for C5
 007:0052--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M5            152.00   13.380 No_date    3:10   55.13 .623
      [XIMP=.26:TIMP=.29]
      [LOSS= 2 :CN= 75.7]
      [Pervious     area: IAper= 4.08:SLPP=2.00:LGP= 117.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1007.:MNI=.013:SCI=   .0]
 007:0053--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M5            152.00   13.380 No_date    3:10   55.13  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M5.007
      remark:Runoff Hydrograph for M5
 007:0054--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M5            152.00   13.380 No_date    3:10   55.13  n/a
                   +  02:C5          3809.40   98.534 No_date    3:37   35.40  n/a
      [DT= 1.00]  SUM=  03:N5          3961.40  109.433 No_date    3:35   36.15  n/a
 007:0055--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N5           3961.40  109.433 No_date    3:35   36.15  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N5.007
      remark:Confluence Hydrograph for N5
  ** END OF RUN :  11

********************************************************************************




 RUN:COMMAND#
 012:0001--------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  =  12 ]
 #*******************************************************************************
 #  Project Name: [Mosquito]    Project Number: [10418]
 #  Model Version: [V12-final]
 #  Date        : 22 Sept 2021
 #  Modeled by    : [ Tyler Bauman ]
 #  Checked by    : [ Calvin Paul ]
 #  Company     : Rideau Valley Conservation Authority
 #  License #   :  5329846
 #*******************************************************************************
 012:0002--------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  =
      [SDT=10.00:SDUR=  12.00:PTOT= 104.44]
 012:0003--------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = C:\MODEL_~1\Current\MOSQUI~1\mosq_val.val
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Bilberry Creek Default Value File]
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=90.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .045]
      Parameters used in NASHYD:
      [Ia=   1.50 mm] [N= 3.00]
 # Tributary A
 012:0004--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TA1          636.30    8.618 No_date    7:19   33.48 .321
      [CN= 58.9: N= 3.00]
      [Tp= 2.49:DT= 1.00]
 012:0005--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:TA1          636.30    8.618 No_date    7:19   33.48  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA1.012
      remark:Runoff Hydrograph for TA1
 012:0006--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TA1          636.30    8.618 No_date    7:19   33.48  n/a
      [RDT= 1.00] out<- 02:C6          636.30    8.380 No_date    7:50   33.48  n/a
      [L/S/n= 2390./ .199/.032]
      {Vmax= 1.180:Dmax= 1.349}
 012:0007--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C6           636.30    8.380 No_date    7:50   33.48  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C6.012
      remark:Routing Hydrograph for C6
 012:0008--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TA2          220.80    3.042 No_date    6:28   27.97 .268
      [CN= 53.7: N= 3.00]
      [Tp= 1.83:DT= 1.00]
 012:0009--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:TA2          220.80    3.042 No_date    6:28   27.97  n/a
```

```
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA2.012
     remark:Runoff Hydrograph for TA2
 012:0010--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:TA2          220.80    3.042 No_date    6:28   27.97  n/a
                    +  02:C6           636.30    8.380 No_date    7:50   33.48  n/a
      [DT= 1.00]  SUM=  05:N7           857.10   10.998 No_date    7:30   32.06  n/a
 012:0011--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           05:N7           857.10   10.998 No_date    7:30   32.06  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N7.012
      remark:Confluence Hydrograph for N7
# Tributary B
 012:0012--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TB1          331.30    6.260 No_date    5:47   30.87 .296
      [CN= 56.5: N= 3.00]
      [Tp= 1.36:DT= 1.00]
 012:0013--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:TB1          331.30    6.260 No_date    5:47   30.87  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB1.012
      remark:Runoff Hydrograph for TB1
 012:0014--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TB1          331.30    6.260 No_date    5:47   30.87  n/a
      [RDT= 1.00] out<- 02:C7           331.30    5.777 No_date    6:29   30.87  n/a
      [L/S/n= 1590./ .168/.028]
      {Vmax=  .864:Dmax= 1.360}
 012:0015--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C7           331.30    5.777 No_date    6:29   30.87  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C7.012
      remark:Routing Hydrograph for C7
 012:0016--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TB2          212.60    3.406 No_date    7:21   39.78 .381
      [CN= 64.3: N= 3.00]
      [Tp= 2.56:DT= 1.00]
 012:0017--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:TB2          212.60    3.406 No_date    7:21   39.78  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB2.012
      remark:Runoff Hydrograph for TB2
 012:0018--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:TB2          212.60    3.406 No_date    7:21   39.78  n/a
                    +  02:C7           331.30    5.777 No_date    6:29   30.87  n/a
      [DT= 1.00]  SUM=  06:N9           543.90    8.989 No_date    6:40   34.35  n/a
 012:0019--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           06:N9           543.90    8.989 No_date    6:40   34.35  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N9.012
      remark:Confluence Hydrograph for N9
# Tributary C
 012:0020--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     07:TC1          662.60   73.885 No_date    4:17   71.85 .688
      [XIMP=.41:TIMP=.45]
      [LOSS= 2 :CN= 70.9]
      [Pervious     area: IAper= 5.21:SLPP=2.00:LGP=  70.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=2102.:MNI=.013:SCI=   .0]
 012:0021--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           07:TC1          662.60   73.885 No_date    4:17   71.85  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TC1.012
      remark:Runoff Hydrograph for TC1
# Main Channel
 012:0022--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            05:N7           857.10   10.998 No_date    7:30   32.06  n/a
                    +  06:N9           543.90    8.989 No_date    6:40   34.35  n/a
      [DT= 1.00]  SUM=  03:J1          1401.00   19.643 No_date    7:07   32.95  n/a
 012:0023--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:J1          1401.00   19.643 No_date    7:07   32.95  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-J1.012
      remark:Confluence Hydrograph for J1
 012:0024--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:J1          1401.00   19.643 No_date    7:07   32.95  n/a
      [RDT= 1.00] out<- 02:C1          1401.00   18.579 No_date    7:46   32.95  n/a
      [L/S/n= 2670./ .205/.039]
      {Vmax= 1.118:Dmax= 2.173}
 012:0025--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C1          1401.00   18.579 No_date    7:46   32.95  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C1.012
      remark:Routing Hydrograph for C1
 012:0026--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:M1           874.00   15.387 No_date    6:19   34.03 .326
      [CN= 59.4: N= 3.00]
      [Tp= 1.76:DT= 1.00]
 012:0027--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M1           874.00   15.387 No_date    6:19   34.03  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M1.012
      remark:Runoff Hydrograph for M1
 012:0028--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M1           874.00   15.387 No_date    6:19   34.03  n/a
                    +  02:C1          1401.00   18.579 No_date    7:46   32.95  n/a
      [DT= 1.00]  SUM=  03:N1          2275.00   31.806 No_date    7:11   33.37  n/a
 012:0029--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N1          2275.00   31.806 No_date    7:11   33.37  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N1.012
      remark:Confluence Hydrograph for N1
 012:0030--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N1          2275.00   31.806 No_date    7:11   33.37  n/a
      [RDT= 1.00] out<- 02:C2          2275.00   30.931 No_date    7:39   33.37  n/a
      [L/S/n= 1580./ .178/.038]
      {Vmax=  .992:Dmax= 2.567}
 012:0031--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C2          2275.00   30.931 No_date    7:39   33.37  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C2.012
      remark:Routing Hydrograph for C2
 012:0032--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M2           222.30   33.210 No_date    4:10   75.55 .723
      [XIMP=.46:TIMP=.51]
      [LOSS= 2 :CN= 71.8]
      [Pervious     area: IAper= 4.99:SLPP=2.00:LGP=  68.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1217.:MNI=.013:SCI=   .0]
 012:0033--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M2           222.30   33.210 No_date    4:10   75.55  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M2.012
      remark:Runoff Hydrograph for M2
 012:0034--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M2           222.30   33.210 No_date    4:10   75.55  n/a
                    +  02:C2          2275.00   30.931 No_date    7:39   33.37  n/a
      [DT= 1.00]  SUM=  03:N2          2497.30   33.355 No_date    4:10   37.12  n/a
 012:0035--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N2          2497.30   33.355 No_date    4:10   37.12  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N2.012
      remark:Confluence Hydrograph for N2
 012:0036--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N2          2497.30   33.355 No_date    4:10   37.12  n/a
      [RDT= 1.00] out<- 02:C3          2497.30   33.146 No_date    7:40   37.12  n/a
      [L/S/n=  390./ .234/.039]
      {Vmax=  .902:Dmax= 1.961}
 012:0037--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C3          2497.30   33.146 No_date    7:40   37.12  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C3.012
      remark:Routing Hydrograph for C3
 012:0038--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M3           598.80   41.186 No_date    4:15   49.60 .475
      [XIMP=.28:TIMP=.31]
      [LOSS= 2 :CN= 53.4]
      [Pervious     area: IAper=11.08:SLPP=2.00:LGP=  98.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1998.:MNI=.013:SCI=   .0]
 012:0039--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M3           598.80   41.186 No_date    4:15   49.60  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M3.012
      remark:Runoff Hydrograph for M3
 012:0040--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M3           598.80   41.186 No_date    4:15   49.60  n/a
                    +  02:C3          2497.30   33.146 No_date    7:40   37.12  n/a
      [DT= 1.00]  SUM=  03:N3          3096.10   69.853 No_date    4:16   39.53  n/a
 012:0041--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N3          3096.10   69.853 No_date    4:16   39.53  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N3.012
      remark:Confluence Hydrograph for N3
 012:0042--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N3          3096.10   69.853 No_date    4:16   39.53  n/a
      [RDT= 1.00] out<- 02:C4          3096.10   54.846 No_date    4:40   39.53  n/a
      [L/S/n= 1460./ .297/.040]
      {Vmax= 1.359:Dmax= 3.341}
 012:0043--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C4          3096.10   54.846 No_date    4:40   39.53  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C4.012
      remark:Routing Hydrograph for C4
 012:0044--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M4            50.70    7.280 No_date    4:05   72.48 .694
      [XIMP=.29:TIMP=.32]
      [LOSS= 2 :CN= 78.0]
      [Pervious     area: IAper= 3.58:SLPP=2.00:LGP=  73.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 582.:MNI=.013:SCI=   .0]
 012:0045--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M4            50.70    7.280 No_date    4:05   72.48  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M4.012
      remark:Runoff Hydrograph for M4
 012:0046--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M4            50.70    7.280 No_date    4:05   72.48  n/a
                    +  02:C4          3096.10   54.846 No_date    4:40   39.53  n/a
      [DT= 1.00]  SUM=  04:N4          3146.80   58.547 No_date    4:36   40.06  n/a
 012:0047--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           04:N4          3146.80   58.547 No_date    4:36   40.06  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N4.012
      remark:Confluence Hydrograph for N4
 012:0048--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            04:N4          3146.80   58.547 No_date    4:36   40.06  n/a
                    +  07:TC1          662.60   73.885 No_date    4:17   71.85  n/a
      [DT= 1.00]  SUM=  03:J2          3809.40  127.177 No_date    4:24   45.59  n/a
 012:0049--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:J2          3809.40  127.177 No_date    4:24   45.59  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-J2.012
      remark:Confluence Hydrograph for J2
 012:0050--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:J2          3809.40  127.177 No_date    4:24   45.59  n/a
      [RDT= 1.00] out<- 02:C5          3809.40  106.471 No_date    4:37   45.59  n/a
      [L/S/n=  980./ .094/.031]
      {Vmax= 1.052:Dmax= 3.417}
 012:0051--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C5          3809.40  106.471 No_date    4:37   45.59  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C5.012
      remark:Routing Hydrograph for C5
 012:0052--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M5           152.00   15.966 No_date    4:08   68.65 .657
      [XIMP=.26:TIMP=.29]
      [LOSS= 2 :CN= 75.7]
      [Pervious     area: IAper= 4.08:SLPP=2.00:LGP= 117.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1007.:MNI=.013:SCI=   .0]
 012:0053--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M5           152.00   15.966 No_date    4:08   68.65  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M5.012
      remark:Runoff Hydrograph for M5
 012:0054--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M5           152.00   15.966 No_date    4:08   68.65  n/a
                    +  02:C5          3809.40  106.471 No_date    4:37   45.59  n/a
      [DT= 1.00]  SUM=  03:N5          3961.40  118.297 No_date    4:33   46.48  n/a
 012:0055--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N5          3961.40  118.297 No_date    4:33   46.48  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N5.012
      remark:Confluence Hydrograph for N5
  ** END OF RUN :  12

*******************************************************************************




 RUN:COMMAND#
 013:0001--------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  =  13 ]
#*******************************************************************************
#  Project Name: [Mosquito]    Project Number: [10418]
#  Model Version: [V12-final]
#  Date        : 22 Sept 2021
#  Modeled by    : [ Tyler Bauman ]
#  Checked by    : [ Calvin Paul ]
#  Company     : Rideau Valley Conservation Authority
#  License #   :  5329846
#*******************************************************************************
 013:0002--------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  =
      [SDT=30.00:SDUR=  12.00:PTOT= 104.44]
 013:0003--------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = C:\MODEL_~1\Current\MOSQUI~1\mosq_val.val
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Bilberry Creek Default Value File]
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=90.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .045]
```

```
     Parameters used in NASHYD:
     [Ia=   1.50 mm] [N= 3.00]
# Tributary A
 013:0004---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TA1          636.30    9.678 No_date    8:59   33.48 .321
      [CN= 58.9: N= 3.00]
      [Tp= 2.49:DT= 1.00]
 013:0005---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:TA1          636.30    9.678 No_date    8:59   33.48  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA1.013
      remark:Runoff Hydrograph for TA1
 013:0006---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TA1          636.30    9.678 No_date    8:59   33.48  n/a
      [RDT= 1.00] out<- 02:C6           636.30    9.358 No_date    9:34   33.48  n/a
      [L/S/n= 2390./ .199/.032]
      {Vmax= 1.151:Dmax= 1.410}
 013:0007---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C6           636.30    9.358 No_date    9:34   33.48  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C6.013
      remark:Routing Hydrograph for C6
 013:0008---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TA2          220.80    3.487 No_date    8:09   27.97 .268
      [CN= 53.7: N= 3.00]
      [Tp= 1.83:DT= 1.00]
 013:0009---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:TA2          220.80    3.487 No_date    8:09   27.97  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA2.013
      remark:Runoff Hydrograph for TA2
 013:0010---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:TA2          220.80    3.487 No_date    8:09   27.97  n/a
                      +  02:C6           636.30    9.358 No_date    9:34   33.48  n/a
      [DT= 1.00]  SUM=  05:N7           857.10   12.251 No_date    9:16   32.06  n/a
 013:0011---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           05:N7           857.10   12.251 No_date    9:16   32.06  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N7.013
      remark:Confluence Hydrograph for N7
# Tributary B
 013:0012---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TB1          331.30    7.225 No_date    7:32   30.87 .296
      [CN= 56.5: N= 3.00]
      [Tp= 1.36:DT= 1.00]
 013:0013---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:TB1          331.30    7.225 No_date    7:32   30.87  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB1.013
      remark:Runoff Hydrograph for TB1
 013:0014---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TB1          331.30    7.225 No_date    7:32   30.87  n/a
      [RDT= 1.00] out<- 02:C7           331.30    6.546 No_date    8:14   30.87  n/a
      [L/S/n= 1590./ .168/.028]
      {Vmax=  .814:Dmax= 1.423}
 013:0015---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C7           331.30    6.546 No_date    8:14   30.87  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C7.013
      remark:Routing Hydrograph for C7
 013:0016---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TB2          212.60    3.793 No_date    9:01   39.78 .381
      [CN= 64.3: N= 3.00]
      [Tp= 2.56:DT= 1.00]
 013:0017---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:TB2          212.60    3.793 No_date    9:01   39.78  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB2.013
      remark:Runoff Hydrograph for TB2
 013:0018---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:TB2          212.60    3.793 No_date    9:01   39.78  n/a
                      +  02:C7           331.30    6.546 No_date    8:14   30.87  n/a
      [DT= 1.00]  SUM=  06:N9           543.90   10.158 No_date    8:30   34.35  n/a
 013:0019---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           06:N9           543.90   10.158 No_date    8:30   34.35  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N9.013
      remark:Confluence Hydrograph for N9
# Tributary C
 013:0020---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     07:TC1          662.60   69.978 No_date    6:13   71.85 .688
      [XIMP=.41:TIMP=.45]
      [LOSS= 2 :CN= 70.9]
      [Pervious     area: IAper= 5.21:SLPP=2.00:LGP=  70.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=2102.:MNI=.013:SCI=   .0]
 013:0021---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           07:TC1          662.60   69.978 No_date    6:13   71.85  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TC1.013
      remark:Runoff Hydrograph for TC1
# Main Channel
 013:0022---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            05:N7           857.10   12.251 No_date    9:16   32.06  n/a
                      +  06:N9           543.90   10.158 No_date    8:30   34.35  n/a
      [DT= 1.00]  SUM=  03:J1          1401.00   22.083 No_date    8:46   32.95  n/a
 013:0023---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:J1          1401.00   22.083 No_date    8:46   32.95  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-J1.013
      remark:Confluence Hydrograph for J1
 013:0024---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:J1          1401.00   22.083 No_date    8:46   32.95  n/a
      [RDT= 1.00] out<- 02:C1          1401.00   20.953 No_date    9:26   32.95  n/a
      [L/S/n= 2670./ .205/.039]
      {Vmax= 1.130:Dmax= 2.265}
 013:0025---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C1          1401.00   20.953 No_date    9:26   32.95  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C1.013
      remark:Routing Hydrograph for C1
 013:0026---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:M1           874.00   17.487 No_date    8:01   34.03 .326
      [CN= 59.4: N= 3.00]
      [Tp= 1.76:DT= 1.00]
 013:0027---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M1           874.00   17.487 No_date    8:01   34.03  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M1.013
      remark:Runoff Hydrograph for M1
 013:0028---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M1           874.00   17.487 No_date    8:01   34.03  n/a
                      +  02:C1          1401.00   20.953 No_date    9:26   32.95  n/a
      [DT= 1.00]  SUM=  03:N1          2275.00   35.788 No_date    8:51   33.37  n/a
 013:0029---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N1          2275.00   35.788 No_date    8:51   33.37  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N1.013
      remark:Confluence Hydrograph for N1
 013:0030---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N1          2275.00   35.788 No_date    8:51   33.37  n/a
      [RDT= 1.00] out<- 02:C2          2275.00   34.819 No_date    9:19   33.37  n/a
      [L/S/n= 1580./ .178/.038]
      {Vmax= 1.006:Dmax= 2.647}
 013:0031---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C2          2275.00   34.819 No_date    9:19   33.37  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C2.013
      remark:Routing Hydrograph for C2
 013:0032---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M2           222.30   28.913 No_date    6:07   75.56 .723
      [XIMP=.46:TIMP=.51]
      [LOSS= 2 :CN= 71.8]
      [Pervious     area: IAper= 4.99:SLPP=2.00:LGP=  68.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1217.:MNI=.013:SCI=   .0]
 013:0033---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M2           222.30   28.913 No_date    6:07   75.56  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M2.013
      remark:Runoff Hydrograph for M2
 013:0034---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M2           222.30   28.913 No_date    6:07   75.56  n/a
                      +  02:C2          2275.00   34.819 No_date    9:19   33.37  n/a
      [DT= 1.00]  SUM=  03:N2          2497.30   37.253 No_date    9:08   37.12  n/a
 013:0035---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N2          2497.30   37.253 No_date    9:08   37.12  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N2.013
      remark:Confluence Hydrograph for N2
 013:0036---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N2          2497.30   37.253 No_date    9:08   37.12  n/a
      [RDT= 1.00] out<- 02:C3          2497.30   37.150 No_date    9:15   37.12  n/a
      [L/S/n=  390./ .234/.039]
      {Vmax=  .920:Dmax= 2.011}
 013:0037---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C3          2497.30   37.150 No_date    9:15   37.12  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C3.013
      remark:Routing Hydrograph for C3
 013:0038---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M3           598.80   38.411 No_date    6:13   49.60 .475
      [XIMP=.28:TIMP=.31]
      [LOSS= 2 :CN= 53.4]
      [Pervious     area: IAper=11.08:SLPP=2.00:LGP=  98.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1998.:MNI=.013:SCI=   .0]
 013:0039---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M3           598.80   38.411 No_date    6:13   49.60  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M3.013
      remark:Runoff Hydrograph for M3
 013:0040---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M3           598.80   38.411 No_date    6:13   49.60  n/a
                      +  02:C3          2497.30   37.150 No_date    9:15   37.12  n/a
      [DT= 1.00]  SUM=  03:N3          3096.10   66.086 No_date    6:14   39.54  n/a
 013:0041---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N3          3096.10   66.086 No_date    6:14   39.54  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N3.013
      remark:Confluence Hydrograph for N3
 013:0042---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N3          3096.10   66.086 No_date    6:14   39.54  n/a
      [RDT= 1.00] out<- 02:C4          3096.10   55.283 No_date    6:38   39.54  n/a
      [L/S/n= 1460./ .297/.040]
      {Vmax= 1.369:Dmax= 3.294}
 013:0043---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C4          3096.10   55.283 No_date    6:38   39.54  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C4.013
      remark:Routing Hydrograph for C4
 013:0044---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M4            50.70    6.703 No_date    6:04   72.49 .694
      [XIMP=.29:TIMP=.32]
      [LOSS= 2 :CN= 78.0]
      [Pervious     area: IAper= 3.58:SLPP=2.00:LGP=  73.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 582.:MNI=.013:SCI=   .0]
 013:0045---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M4            50.70    6.703 No_date    6:04   72.49  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M4.013
      remark:Runoff Hydrograph for M4
 013:0046---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M4            50.70    6.703 No_date    6:04   72.49  n/a
                      +  02:C4          3096.10   55.283 No_date    6:38   39.54  n/a
      [DT= 1.00]  SUM=  04:N4          3146.80   58.867 No_date    6:32   40.07  n/a
 013:0047---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           04:N4          3146.80   58.867 No_date    6:32   40.07  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N4.013
      remark:Confluence Hydrograph for N4
 013:0048---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            04:N4          3146.80   58.867 No_date    6:32   40.07  n/a
                      +  07:TC1          662.60   69.978 No_date    6:13   71.85  n/a
      [DT= 1.00]  SUM=  03:J2          3809.40  124.035 No_date    6:17   45.60  n/a
 013:0049---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:J2          3809.40  124.035 No_date    6:17   45.60  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-J2.013
      remark:Confluence Hydrograph for J2
 013:0050---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:J2          3809.40  124.035 No_date    6:17   45.60  n/a
      [RDT= 1.00] out<- 02:C5          3809.40  106.952 No_date    6:33   45.60  n/a
      [L/S/n=  980./ .094/.031]
      {Vmax= 1.047:Dmax= 3.391}
 013:0051---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C5          3809.40  106.952 No_date    6:33   45.60  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C5.013
      remark:Routing Hydrograph for C5
 013:0052---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M5           152.00   15.547 No_date    6:09   68.65 .657
      [XIMP=.26:TIMP=.29]
      [LOSS= 2 :CN= 75.7]
      [Pervious     area: IAper= 4.08:SLPP=2.00:LGP= 117.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1007.:MNI=.013:SCI=   .0]
 013:0053---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M5           152.00   15.547 No_date    6:09   68.65  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M5.013
      remark:Runoff Hydrograph for M5
 013:0054---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M5           152.00   15.547 No_date    6:09   68.65  n/a
                      +  02:C5          3809.40  106.952 No_date    6:33   45.60  n/a
      [DT= 1.00]  SUM=  03:N5          3961.40  119.111 No_date    6:29   46.48  n/a
 013:0055---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N5          3961.40  119.111 No_date    6:29   46.48  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N5.013
      remark:Confluence Hydrograph for N5
  ** END OF RUN :  23

 ************************************************************************



 RUN:COMMAND#
 024:0001---------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  =  24 ]
```

```
#*****************************************************************************
#  Project Name: [Mosquito]    Project Number: [10418]
#  Model Version: [V12-final]
#  Date        : 22 Sept 2021
#  Modeled by  : [ Tyler Bauman ]
#  Checked by  : [ Calvin Paul ]
#  Company     : Rideau Valley Conservation Authority
#  License #   :  5329846
#*****************************************************************************
 024:0002------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  =
      [SDT=10.00:SDUR=  24.00:PTOT= 123.02]
 024:0003------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = C:\MODEL_~1\Current\MOSQUI~1\mosq_val.val
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Bilberry Creek Default Value File]
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=90.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .045]
      Parameters used in NASHYD:
      [Ia=   1.50 mm] [N= 3.00]
# Tributary A
 024:0004---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TA1          636.30    9.731 No_date   11:12   44.71 .363
      [CN= 58.9: N= 3.00]
      [Tp= 2.49:DT= 1.00]
 024:0005---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:TA1          636.30    9.731 No_date   11:12   44.71  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA1.024
      remark:Runoff Hydrograph for TA1
 024:0006---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TA1          636.30    9.731 No_date   11:12   44.71  n/a
      [RDT= 1.00] out<- 02:C6           636.30    9.411 No_date   11:56   44.71  n/a
      [L/S/n= 2390./ .199/.032]
      {Vmax= 1.149:Dmax= 1.413}
 024:0007---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C6           636.30    9.411 No_date   11:56   44.71  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C6.024
      remark:Routing Hydrograph for C6
 024:0008---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TA2          220.80    3.481 No_date   10:23   37.93 .308
      [CN= 53.7: N= 3.00]
      [Tp= 1.83:DT= 1.00]
 024:0009---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:TA2          220.80    3.481 No_date   10:23   37.93  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA2.024
      remark:Runoff Hydrograph for TA2
 024:0010---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:TA2          220.80    3.481 No_date   10:23   37.93  n/a
                    +   02:C6           636.30    9.411 No_date   11:56   44.71  n/a
      [DT= 1.00]  SUM=  05:N7           857.10   12.320 No_date   11:29   42.97  n/a
 024:0011---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           05:N7           857.10   12.320 No_date   11:29   42.97  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N7.024
      remark:Confluence Hydrograph for N7
# Tributary B
 024:0012---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TB1          331.30    7.158 No_date    9:44   41.52 .338
      [CN= 56.5: N= 3.00]
      [Tp= 1.36:DT= 1.00]
 024:0013---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:TB1          331.30    7.158 No_date    9:44   41.52  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB1.024
      remark:Runoff Hydrograph for TB1
 024:0014---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TB1          331.30    7.158 No_date    9:44   41.52  n/a
      [RDT= 1.00] out<- 02:C7           331.30    6.525 No_date   10:26   41.52  n/a
      [L/S/n= 1590./ .168/.028]
      {Vmax=  .817:Dmax= 1.419}
 024:0015---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C7           331.30    6.525 No_date   10:26   41.52  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C7.024
      remark:Routing Hydrograph for C7
 024:0016---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TB2          212.60    3.813 No_date   11:14   52.32 .425
      [CN= 64.3: N= 3.00]
      [Tp= 2.56:DT= 1.00]
 024:0017---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:TB2          212.60    3.813 No_date   11:14   52.32  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB2.024
      remark:Runoff Hydrograph for TB2
 024:0018---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:TB2          212.60    3.813 No_date   11:14   52.32  n/a
                    +   02:C7           331.30    6.525 No_date   10:26   41.52  n/a
      [DT= 1.00]  SUM=  06:N9           543.90   10.143 No_date   10:38   45.74  n/a
 024:0019---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           06:N9           543.90   10.143 No_date   10:38   45.74  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N9.024
      remark:Confluence Hydrograph for N9
# Tributary C
 024:0020---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     07:TC1          662.60   76.851 No_date    8:17   87.99 .715
      [XIMP=.41:TIMP=.45]
      [LOSS= 2 :CN= 70.9]
      [Pervious     area: IAper= 5.21:SLPP=2.00:LGP=  70.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=2102.:MNI=.013:SCI=   .0]
 024:0021---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           07:TC1          662.60   76.851 No_date    8:17   87.99  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TC1.024
      remark:Runoff Hydrograph for TC1
# Main Channel
 024:0022---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            05:N7           857.10   12.320 No_date   11:29   42.97  n/a
                    +   06:N9           543.90   10.143 No_date   10:38   45.74  n/a
      [DT= 1.00]  SUM=  03:J1          1401.00   22.135 No_date   11:00   44.04  n/a
 024:0023---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:J1           1401.00   22.135 No_date   11:00   44.04  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-J1.024
      remark:Confluence Hydrograph for J1
 024:0024---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:J1          1401.00   22.135 No_date   11:00   44.04  n/a
      [RDT= 1.00] out<- 02:C1          1401.00   21.067 No_date   11:40   44.04  n/a
      [L/S/n= 2670./ .205/.039]
      {Vmax= 1.130:Dmax= 2.267}
 024:0025---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C1           1401.00   21.067 No_date   11:40   44.04  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C1.024
      remark:Routing Hydrograph for C1
 024:0026---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:M1           874.00   17.445 No_date   10:14   45.39 .369
      [CN= 59.4: N= 3.00]
      [Tp= 1.76:DT= 1.00]
 024:0027---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M1           874.00   17.445 No_date   10:14   45.39  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M1.024
      remark:Runoff Hydrograph for M1
 024:0028---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M1           874.00   17.445 No_date   10:14   45.39  n/a
                    +   02:C1          1401.00   21.067 No_date   11:40   44.04  n/a
      [DT= 1.00]  SUM=  03:N1          2275.00   35.935 No_date   11:05   44.56  n/a
 024:0029---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N1           2275.00   35.935 No_date   11:05   44.56  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N1.024
      remark:Confluence Hydrograph for N1
 024:0030---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N1          2275.00   35.935 No_date   11:05   44.56  n/a
      [RDT= 1.00] out<- 02:C2          2275.00   35.003 No_date   11:32   44.56  n/a
      [L/S/n= 1580./ .178/.038]
      {Vmax= 1.006:Dmax= 2.650}
 024:0031---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C2           2275.00   35.003 No_date   11:32   44.56  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C2.024
      remark:Routing Hydrograph for C2
 024:0032---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M2           222.30   34.286 No_date    8:10   92.06 .748
      [XIMP=.46:TIMP=.51]
      [LOSS= 2 :CN= 71.8]
      [Pervious     area: IAper= 4.99:SLPP=2.00:LGP=  68.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1217.:MNI=.013:SCI=   .0]
 024:0033---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M2           222.30   34.286 No_date    8:10   92.06  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M2.024
      remark:Runoff Hydrograph for M2
 024:0034---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M2           222.30   34.286 No_date    8:10   92.06  n/a
                    +   02:C2          2275.00   35.003 No_date   11:32   44.56  n/a
      [DT= 1.00]  SUM=  03:N2          2497.30   37.363 No_date   11:28   48.79  n/a
 024:0035---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N2           2497.30   37.363 No_date   11:28   48.79  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N2.024
      remark:Confluence Hydrograph for N2
 024:0036---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N2          2497.30   37.363 No_date   11:28   48.79  n/a
      [RDT= 1.00] out<- 02:C3          2497.30   37.289 No_date   11:34   48.79  n/a
      [L/S/n=  390./ .234/.039]
      {Vmax=  .920:Dmax= 2.012}
 024:0037---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C3           2497.30   37.289 No_date   11:34   48.79  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C3.024
      remark:Routing Hydrograph for C3
 024:0038---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M3           598.80   43.012 No_date    8:16   62.12 .505
      [XIMP=.28:TIMP=.31]
      [LOSS= 2 :CN= 53.4]
      [Pervious     area: IAper=11.08:SLPP=2.00:LGP=  98.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1998.:MNI=.013:SCI=   .0]
 024:0039---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M3           598.80   43.012 No_date    8:16   62.12  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M3.024
      remark:Runoff Hydrograph for M3
 024:0040---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M3           598.80   43.012 No_date    8:16   62.12  n/a
                    +   02:C3          2497.30   37.289 No_date   11:34   48.79  n/a
      [DT= 1.00]  SUM=  03:N3          3096.10   73.203 No_date    8:16   51.37  n/a
 024:0041---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N3           3096.10   73.203 No_date    8:16   51.37  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N3.024
      remark:Confluence Hydrograph for N3
 024:0042---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N3          3096.10   73.203 No_date    8:16   51.37  n/a
      [RDT= 1.00] out<- 02:C4          3096.10   57.696 No_date    8:41   51.37  n/a
      [L/S/n= 1460./ .297/.040]
      {Vmax= 1.350:Dmax= 3.383}
 024:0043---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C4           3096.10   57.696 No_date    8:41   51.37  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C4.024
      remark:Routing Hydrograph for C4
 024:0044---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M4            50.70    7.650 No_date    8:05   89.11 .724
      [XIMP=.29:TIMP=.32]
      [LOSS= 2 :CN= 78.0]
      [Pervious     area: IAper= 3.58:SLPP=2.00:LGP=  73.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 582.:MNI=.013:SCI=   .0]
 024:0045---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M4            50.70    7.650 No_date    8:05   89.11  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M4.024
      remark:Runoff Hydrograph for M4
 024:0046---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M4            50.70    7.650 No_date    8:05   89.11  n/a
                    +   02:C4          3096.10   57.696 No_date    8:41   51.37  n/a
      [DT= 1.00]  SUM=  04:N4          3146.80   61.336 No_date    8:36   51.98  n/a
 024:0047---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           04:N4           3146.80   61.336 No_date    8:36   51.98  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N4.024
      remark:Confluence Hydrograph for N4
 024:0048---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            04:N4           3146.80   61.336 No_date    8:36   51.98  n/a
                    +   07:TC1           662.60   76.851 No_date    8:17   87.99  n/a
      [DT= 1.00]  SUM=  03:J2          3809.40  132.947 No_date    8:24   58.24  n/a
 024:0049---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:J2           3809.40  132.947 No_date    8:24   58.24  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-J2.024
      remark:Confluence Hydrograph for J2
 024:0050---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:J2          3809.40  132.947 No_date    8:24   58.24  n/a
      [RDT= 1.00] out<- 02:C5          3809.40  111.612 No_date    8:37   58.24  n/a
      [L/S/n=  980./ .094/.031]
      {Vmax= 1.063:Dmax= 3.464}
 024:0051---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C5           3809.40  111.612 No_date    8:37   58.24  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C5.024
      remark:Routing Hydrograph for C5
 024:0052---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M5           152.00   17.058 No_date    8:09   84.84 .690
      [XIMP=.26:TIMP=.29]
      [LOSS= 2 :CN= 75.7]
      [Pervious     area: IAper= 4.08:SLPP=2.00:LGP= 117.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1007.:MNI=.013:SCI=   .0]
 024:0053---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
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     SAVE HYD           01:M5          152.00   17.058 No_date    8:09   84.84  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M5.024
      remark:Runoff Hydrograph for M5
 024:0054--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M5          152.00   17.058 No_date    8:09   84.84  n/a
                    +  02:C5         3809.40  111.612 No_date    8:37   58.24  n/a
      [DT= 1.00]  SUM=  03:N5         3961.40  124.391 No_date    8:33   59.26  n/a
 024:0055--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N5          3961.40  124.391 No_date    8:33   59.26  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N5.024
      remark:Confluence Hydrograph for N5
  ** END OF RUN :  24

*******************************************************************************




 RUN:COMMAND#
 025:0001--------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on       0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  =  25 ]
#*******************************************************************************
#  Project Name: [Mosquito]    Project Number: [10418]
#  Model Version: [V12-final]
#  Date        : 22 Sept 2021
#  Modeled by    : [ Tyler Bauman ]
#  Checked by    : [ Calvin Paul ]
#  Company     : Rideau Valley Conservation Authority
#  License #   :  5329846
#*******************************************************************************
 025:0002--------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  =
      [SDT=30.00:SDUR=  24.00:PTOT= 123.01]
 025:0003--------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = C:\MODEL_~1\Current\MOSQUI~1\mosq_val.val
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Bilberry Creek Default Value File]
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=90.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .045]
      Parameters used in NASHYD:
      [Ia=   1.50 mm] [N= 3.00]
# Tributary A
 025:0004--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TA1          636.30   11.176 No_date   14:45   44.71 .363
      [CN= 58.9: N= 3.00]
      [Tp= 2.49:DT= 1.00]
 025:0005--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:TA1          636.30   11.176 No_date   14:45   44.71  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA1.025
      remark:Runoff Hydrograph for TA1
 025:0006--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TA1          636.30   11.176 No_date   14:45   44.71  n/a
      [RDT= 1.00] out<- 02:C6           636.30   10.687 No_date   15:32   44.71  n/a
      [L/S/n= 2390./ .199/.032]
      {Vmax= 1.097:Dmax= 1.485}
 025:0007--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C6           636.30   10.687 No_date   15:32   44.71  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C6.025
      remark:Routing Hydrograph for C6
 025:0008--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TA2          220.80    4.107 No_date   14:00   37.93 .308
      [CN= 53.7: N= 3.00]
      [Tp= 1.83:DT= 1.00]
 025:0009--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:TA2          220.80    4.107 No_date   14:00   37.93  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA2.025
      remark:Runoff Hydrograph for TA2
 025:0010--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:TA2          220.80    4.107 No_date   14:00   37.93  n/a
                    +  02:C6           636.30   10.687 No_date   15:32   44.71  n/a
      [DT= 1.00]  SUM=  05:N7           857.10   13.994 No_date   15:04   42.97  n/a
 025:0011--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           05:N7           857.10   13.994 No_date   15:04   42.97  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N7.025
      remark:Confluence Hydrograph for N7
# Tributary B
 025:0012--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TB1          331.30    8.473 No_date   13:25   41.52 .337
      [CN= 56.5: N= 3.00]
      [Tp= 1.36:DT= 1.00]
 025:0013--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:TB1          331.30    8.473 No_date   13:25   41.52  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB1.025
      remark:Runoff Hydrograph for TB1
 025:0014--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TB1          331.30    8.473 No_date   13:25   41.52  n/a
      [RDT= 1.00] out<- 02:C7           331.30    7.564 No_date   14:09   41.52  n/a
      [L/S/n= 1590./ .168/.028]
      {Vmax=  .771:Dmax= 1.492}
 025:0015--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C7           331.30    7.564 No_date   14:09   41.52  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C7.025
      remark:Routing Hydrograph for C7
 025:0016--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TB2          212.60    4.324 No_date   14:48   52.32 .425
      [CN= 64.3: N= 3.00]
      [Tp= 2.56:DT= 1.00]
 025:0017--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:TB2          212.60    4.324 No_date   14:48   52.32  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB2.025
      remark:Runoff Hydrograph for TB2
 025:0018--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:TB2          212.60    4.324 No_date   14:48   52.32  n/a
                    +  02:C7           331.30    7.564 No_date   14:09   41.52  n/a
      [DT= 1.00]  SUM=  06:N9           543.90   11.725 No_date   14:17   45.74  n/a
 025:0019--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           06:N9           543.90   11.725 No_date   14:17   45.74  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N9.025
      remark:Confluence Hydrograph for N9
# Tributary C
 025:0020--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     07:TC1          662.60   77.802 No_date   12:12   87.98 .715
      [XIMP=.41:TIMP=.45]
      [LOSS= 2 :CN= 70.9]
      [Pervious     area: IAper= 5.21:SLPP=2.00:LGP=  70.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=2102.::MNI=.013:SCI=   .0]
 025:0021--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           07:TC1          662.60   77.802 No_date   12:12   87.98  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TC1.025
      remark:Runoff Hydrograph for TC1
# Main Channel
 025:0022--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            05:N7           857.10   13.994 No_date   15:04   42.97  n/a
                    +  06:N9           543.90   11.725 No_date   14:17   45.74  n/a
      [DT= 1.00]  SUM=  03:J1          1401.00   25.329 No_date   14:37   44.04  n/a
 025:0023--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:J1          1401.00   25.329 No_date   14:37   44.04  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-J1.025
      remark:Confluence Hydrograph for J1
 025:0024--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:J1          1401.00   25.329 No_date   14:37   44.04  n/a
      [RDT= 1.00] out<- 02:C1          1401.00   23.883 No_date   15:23   44.04  n/a
      [L/S/n= 2670./ .205/.039]
      {Vmax= 1.109:Dmax= 2.393}
 025:0025--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C1          1401.00   23.883 No_date   15:23   44.04  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C1.025
      remark:Routing Hydrograph for C1
 025:0026--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:M1           874.00   20.302 No_date   13:53   45.38 .369
      [CN= 59.4: N= 3.00]
      [Tp= 1.76:DT= 1.00]
 025:0027--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M1           874.00   20.302 No_date   13:53   45.38  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M1.025
      remark:Runoff Hydrograph for M1
 025:0028--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M1           874.00   20.302 No_date   13:53   45.38  n/a
                    +  02:C1          1401.00   23.883 No_date   15:23   44.04  n/a
      [DT= 1.00]  SUM=  03:N1          2275.00   41.052 No_date   14:36   44.56  n/a
 025:0029--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N1          2275.00   41.052 No_date   14:36   44.56  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N1.025
      remark:Confluence Hydrograph for N1
 025:0030--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N1          2275.00   41.052 No_date   14:36   44.56  n/a
      [RDT= 1.00] out<- 02:C2          2275.00   39.899 No_date   15:04   44.56  n/a
      [L/S/n= 1580./ .178/.038]
      {Vmax= 1.027:Dmax= 2.749}
 025:0031--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C2          2275.00   39.899 No_date   15:04   44.56  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C2.025
      remark:Routing Hydrograph for C2
 025:0032--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M2           222.30   32.016 No_date   12:06   92.05 .748
      [XIMP=.46:TIMP=.51]
      [LOSS= 2 :CN= 71.8]
      [Pervious     area: IAper= 4.99:SLPP=2.00:LGP=  68.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1217.::MNI=.013:SCI=   .0]
 025:0033--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M2           222.30   32.016 No_date   12:06   92.05  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M2.025
      remark:Runoff Hydrograph for M2
 025:0034--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M2           222.30   32.016 No_date   12:06   92.05  n/a
                    +  02:C2          2275.00   39.899 No_date   15:04   44.56  n/a
      [DT= 1.00]  SUM=  03:N2          2497.30   42.016 No_date   15:02   48.79  n/a
 025:0035--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N2          2497.30   42.016 No_date   15:02   48.79  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N2.025
      remark:Confluence Hydrograph for N2
 025:0036--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N2          2497.30   42.016 No_date   15:02   48.79  n/a
      [RDT= 1.00] out<- 02:C3          2497.30   41.965 No_date   15:07   48.79  n/a
      [L/S/n=  390./ .234/.039]
      {Vmax=  .943:Dmax= 2.072}
 025:0037--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C3          2497.30   41.965 No_date   15:07   48.79  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C3.025
      remark:Routing Hydrograph for C3
 025:0038--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M3           598.80   43.959 No_date   12:12   62.12 .505
      [XIMP=.28:TIMP=.31]
      [LOSS= 2 :CN= 53.4]
      [Pervious     area: IAper=11.08:SLPP=2.00:LGP=  98.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1998.::MNI=.013:SCI=   .0]
 025:0039--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M3           598.80   43.959 No_date   12:12   62.12  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M3.025
      remark:Runoff Hydrograph for M3
 025:0040--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M3           598.80   43.959 No_date   12:12   62.12  n/a
                    +  02:C3          2497.30   41.965 No_date   15:07   48.79  n/a
      [DT= 1.00]  SUM=  03:N3          3096.10   76.613 No_date   12:13   51.36  n/a
 025:0041--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N3          3096.10   76.613 No_date   12:13   51.36  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N3.025
      remark:Confluence Hydrograph for N3
 025:0042--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N3          3096.10   76.613 No_date   12:13   51.36  n/a
      [RDT= 1.00] out<- 02:C4          3096.10   62.539 No_date   12:32   51.36  n/a
      [L/S/n= 1460./ .297/.040]
      {Vmax= 1.346:Dmax= 3.423}
 025:0043--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C4          3096.10   62.539 No_date   12:32   51.36  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C4.025
      remark:Routing Hydrograph for C4
 025:0044--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M4            50.70    7.607 No_date   12:04   89.10 .724
      [XIMP=.29:TIMP=.32]
      [LOSS= 2 :CN= 78.0]
      [Pervious     area: IAper= 3.58:SLPP=2.00:LGP=  73.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 582.::MNI=.013:SCI=   .0]
 025:0045--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M4            50.70    7.607 No_date   12:04   89.10  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M4.025
      remark:Runoff Hydrograph for M4
 025:0046--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M4            50.70    7.607 No_date   12:04   89.10  n/a
                    +  02:C4          3096.10   62.539 No_date   12:32   51.36  n/a
      [DT= 1.00]  SUM=  04:N4          3146.80   66.326 No_date   12:30   51.97  n/a
 025:0047--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           04:N4          3146.80   66.326 No_date   12:30   51.97  n/a
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     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N4.025
     remark:Confluence Hydrograph for N4
 025:0048--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            04:N4          3146.80   66.326 No_date   12:30   51.97  n/a
                    +  07:TC1           662.60   77.802 No_date   12:12   87.98  n/a
      [DT= 1.00]  SUM=  03:J2          3809.40  138.749 No_date   12:16   58.24  n/a
 025:0049--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:J2          3809.40  138.749 No_date   12:16   58.24  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-J2.025
      remark:Confluence Hydrograph for J2
 025:0050--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:J2          3809.40  138.749 No_date   12:16   58.24  n/a
      [RDT= 1.00] out<- 02:C5          3809.40  118.503 No_date   12:29   58.24  n/a
      [L/S/n=  980./ .094/.031]
      {Vmax= 1.075:Dmax= 3.511}
 025:0051--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C5          3809.40  118.503 No_date   12:29   58.24  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C5.025
      remark:Routing Hydrograph for C5
 025:0052--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M5           152.00   18.009 No_date   12:08   84.84 .690
      [XIMP=.26:TIMP=.29]
      [LOSS= 2 :CN= 75.7]
      [Pervious     area: IAper= 4.08:SLPP=2.00:LGP= 117.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1007.:MNI=.013:SCI=   .0]
 025:0053--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M5           152.00   18.009 No_date   12:08   84.84  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M5.025
      remark:Runoff Hydrograph for M5
 025:0054--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M5           152.00   18.009 No_date   12:08   84.84  n/a
                    +  02:C5          3809.40  118.503 No_date   12:29   58.24  n/a
      [DT= 1.00]  SUM=  03:N5          3961.40  132.080 No_date   12:27   59.26  n/a
 025:0055--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N5          3961.40  132.080 No_date   12:27   59.26  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N5.025
      remark:Confluence Hydrograph for N5
  ** END OF RUN : 239

********************************************************************************




 RUN:COMMAND#
 240:0001--------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 240 ]
#*******************************************************************************
#  Project Name: [Mosquito]    Project Number: [10418]
#  Model Version: [V12-final]
#  Date        : 22 Sept 2021
#  Modeled by    : [ Tyler Bauman ]
#  Checked by    : [ Calvin Paul ]
#  Company     : Rideau Valley Conservation Authority
#  License #   :  5329846
#*******************************************************************************
 240:0002--------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  =
      [SDT=30.00:SDUR=  24.00:PTOT=  50.07]
 240:0003--------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = C:\MODEL_~1\Current\MOSQUI~1\mosq_val.val
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Bilberry Creek Default Value File]
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=90.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .045]
      Parameters used in NASHYD:
      [Ia=   1.50 mm] [N= 3.00]
# Tributary A
 240:0004--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TA1          636.30    1.812 No_date   14:59    7.77 .155
      [CN= 58.9: N= 3.00]
      [Tp= 2.49:DT= 1.00]
 240:0005--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:TA1          636.30    1.812 No_date   14:59    7.77  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA1.240
      remark:Runoff Hydrograph for TA1
 240:0006--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TA1          636.30    1.812 No_date   14:59    7.77  n/a
      [RDT= 1.00] out<- 02:C6          636.30    1.696 No_date   15:47    7.77  n/a
      [L/S/n= 2390./ .199/.032]
      {Vmax=  .783:Dmax=  .642}
 240:0007--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C6          636.30    1.696 No_date   15:47    7.77  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C6.240
      remark:Routing Hydrograph for C6
 240:0008--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TA2          220.80     .583 No_date   14:13    5.93 .118
      [CN= 53.7: N= 3.00]
      [Tp= 1.83:DT= 1.00]
 240:0009--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:TA2          220.80     .583 No_date   14:13    5.93  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA2.240
      remark:Runoff Hydrograph for TA2
 240:0010--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:TA2          220.80     .583 No_date   14:13    5.93  n/a
                    +  02:C6          636.30    1.696 No_date   15:47    7.77  n/a
      [DT= 1.00]  SUM=  05:N7          857.10    2.165 No_date   15:24    7.30  n/a
 240:0011--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           05:N7           857.10    2.165 No_date   15:24    7.30  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N7.240
      remark:Confluence Hydrograph for N7
# Tributary B
 240:0012--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TB1          331.30    1.283 No_date   13:33    6.88 .137
      [CN= 56.5: N= 3.00]
      [Tp= 1.36:DT= 1.00]
 240:0013--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:TB1          331.30    1.283 No_date   13:33    6.88  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB1.240
      remark:Runoff Hydrograph for TB1
 240:0014--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TB1          331.30    1.283 No_date   13:33    6.88  n/a
      [RDT= 1.00] out<- 02:C7          331.30    1.170 No_date   14:05    6.88  n/a
      [L/S/n= 1590./ .168/.028]
      {Vmax=  .792:Dmax=  .684}
 240:0015--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C7          331.30    1.170 No_date   14:05    6.88  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C7.240
      remark:Routing Hydrograph for C7
 240:0016--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TB2          212.60     .786 No_date   15:00   10.05 .201
      [CN= 64.3: N= 3.00]
      [Tp= 2.56:DT= 1.00]
 240:0017--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:TB2          212.60     .786 No_date   15:00   10.05  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB2.240
      remark:Runoff Hydrograph for TB2
 240:0018--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:TB2          212.60     .786 No_date   15:00   10.05  n/a
                    +  02:C7          331.30    1.170 No_date   14:05    6.88  n/a
      [DT= 1.00]  SUM=  06:N9          543.90    1.904 No_date   14:20    8.12  n/a
 240:0019--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           06:N9           543.90    1.904 No_date   14:20    8.12  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N9.240
      remark:Confluence Hydrograph for N9
# Tributary C
 240:0020--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     07:TC1          662.60   19.729 No_date   12:20   28.29 .565
      [XIMP=.41:TIMP=.45]
      [LOSS= 2 :CN= 70.9]
      [Pervious     area: IAper= 5.21:SLPP=2.00:LGP=  70.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=2102.:MNI=.013:SCI=   .0]
 240:0021--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           07:TC1          662.60   19.729 No_date   12:20   28.29  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TC1.240
      remark:Runoff Hydrograph for TC1
# Main Channel
 240:0022--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            05:N7           857.10    2.165 No_date   15:24    7.30  n/a
                    +  06:N9           543.90    1.904 No_date   14:20    8.12  n/a
      [DT= 1.00]  SUM=  03:J1          1401.00    3.916 No_date   14:53    7.62  n/a
 240:0023--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:J1          1401.00    3.916 No_date   14:53    7.62  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-J1.240
      remark:Confluence Hydrograph for J1
 240:0024--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:J1          1401.00    3.916 No_date   14:53    7.62  n/a
      [RDT= 1.00] out<- 02:C1          1401.00    3.615 No_date   15:45    7.62  n/a
      [L/S/n= 2670./ .205/.039]
      {Vmax=  .865:Dmax= 1.191}
 240:0025--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C1          1401.00    3.615 No_date   15:45    7.62  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C1.240
      remark:Routing Hydrograph for C1
 240:0026--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:M1           874.00    3.308 No_date   14:03    7.96 .159
      [CN= 59.4: N= 3.00]
      [Tp= 1.76:DT= 1.00]
 240:0027--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M1           874.00    3.308 No_date   14:03    7.96  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M1.240
      remark:Runoff Hydrograph for M1
 240:0028--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M1           874.00    3.308 No_date   14:03    7.96  n/a
                    +  02:C1          1401.00    3.615 No_date   15:45    7.62  n/a
      [DT= 1.00]  SUM=  03:N1          2275.00    6.310 No_date   14:58    7.75  n/a
 240:0029--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N1          2275.00    6.310 No_date   14:58    7.75  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N1.240
      remark:Confluence Hydrograph for N1
 240:0030--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N1          2275.00    6.310 No_date   14:58    7.75  n/a
      [RDT= 1.00] out<- 02:C2          2275.00    6.155 No_date   15:24    7.75  n/a
      [L/S/n= 1580./ .178/.038]
      {Vmax=  .951:Dmax= 1.470}
 240:0031--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C2          2275.00    6.155 No_date   15:24    7.75  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C2.240
      remark:Routing Hydrograph for C2
 240:0032--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M2           222.30    8.660 No_date   12:11   30.49 .609
      [XIMP=.46:TIMP=.51]
      [LOSS= 2 :CN= 71.8]
      [Pervious     area: IAper= 4.99:SLPP=2.00:LGP=  68.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1217.:MNI=.013:SCI=   .0]
 240:0033--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M2           222.30    8.660 No_date   12:11   30.49  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M2.240
      remark:Runoff Hydrograph for M2
 240:0034--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M2           222.30    8.660 No_date   12:11   30.49  n/a
                    +  02:C2          2275.00    6.155 No_date   15:24    7.75  n/a
      [DT= 1.00]  SUM=  03:N2          2497.30    8.784 No_date   12:12    9.77  n/a
 240:0035--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N2          2497.30    8.784 No_date   12:12    9.77  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N2.240
      remark:Confluence Hydrograph for N2
 240:0036--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N2          2497.30    8.784 No_date   12:12    9.77  n/a
      [RDT= 1.00] out<- 02:C3          2497.30    8.394 No_date   12:16    9.77  n/a
      [L/S/n=  390./ .234/.039]
      {Vmax= 1.031:Dmax= 1.340}
 240:0037--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C3          2497.30    8.394 No_date   12:16    9.77  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C3.240
      remark:Routing Hydrograph for C3
 240:0038--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M3           598.80   11.152 No_date   12:17   18.08 .361
      [XIMP=.28:TIMP=.31]
      [LOSS= 2 :CN= 53.4]
      [Pervious     area: IAper=11.08:SLPP=2.00:LGP=  98.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1998.:MNI=.013:SCI=   .0]
 240:0039--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:M3           598.80   11.152 No_date   12:17   18.08  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M3.240
      remark:Runoff Hydrograph for M3
 240:0040--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:M3           598.80   11.152 No_date   12:17   18.08  n/a
                    +  02:C3          2497.30    8.394 No_date   12:16    9.77  n/a
      [DT= 1.00]  SUM=  03:N3          3096.10   19.545 No_date   12:16   11.38  n/a
 240:0041--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:N3          3096.10   19.545 No_date   12:16   11.38  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N3.240
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     remark:Confluence Hydrograph for N3
 240:0042--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N3          3096.10   19.545 No_date   12:16   11.38  n/a
      [RDT= 1.00] out<- 02:C4          3096.10   16.530 No_date   12:28   11.38  n/a
      [L/S/n= 1460./ .297/.040]
      {Vmax= 1.465:Dmax= 2.158}
 240:0043--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            02:C4          3096.10   16.530 No_date   12:28   11.38  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C4.240
      remark:Routing Hydrograph for C4
 240:0044--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M4            50.70    1.814 No_date   12:06   27.42 .548
      [XIMP=.29:TIMP=.32]
      [LOSS= 2 :CN= 78.0]
      [Pervious     area: IAper= 3.58:SLPP=2.00:LGP=  73.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 582.:MNI=.013:SCI=   .0]
 240:0045--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            01:M4            50.70    1.814 No_date   12:06   27.42  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M4.240
      remark:Runoff Hydrograph for M4
 240:0046--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             01:M4            50.70    1.814 No_date   12:06   27.42  n/a
                       + 02:C4          3096.10   16.530 No_date   12:28   11.38  n/a
      [DT= 1.00]  SUM=  04:N4          3146.80   17.855 No_date   12:27   11.64  n/a
 240:0047--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            04:N4          3146.80   17.855 No_date   12:27   11.64  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N4.240
      remark:Confluence Hydrograph for N4
 240:0048--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             04:N4          3146.80   17.855 No_date   12:27   11.64  n/a
                       + 07:TC1          662.60   19.729 No_date   12:20   28.29  n/a
      [DT= 1.00]  SUM=  03:J2          3809.40   37.239 No_date   12:23   14.54  n/a
 240:0049--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            03:J2          3809.40   37.239 No_date   12:23   14.54  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-J2.240
      remark:Confluence Hydrograph for J2
 240:0050--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:J2          3809.40   37.239 No_date   12:23   14.54  n/a
      [RDT= 1.00] out<- 02:C5          3809.40   31.896 No_date   12:39   14.54  n/a
      [L/S/n=  980./ .094/.031]
      {Vmax=  .984:Dmax= 2.402}
 240:0051--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            02:C5          3809.40   31.896 No_date   12:39   14.54  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C5.240
      remark:Routing Hydrograph for C5
 240:0052--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M5           152.00    3.970 No_date   12:11   25.34 .506
      [XIMP=.26:TIMP=.29]
      [LOSS= 2 :CN= 75.7]
      [Pervious     area: IAper= 4.08:SLPP=2.00:LGP= 117.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1007.:MNI=.013:SCI=   .0]
 240:0053--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            01:M5           152.00    3.970 No_date   12:11   25.34  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M5.240
      remark:Runoff Hydrograph for M5
 240:0054--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             01:M5           152.00    3.970 No_date   12:11   25.34  n/a
                       + 02:C5          3809.40   31.896 No_date   12:39   14.54  n/a
      [DT= 1.00]  SUM=  03:N5          3961.40   34.950 No_date   12:37   14.95  n/a
 240:0055--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            03:N5          3961.40   34.950 No_date   12:37   14.95  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N5.240
      remark:Confluence Hydrograph for N5
  ** END OF RUN : 240

*******************************************************************************




 RUN:COMMAND#
 241:0001--------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on       0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 241 ]
#*******************************************************************************
#  Project Name: [Mosquito]    Project Number: [10418]
#  Model Version: [V12-final]
#  Date        : 22 Sept 2021
#  Modeled by    : [ Tyler Bauman ]
#  Checked by    : [ Calvin Paul ]
#  Company     : Rideau Valley Conservation Authority
#  License #   :  5329846
#*******************************************************************************
 241:0002--------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  =
      [SDT=30.00:SDUR=  24.00:PTOT=  70.01]
 241:0003--------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = C:\MODEL_~1\Current\MOSQUI~1\mosq_val.val
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Bilberry Creek Default Value File]
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=90.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .045]
      Parameters used in NASHYD:
      [Ia=   1.50 mm] [N= 3.00]
# Tributary A
 241:0004--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TA1          636.30    3.779 No_date   14:53   15.68 .224
      [CN= 58.9: N= 3.00]
      [Tp= 2.49:DT= 1.00]
 241:0005--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            03:TA1          636.30    3.779 No_date   14:53   15.68  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA1.241
      remark:Runoff Hydrograph for TA1
 241:0006--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TA1          636.30    3.779 No_date   14:53   15.68  n/a
      [RDT= 1.00] out<- 02:C6          636.30    3.601 No_date   15:31   15.68  n/a
      [L/S/n= 2390./ .199/.032]
      {Vmax=  .953:Dmax=  .919}
 241:0007--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            02:C6          636.30    3.601 No_date   15:31   15.68  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C6.241
      remark:Routing Hydrograph for C6
 241:0008--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TA2          220.80    1.295 No_date   14:07   12.54 .179
      [CN= 53.7: N= 3.00]
      [Tp= 1.83:DT= 1.00]
 241:0009--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            01:TA2          220.80    1.295 No_date   14:07   12.54  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA2.241
      remark:Runoff Hydrograph for TA2
 241:0010--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             01:TA2          220.80    1.295 No_date   14:07   12.54  n/a
                       + 02:C6          636.30    3.601 No_date   15:31   15.68  n/a
      [DT= 1.00]  SUM=  05:N7          857.10    4.670 No_date   15:09   14.87  n/a
 241:0011--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            05:N7          857.10    4.670 No_date   15:09   14.87  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N7.241
      remark:Confluence Hydrograph for N7
# Tributary B
 241:0012--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TB1          331.30    2.767 No_date   13:29   14.18 .203
      [CN= 56.5: N= 3.00]
      [Tp= 1.36:DT= 1.00]
 241:0013--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            03:TB1          331.30    2.767 No_date   13:29   14.18  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB1.241
      remark:Runoff Hydrograph for TB1
 241:0014--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TB1          331.30    2.767 No_date   13:29   14.18  n/a
      [RDT= 1.00] out<- 02:C7          331.30    2.583 No_date   13:55   14.18  n/a
      [L/S/n= 1590./ .168/.028]
      {Vmax=  .966:Dmax=  .975}
 241:0015--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            02:C7          331.30    2.583 No_date   13:55   14.18  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C7.241
      remark:Routing Hydrograph for C7
 241:0016--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TB2          212.60    1.558 No_date   14:54   19.43 .277
      [CN= 64.3: N= 3.00]
      [Tp= 2.56:DT= 1.00]
 241:0017--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            01:TB2          212.60    1.558 No_date   14:54   19.43  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB2.241
      remark:Runoff Hydrograph for TB2
 241:0018--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             01:TB2          212.60    1.558 No_date   14:54   19.43  n/a
                       + 02:C7          331.30    2.583 No_date   13:55   14.18  n/a
      [DT= 1.00]  SUM=  06:N9          543.90    4.005 No_date   14:09   16.23  n/a
 241:0019--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            06:N9          543.90    4.005 No_date   14:09   16.23  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N9.241
      remark:Confluence Hydrograph for N9
# Tributary C
 241:0020--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     07:TC1          662.60   32.841 No_date   12:17   43.41 .620
      [XIMP=.41:TIMP=.45]
      [LOSS= 2 :CN= 70.9]
      [Pervious     area: IAper= 5.21:SLPP=2.00:LGP=  70.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=2102.:MNI=.013:SCI=   .0]
 241:0021--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            07:TC1          662.60   32.841 No_date   12:17   43.41  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TC1.241
      remark:Runoff Hydrograph for TC1
# Main Channel
 241:0022--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             05:N7          857.10    4.670 No_date   15:09   14.87  n/a
                       + 06:N9          543.90    4.005 No_date   14:09   16.23  n/a
      [DT= 1.00]  SUM=  03:J1         1401.00    8.371 No_date   14:39   15.40  n/a
 241:0023--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            03:J1         1401.00    8.371 No_date   14:39   15.40  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-J1.241
      remark:Confluence Hydrograph for J1
 241:0024--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:J1         1401.00    8.371 No_date   14:39   15.40  n/a
      [RDT= 1.00] out<- 02:C1         1401.00    7.878 No_date   15:26   15.40  n/a
      [L/S/n= 2670./ .205/.039]
      {Vmax= 1.031:Dmax= 1.641}
 241:0025--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            02:C1         1401.00    7.878 No_date   15:26   15.40  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C1.241
      remark:Routing Hydrograph for C1
 241:0026--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:M1           874.00    6.889 No_date   13:58   16.00 .229
      [CN= 59.4: N= 3.00]
      [Tp= 1.76:DT= 1.00]
 241:0027--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            01:M1           874.00    6.889 No_date   13:58   16.00  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M1.241
      remark:Runoff Hydrograph for M1
 241:0028--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             01:M1           874.00    6.889 No_date   13:58   16.00  n/a
                       + 02:C1         1401.00    7.878 No_date   15:26   15.40  n/a
      [DT= 1.00]  SUM=  03:N1         2275.00   13.726 No_date   14:43   15.63  n/a
 241:0029--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            03:N1         2275.00   13.726 No_date   14:43   15.63  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N1.241
      remark:Confluence Hydrograph for N1
 241:0030--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:N1         2275.00   13.726 No_date   14:43   15.63  n/a
      [RDT= 1.00] out<- 02:C2         2275.00   13.406 No_date   15:06   15.63  n/a
      [L/S/n= 1580./ .178/.038]
      {Vmax= 1.115:Dmax= 2.031}
 241:0031--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            02:C2         2275.00   13.406 No_date   15:06   15.63  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C2.241
      remark:Routing Hydrograph for C2
 241:0032--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     01:M2           222.30   14.091 No_date   12:09   46.26 .661
      [XIMP=.46:TIMP=.51]
      [LOSS= 2 :CN= 71.8]
      [Pervious     area: IAper= 4.99:SLPP=2.00:LGP=  68.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1217.:MNI=.013:SCI=   .0]
 241:0033--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            01:M2           222.30   14.091 No_date   12:09   46.26  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M2.241
      remark:Runoff Hydrograph for M2
 241:0034--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             01:M2           222.30   14.091 No_date   12:09   46.26  n/a
                       + 02:C2         2275.00   13.406 No_date   15:06   15.63  n/a
      [DT= 1.00]  SUM=  03:N2         2497.30   14.638 No_date   12:10   18.36  n/a
 241:0035--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            03:N2         2497.30   14.638 No_date   12:10   18.36  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N2.241
      remark:Confluence Hydrograph for N2
```

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241:0036--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N2          2497.30   14.638 No_date   12:10   18.36  n/a
     [RDT= 1.00] out<- 02:C3          2497.30   14.527 No_date   15:14   18.36  n/a
     [L/S/n=  390./ .234/.039]
     {Vmax=  .961:Dmax= 1.608}
241:0037--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          02:C3          2497.30   14.527 No_date   15:14   18.36  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C3.241
     remark:Routing Hydrograph for C3
241:0038--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD    01:M3            598.80   17.994 No_date   12:14   28.58 .408
     [XIMP=.28:TIMP=.31]
     [LOSS= 2 :CN= 53.4]
     [Pervious     area: IAper=11.08:SLPP=2.00:LGP=  98.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1998.:MNI=.013:SCI=   .0]
241:0039--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          01:M3            598.80   17.994 No_date   12:14   28.58  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M3.241
     remark:Runoff Hydrograph for M3
241:0040--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD           01:M3            598.80   17.994 No_date   12:14   28.58  n/a
                    + 02:C3           2497.30   14.527 No_date   15:14   18.36  n/a
     [DT= 1.00]  SUM=  03:N3          3096.10   31.603 No_date   12:16   20.33  n/a
241:0041--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          03:N3          3096.10   31.603 No_date   12:16   20.33  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N3.241
     remark:Confluence Hydrograph for N3
241:0042--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N3          3096.10   31.603 No_date   12:16   20.33  n/a
     [RDT= 1.00] out<- 02:C4          3096.10   27.463 No_date   12:26   20.33  n/a
     [L/S/n= 1460./ .297/.040]
     {Vmax= 1.652:Dmax= 2.636}
241:0043--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          02:C4          3096.10   27.463 No_date   12:26   20.33  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C4.241
     remark:Routing Hydrograph for C4
241:0044--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD    01:M4             50.70    3.186 No_date   12:06   43.07 .615
     [XIMP=.29:TIMP=.32]
     [LOSS= 2 :CN= 78.0]
     [Pervious     area: IAper= 3.58:SLPP=2.00:LGP=  73.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 582.:MNI=.013:SCI=   .0]
241:0045--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          01:M4             50.70    3.186 No_date   12:06   43.07  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M4.241
     remark:Runoff Hydrograph for M4
241:0046--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD           01:M4             50.70    3.186 No_date   12:06   43.07  n/a
                    + 02:C4           3096.10   27.463 No_date   12:26   20.33  n/a
     [DT= 1.00]  SUM=  04:N4          3146.80   29.763 No_date   12:24   20.70  n/a
241:0047--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          04:N4          3146.80   29.763 No_date   12:24   20.70  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N4.241
     remark:Confluence Hydrograph for N4
241:0048--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD           04:N4          3146.80   29.763 No_date   12:24   20.70  n/a
                    + 07:TC1          662.60   32.841 No_date   12:17   43.41  n/a
     [DT= 1.00]  SUM=  03:J2          3809.40   61.955 No_date   12:20   24.65  n/a
241:0049--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          03:J2          3809.40   61.955 No_date   12:20   24.65  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-J2.241
     remark:Confluence Hydrograph for J2
241:0050--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:J2          3809.40   61.955 No_date   12:20   24.65  n/a
     [RDT= 1.00] out<- 02:C5          3809.40   51.999 No_date   12:36   24.65  n/a
     [L/S/n=  980./ .094/.031]
     {Vmax=  .956:Dmax= 2.779}
241:0051--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          02:C5          3809.40   51.999 No_date   12:36   24.65  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C5.241
     remark:Routing Hydrograph for C5
241:0052--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD    01:M5            152.00    6.871 No_date   12:10   40.25 .575
     [XIMP=.26:TIMP=.29]
     [LOSS= 2 :CN= 75.7]
     [Pervious     area: IAper= 4.08:SLPP=2.00:LGP= 117.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1007.:MNI=.013:SCI=   .0]
241:0053--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          01:M5            152.00    6.871 No_date   12:10   40.25  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M5.241
     remark:Runoff Hydrograph for M5
241:0054--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD           01:M5            152.00    6.871 No_date   12:10   40.25  n/a
                    + 02:C5           3809.40   51.999 No_date   12:36   24.65  n/a
     [DT= 1.00]  SUM=  03:N5          3961.40   57.449 No_date   12:35   25.25  n/a
241:0055--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          03:N5          3961.40   57.449 No_date   12:35   25.25  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N5.241
     remark:Confluence Hydrograph for N5
  ** END OF RUN : 241

********************************************************************************




 RUN:COMMAND#
 242:0001--------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 242 ]
#*******************************************************************************
#  Project Name: [Mosquito]    Project Number: [10418]
#  Model Version: [V12-final]
#  Date        : 22 Sept 2021
#  Modeled by    : [ Tyler Bauman ]
#  Checked by    : [ Calvin Paul ]
#  Company     : Rideau Valley Conservation Authority
#  License #   :  5329846
#*******************************************************************************
 242:0002--------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  =
      [SDT=30.00:SDUR=  24.00:PTOT=  82.59]
 242:0003--------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = C:\MODEL_~1\Current\MOSQUI~1\mosq_val.val
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Bilberry Creek Default Value File]

                THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=90.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .045]
      Parameters used in NASHYD:
      [Ia=   1.50 mm] [N= 3.00]
# Tributary A
 242:0004--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD      03:TA1           636.30    5.283 No_date   14:50   21.66 .262
      [CN= 58.9: N= 3.00]
      [Tp= 2.49:DT= 1.00]
 242:0005--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD          03:TA1           636.30    5.283 No_date   14:50   21.66  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA1.242
      remark:Runoff Hydrograph for TA1
 242:0006--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TA1          636.30    5.283 No_date   14:50   21.66  n/a
      [RDT= 1.00] out<- 02:C6          636.30    5.064 No_date   15:26   21.66  n/a
      [L/S/n= 2390./ .199/.032]
      {Vmax= 1.040:Dmax= 1.077}
 242:0007--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD          02:C6          636.30    5.064 No_date   15:26   21.66  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C6.242
      remark:Routing Hydrograph for C6
 242:0008--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD      01:TA2           220.80    1.854 No_date   14:04   17.66 .214
      [CN= 53.7: N= 3.00]
      [Tp= 1.83:DT= 1.00]
 242:0009--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD          01:TA2           220.80    1.854 No_date   14:04   17.66  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA2.242
      remark:Runoff Hydrograph for TA2
 242:0010--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD           01:TA2           220.80    1.854 No_date   14:04   17.66  n/a
                     + 02:C6          636.30    5.064 No_date   15:26   21.66  n/a
      [DT= 1.00]  SUM=  05:N7          857.10    6.616 No_date   15:03   20.63  n/a
 242:0011--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD          05:N7          857.10    6.616 No_date   15:03   20.63  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N7.242
      remark:Confluence Hydrograph for N7
# Tributary B
 242:0012--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD      03:TB1           331.30    3.915 No_date   13:28   19.75 .239
      [CN= 56.5: N= 3.00]
      [Tp= 1.36:DT= 1.00]
 242:0013--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD          03:TB1           331.30    3.915 No_date   13:28   19.75  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB1.242
      remark:Runoff Hydrograph for TB1
 242:0014--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TB1          331.30    3.915 No_date   13:28   19.75  n/a
      [RDT= 1.00] out<- 02:C7          331.30    3.682 No_date   13:54   19.75  n/a
      [L/S/n= 1590./ .168/.028]
      {Vmax= 1.029:Dmax= 1.137}
 242:0015--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD          02:C7          331.30    3.682 No_date   13:54   19.75  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C7.242
      remark:Routing Hydrograph for C7
 242:0016--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD      01:TB2           212.60    2.133 No_date   14:52   26.34 .319
      [CN= 64.3: N= 3.00]
      [Tp= 2.56:DT= 1.00]
 242:0017--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD          01:TB2           212.60    2.133 No_date   14:52   26.34  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB2.242
      remark:Runoff Hydrograph for TB2
 242:0018--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD           01:TB2           212.60    2.133 No_date   14:52   26.34  n/a
                     + 02:C7          331.30    3.682 No_date   13:54   19.75  n/a
      [DT= 1.00]  SUM=  06:N9          543.90    5.631 No_date   14:07   22.33  n/a
 242:0019--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD          06:N9          543.90    5.631 No_date   14:07   22.33  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N9.242
      remark:Confluence Hydrograph for N9
# Tributary C
 242:0020--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD    07:TC1           662.60   42.325 No_date   12:16   53.53 .648
      [XIMP=.41:TIMP=.45]
      [LOSS= 2 :CN= 70.9]
      [Pervious     area: IAper= 5.21:SLPP=2.00:LGP=  70.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=2102.:MNI=.013:SCI=   .0]
 242:0021--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD          07:TC1           662.60   42.325 No_date   12:16   53.53  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TC1.242
      remark:Runoff Hydrograph for TC1
# Main Channel
 242:0022--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD           05:N7          857.10    6.616 No_date   15:03   20.63  n/a
                     + 06:N9          543.90    5.631 No_date   14:07   22.33  n/a
      [DT= 1.00]  SUM=  03:J1         1401.00   11.833 No_date   14:33   21.29  n/a
 242:0023--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD          03:J1          1401.00   11.833 No_date   14:33   21.29  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-J1.242
      remark:Confluence Hydrograph for J1
 242:0024--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:J1          1401.00   11.833 No_date   14:33   21.29  n/a
      [RDT= 1.00] out<- 02:C1          1401.00   11.039 No_date   15:23   21.29  n/a
      [L/S/n= 2670./ .205/.039]
      {Vmax= 1.044:Dmax= 1.847}
 242:0025--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD          02:C1          1401.00   11.039 No_date   15:23   21.29  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C1.242
      remark:Routing Hydrograph for C1
 242:0026--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD      01:M1            874.00    9.621 No_date   13:56   22.06 .267
      [CN= 59.4: N= 3.00]
      [Tp= 1.76:DT= 1.00]
 242:0027--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD          01:M1            874.00    9.621 No_date   13:56   22.06  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-M1.242
      remark:Runoff Hydrograph for M1
 242:0028--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD           01:M1            874.00    9.621 No_date   13:56   22.06  n/a
                     + 02:C1          1401.00   11.039 No_date   15:23   21.29  n/a
      [DT= 1.00]  SUM=  03:N1         2275.00   19.244 No_date   14:40   21.58  n/a
 242:0029--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD          03:N1          2275.00   19.244 No_date   14:40   21.58  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N1.242
      remark:Confluence Hydrograph for N1
 242:0030--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
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```
    ROUTE CHANNEL   -> 03:N1          2275.00   19.244 No_date   14:40   21.58  n/a
     [RDT= 1.00] out<- 02:C2          2275.00   18.632 No_date   15:12   21.58  n/a
     [L/S/n= 1580./ .178/.038]
     {Vmax= 1.022:Dmax= 2.255}
242:0031--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C2          2275.00   18.632 No_date   15:12   21.58  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C2.242
     remark:Routing Hydrograph for C2
242:0032--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M2           222.30   17.896 No_date   12:09   56.72 .687
     [XIMP=.46:TIMP=.51]
     [LOSS= 2 :CN= 71.8]
     [Pervious     area: IAper= 4.99:SLPP=2.00:LGP=  68.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1217.:MNI=.013:SCI=   .0]
242:0033--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M2           222.30   17.896 No_date   12:09   56.72  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M2.242
     remark:Runoff Hydrograph for M2
242:0034--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M2           222.30   17.896 No_date   12:09   56.72  n/a
                   +   02:C2          2275.00   18.632 No_date   15:12   21.58  n/a
     [DT= 1.00]  SUM=  03:N2          2497.30   19.991 No_date   15:12   24.71  n/a
242:0035--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N2          2497.30   19.991 No_date   15:12   24.71  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N2.242
     remark:Confluence Hydrograph for N2
242:0036--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N2          2497.30   19.991 No_date   15:12   24.71  n/a
     [RDT= 1.00] out<- 02:C3          2497.30   19.928 No_date   15:18   24.71  n/a
     [L/S/n=  390./ .234/.039]
     {Vmax=  .885:Dmax= 1.741}
242:0037--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C3          2497.30   19.928 No_date   15:18   24.71  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C3.242
     remark:Routing Hydrograph for C3
242:0038--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M3           598.80   23.099 No_date   12:14   35.88 .434
     [XIMP=.28:TIMP=.31]
     [LOSS= 2 :CN= 53.4]
     [Pervious     area: IAper=11.08:SLPP=2.00:LGP=  98.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1998.:MNI=.013:SCI=   .0]
242:0039--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M3           598.80   23.099 No_date   12:14   35.88  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M3.242
     remark:Runoff Hydrograph for M3
242:0040--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M3           598.80   23.099 No_date   12:14   35.88  n/a
                   +   02:C3          2497.30   19.928 No_date   15:18   24.71  n/a
     [DT= 1.00]  SUM=  03:N3          3096.10   40.332 No_date   12:15   26.87  n/a
242:0041--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N3          3096.10   40.332 No_date   12:15   26.87  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N3.242
     remark:Confluence Hydrograph for N3
242:0042--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N3          3096.10   40.332 No_date   12:15   26.87  n/a
     [RDT= 1.00] out<- 02:C4          3096.10   35.929 No_date   12:29   26.87  n/a
     [L/S/n= 1460./ .297/.040]
     {Vmax= 1.635:Dmax= 2.881}
242:0043--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C4          3096.10   35.929 No_date   12:29   26.87  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C4.242
     remark:Routing Hydrograph for C4
242:0044--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M4            50.70    4.119 No_date   12:05   53.55 .648
     [XIMP=.29:TIMP=.32]
     [LOSS= 2 :CN= 78.0]
     [Pervious     area: IAper= 3.58:SLPP=2.00:LGP=  73.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 582.:MNI=.013:SCI=   .0]
242:0045--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M4            50.70    4.119 No_date   12:05   53.55  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M4.242
     remark:Runoff Hydrograph for M4
242:0046--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M4            50.70    4.119 No_date   12:05   53.55  n/a
                   +   02:C4          3096.10   35.929 No_date   12:29   26.87  n/a
     [DT= 1.00]  SUM=  04:N4          3146.80   38.528 No_date   12:27   27.30  n/a
242:0047--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           04:N4          3146.80   38.528 No_date   12:27   27.30  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N4.242
     remark:Confluence Hydrograph for N4
242:0048--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            04:N4          3146.80   38.528 No_date   12:27   27.30  n/a
                   +   07:TC1          662.60   42.325 No_date   12:16   53.53  n/a
     [DT= 1.00]  SUM=  03:J2          3809.40   79.238 No_date   12:20   31.86  n/a
242:0049--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:J2          3809.40   79.238 No_date   12:20   31.86  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-J2.242
     remark:Confluence Hydrograph for J2
242:0050--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:J2          3809.40   79.238 No_date   12:20   31.86  n/a
     [RDT= 1.00] out<- 02:C5          3809.40   66.676 No_date   12:32   31.86  n/a
     [L/S/n=  980./ .094/.031]
     {Vmax=  .967:Dmax= 2.976}
242:0051--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C5          3809.40   66.676 No_date   12:32   31.86  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C5.242
     remark:Routing Hydrograph for C5
242:0052--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M5           152.00    9.206 No_date   12:10   50.32 .609
     [XIMP=.26:TIMP=.29]
     [LOSS= 2 :CN= 75.7]
     [Pervious     area: IAper= 4.08:SLPP=2.00:LGP= 117.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1007.:MNI=.013:SCI=   .0]
242:0053--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M5           152.00    9.206 No_date   12:10   50.32  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M5.242
     remark:Runoff Hydrograph for M5
242:0054--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M5           152.00    9.206 No_date   12:10   50.32  n/a
                   +   02:C5          3809.40   66.676 No_date   12:32   31.86  n/a
     [DT= 1.00]  SUM=  03:N5          3961.40   74.027 No_date   12:32   32.57  n/a
242:0055--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N5          3961.40   74.027 No_date   12:32   32.57  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N5.242
     remark:Confluence Hydrograph for N5
  ** END OF RUN : 242

********************************************************************************
```

```
 RUN:COMMAND#
 243:0001--------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2     (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 243 ]
#*******************************************************************************
#  Project Name: [Mosquito]    Project Number: [10418]
#  Model Version: [V12-final]
#  Date        : 22 Sept 2021
#  Modeled by    : [ Tyler Bauman ]
#  Checked by    : [ Calvin Paul ]
#  Company     : Rideau Valley Conservation Authority
#  License #   :  5329846
#*******************************************************************************
 243:0002--------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  =
      [SDT=30.00:SDUR=  24.00:PTOT=  95.06]
 243:0003--------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = C:\MODEL_~1\Current\MOSQUI~1\mosq_val.val
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Bilberry Creek Default Value File]
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=90.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .045]
      Parameters used in NASHYD:
      [Ia=   1.50 mm] [N= 3.00]
# Tributary A
 243:0004--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TA1          636.30    6.949 No_date   14:48   28.20 .297
      [CN= 58.9: N= 3.00]
      [Tp= 2.49:DT= 1.00]
 243:0005--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:TA1          636.30    6.949 No_date   14:48   28.20  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA1.243
      remark:Runoff Hydrograph for TA1
 243:0006--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TA1          636.30    6.949 No_date   14:48   28.20  n/a
      [RDT= 1.00] out<- 02:C6           636.30    6.694 No_date   15:22   28.20  n/a
      [L/S/n= 2390./ .199/.032]
      {Vmax= 1.116:Dmax= 1.222}
 243:0007--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C6           636.30    6.694 No_date   15:22   28.20  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C6.242
      remark:Routing Hydrograph for C6
 243:0008--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TA2          220.80    2.482 No_date   14:03   23.34 .246
      [CN= 53.7: N= 3.00]
      [Tp= 1.83:DT= 1.00]
 243:0009--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:TA2          220.80    2.482 No_date   14:03   23.34  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA2.243
      remark:Runoff Hydrograph for TA2
 243:0010--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:TA2          220.80    2.482 No_date   14:03   23.34  n/a
                    +   02:C6           636.30    6.694 No_date   15:22   28.20  n/a
      [DT= 1.00]  SUM=  05:N7           857.10    8.790 No_date   14:59   26.95  n/a
 243:0011--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           05:N7           857.10    8.790 No_date   14:59   26.95  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N7.243
      remark:Confluence Hydrograph for N7
# Tributary B
 243:0012--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TB1          331.30    5.195 No_date   13:26   25.89 .272
      [CN= 56.5: N= 3.00]
      [Tp= 1.36:DT= 1.00]
 243:0013--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:TB1          331.30    5.195 No_date   13:26   25.89  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB1.243
      remark:Runoff Hydrograph for TB1
 243:0014--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TB1          331.30    5.195 No_date   13:26   25.89  n/a
      [RDT= 1.00] out<- 02:C7           331.30    4.822 No_date   14:01   25.89  n/a
      [L/S/n= 1590./ .168/.028]
      {Vmax=  .945:Dmax= 1.274}
 243:0015--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           02:C7           331.30    4.822 No_date   14:01   25.89  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C7.243
      remark:Routing Hydrograph for C7
 243:0016--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TB2          212.60    2.761 No_date   14:51   33.81 .356
      [CN= 64.3: N= 3.00]
      [Tp= 2.56:DT= 1.00]
 243:0017--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           01:TB2          212.60    2.761 No_date   14:51   33.81  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB2.243
      remark:Runoff Hydrograph for TB2
 243:0018--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:TB2          212.60    2.761 No_date   14:51   33.81  n/a
                    +   02:C7           331.30    4.822 No_date   14:01   25.89  n/a
      [DT= 1.00]  SUM=  06:N9           543.90    7.414 No_date   14:18   28.99  n/a
 243:0019--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           06:N9           543.90    7.414 No_date   14:18   28.99  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N9.243
      remark:Confluence Hydrograph for N9
# Tributary C
 243:0020--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB STANDHYD     07:TC1          662.60   52.476 No_date   12:14   63.88 .672
      [XIMP=.41:TIMP=.45]
      [LOSS= 2 :CN= 70.9]
      [Pervious     area: IAper= 5.21:SLPP=2.00:LGP=  70.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=2102.:MNI=.013:SCI=   .0]
 243:0021--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           07:TC1          662.60   52.476 No_date   12:14   63.88  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TC1.243
      remark:Runoff Hydrograph for TC1
# Main Channel
 243:0022--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            05:N7           857.10    8.790 No_date   14:59   26.95  n/a
                    +   06:N9           543.90    7.414 No_date   14:18   28.99  n/a
      [DT= 1.00]  SUM=  03:J1          1401.00   15.842 No_date   14:34   27.74  n/a
 243:0023--------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:J1          1401.00   15.842 No_date   14:34   27.74  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-J1.243
      remark:Confluence Hydrograph for J1
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243:0024--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:J1          1401.00   15.842 No_date   14:34   27.74  n/a
     [RDT= 1.00] out<- 02:C1          1401.00   14.738 No_date   15:17   27.74  n/a
     [L/S/n= 2670./ .205/.039]
     {Vmax= 1.078:Dmax= 2.028}
243:0025--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD            02:C1          1401.00   14.738 No_date   15:17   27.74  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C1.243
     remark:Routing Hydrograph for C1
243:0026--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB NASHYD        01:M1           874.00   12.644 No_date   13:55   28.69 .302
     [CN= 59.4: N= 3.00]
     [Tp= 1.76:DT= 1.00]
243:0027--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD            01:M1           874.00   12.644 No_date   13:55   28.69  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M1.243
     remark:Runoff Hydrograph for M1
243:0028--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD             01:M1           874.00   12.644 No_date   13:55   28.69  n/a
                      + 02:C1          1401.00   14.738 No_date   15:17   27.74  n/a
     [DT= 1.00]  SUM=  03:N1          2275.00   25.556 No_date   14:41   28.10  n/a
243:0029--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD            03:N1          2275.00   25.556 No_date   14:41   28.10  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N1.243
     remark:Confluence Hydrograph for N1
243:0030--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N1          2275.00   25.556 No_date   14:41   28.10  n/a
     [RDT= 1.00] out<- 02:C2          2275.00   24.667 No_date   15:13   28.10  n/a
     [L/S/n= 1580./ .178/.038]
     {Vmax=  .982:Dmax= 2.427}
243:0031--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD            02:C2          2275.00   24.667 No_date   15:13   28.10  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C2.243
     remark:Routing Hydrograph for C2
243:0032--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD      01:M2           222.30   22.071 No_date   12:08   67.38 .709
     [XIMP=.46:TIMP=.51]
     [LOSS= 2 :CN= 71.8]
     [Pervious     area: IAper= 4.99:SLPP=2.00:LGP=  68.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1217.:MNI=.013:SCI=   .0]
243:0033--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD            01:M2           222.30   22.071 No_date   12:08   67.38  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M2.243
     remark:Runoff Hydrograph for M2
243:0034--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD             01:M2           222.30   22.071 No_date   12:08   67.38  n/a
                      + 02:C2          2275.00   24.667 No_date   15:13   28.10  n/a
     [DT= 1.00]  SUM=  03:N2          2497.30   26.241 No_date   15:11   31.60  n/a
243:0035--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD            03:N2          2497.30   26.241 No_date   15:11   31.60  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N2.243
     remark:Confluence Hydrograph for N2
243:0036--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N2          2497.30   26.241 No_date   15:11   31.60  n/a
     [RDT= 1.00] out<- 02:C3          2497.30   26.185 No_date   15:18   31.60  n/a
     [L/S/n=  390./ .234/.039]
     {Vmax=  .876:Dmax= 1.853}
243:0037--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD            02:C3          2497.30   26.185 No_date   15:18   31.60  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C3.243
     remark:Routing Hydrograph for C3
243:0038--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD      01:M3           598.80   28.783 No_date   12:14   43.56 .458
     [XIMP=.28:TIMP=.31]
     [LOSS= 2 :CN= 53.4]
     [Pervious     area: IAper=11.08:SLPP=2.00:LGP=  98.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1998.:MNI=.013:SCI=   .0]
243:0039--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD            01:M3           598.80   28.783 No_date   12:14   43.56  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M3.243
     remark:Runoff Hydrograph for M3
243:0040--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD             01:M3           598.80   28.783 No_date   12:14   43.56  n/a
                      + 02:C3          2497.30   26.185 No_date   15:18   31.60  n/a
     [DT= 1.00]  SUM=  03:N3          3096.10   50.469 No_date   12:15   33.91  n/a
243:0041--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD            03:N3          3096.10   50.469 No_date   12:15   33.91  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N3.243
     remark:Confluence Hydrograph for N3
243:0042--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N3          3096.10   50.469 No_date   12:15   33.91  n/a
     [RDT= 1.00] out<- 02:C4          3096.10   43.622 No_date   12:32   33.91  n/a
     [L/S/n= 1460./ .297/.040]
     {Vmax= 1.492:Dmax= 3.073}
243:0043--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD            02:C4          3096.10   43.622 No_date   12:32   33.91  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C4.243
     remark:Routing Hydrograph for C4
243:0044--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD      01:M4            50.70    5.137 No_date   12:05   64.25 .676
     [XIMP=.29:TIMP=.32]
     [LOSS= 2 :CN= 78.0]
     [Pervious     area: IAper= 3.58:SLPP=2.00:LGP=  73.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 582.:MNI=.013:SCI=   .0]
243:0045--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD            01:M4            50.70    5.137 No_date   12:05   64.25  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M4.243
     remark:Runoff Hydrograph for M4
243:0046--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD             01:M4            50.70    5.137 No_date   12:05   64.25  n/a
                      + 02:C4          3096.10   43.622 No_date   12:32   33.91  n/a
     [DT= 1.00]  SUM=  04:N4          3146.80   46.532 No_date   12:28   34.40  n/a
243:0047--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD            04:N4          3146.80   46.532 No_date   12:28   34.40  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N4.243
     remark:Confluence Hydrograph for N4
243:0048--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD             04:N4          3146.80   46.532 No_date   12:28   34.40  n/a
                      + 07:TC1          662.60   52.476 No_date   12:14   63.88  n/a
     [DT= 1.00]  SUM=  03:J2          3809.40   96.036 No_date   12:18   39.53  n/a
243:0049--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD            03:J2          3809.40   96.036 No_date   12:18   39.53  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-J2.243
     remark:Confluence Hydrograph for J2
243:0050--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:J2          3809.40   96.036 No_date   12:18   39.53  n/a
     [RDT= 1.00] out<- 02:C5          3809.40   81.621 No_date   12:34   39.53  n/a
     [L/S/n=  980./ .094/.031]
     {Vmax=  .994:Dmax= 3.145}
243:0051--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD            02:C5          3809.40   81.621 No_date   12:34   39.53  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C5.243
     remark:Routing Hydrograph for C5
243:0052--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD      01:M5           152.00   11.681 No_date   12:09   60.67 .638
     [XIMP=.26:TIMP=.29]
     [LOSS= 2 :CN= 75.7]
     [Pervious     area: IAper= 4.08:SLPP=2.00:LGP= 117.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1007.:MNI=.013:SCI=   .0]
243:0053--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD            01:M5           152.00   11.681 No_date   12:09   60.67  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M5.243
     remark:Runoff Hydrograph for M5
243:0054--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD             01:M5           152.00   11.681 No_date   12:09   60.67  n/a
                      + 02:C5          3809.40   81.621 No_date   12:34   39.53  n/a
     [DT= 1.00]  SUM=  03:N5          3961.40   90.516 No_date   12:31   40.34  n/a
243:0055--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD            03:N5          3961.40   90.516 No_date   12:31   40.34  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N5.243
     remark:Confluence Hydrograph for N5
  ** END OF RUN : 243

********************************************************************************




 RUN:COMMAND#
 244:0001--------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on       0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 244 ]
#*******************************************************************************
#  Project Name: [Mosquito]    Project Number: [10418]
#  Model Version: [V12-final]
#  Date        : 22 Sept 2021
#  Modeled by    : [ Tyler Bauman ]
#  Checked by    : [ Calvin Paul ]
#  Company     : Rideau Valley Conservation Authority
#  License #   :  5329846
#*******************************************************************************
 244:0002--------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  =
      [SDT=30.00:SDUR=  24.00:PTOT= 110.93]
 244:0003--------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = C:\MODEL_~1\Current\MOSQUI~1\mosq_val.val
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Bilberry Creek Default Value File]
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=90.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .045]
      Parameters used in NASHYD:
      [Ia=   1.50 mm] [N= 3.00]
# Tributary A
 244:0004--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TA1          636.30    9.268 No_date   14:46   37.29 .336
      [CN= 58.9: N= 3.00]
      [Tp= 2.49:DT= 1.00]
 244:0005--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            03:TA1          636.30    9.268 No_date   14:46   37.29  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA1.244
      remark:Runoff Hydrograph for TA1
 244:0006--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TA1          636.30    9.268 No_date   14:46   37.29  n/a
      [RDT= 1.00] out<- 02:C6          636.30    8.977 No_date   15:26   37.29  n/a
      [L/S/n= 2390./ .199/.032]
      {Vmax= 1.166:Dmax= 1.388}
 244:0007--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            02:C6          636.30    8.977 No_date   15:26   37.29  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C6.244
      remark:Routing Hydrograph for C6
 244:0008--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TA2          220.80    3.369 No_date   14:01   31.33 .282
      [CN= 53.7: N= 3.00]
      [Tp= 1.83:DT= 1.00]
 244:0009--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            01:TA2          220.80    3.369 No_date   14:01   31.33  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA2.244
      remark:Runoff Hydrograph for TA2
 244:0010--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             01:TA2          220.80    3.369 No_date   14:01   31.33  n/a
                       + 02:C6          636.30    8.977 No_date   15:26   37.29  n/a
      [DT= 1.00]  SUM=  05:N7          857.10   11.795 No_date   14:57   35.76  n/a
 244:0011--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            05:N7          857.10   11.795 No_date   14:57   35.76  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-N7.244
      remark:Confluence Hydrograph for N7
# Tributary B
 244:0012--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       03:TB1          331.30    6.988 No_date   13:25   34.47 .311
      [CN= 56.5: N= 3.00]
      [Tp= 1.36:DT= 1.00]
 244:0013--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            03:TB1          331.30    6.988 No_date   13:25   34.47  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB1.244
      remark:Runoff Hydrograph for TB1
 244:0014--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:TB1          331.30    6.988 No_date   13:25   34.47  n/a
      [RDT= 1.00] out<- 02:C7          331.30    6.334 No_date   14:06   34.47  n/a
      [L/S/n= 1590./ .168/.028]
      {Vmax=  .826:Dmax= 1.407}
 244:0015--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            02:C7          331.30    6.334 No_date   14:06   34.47  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-C7.244
      remark:Routing Hydrograph for C7
 244:0016--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD       01:TB2          212.60    3.623 No_date   14:49   44.05 .397
      [CN= 64.3: N= 3.00]
      [Tp= 2.56:DT= 1.00]
 244:0017--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            01:TB2          212.60    3.623 No_date   14:49   44.05  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB2.244
      remark:Runoff Hydrograph for TB2
 244:0018--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             01:TB2          212.60    3.623 No_date   14:49   44.05  n/a
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                  +  02:C7          331.30    6.334 No_date   14:06   34.47  n/a
     [DT= 1.00]  SUM=  06:N9          543.90    9.797 No_date   14:16   38.22  n/a
 244:0019--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           06:N9          543.90    9.797 No_date   14:16   38.22  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N9.244
     remark:Confluence Hydrograph for N9
# Tributary C
 244:0020--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     07:TC1          662.60   66.437 No_date   12:13   77.43 .698
     [XIMP=.41:TIMP=.45]
     [LOSS= 2 :CN= 70.9]
     [Pervious     area: IAper= 5.21:SLPP=2.00:LGP=  70.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=2102.:MNI=.013:SCI=   .0]
 244:0021--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           07:TC1          662.60   66.437 No_date   12:13   77.43  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-TC1.244
     remark:Runoff Hydrograph for TC1
# Main Channel
 244:0022--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            05:N7           857.10   11.795 No_date   14:57   35.76  n/a
                  +  06:N9           543.90    9.797 No_date   14:16   38.22  n/a
     [DT= 1.00]  SUM=  03:J1          1401.00   21.262 No_date   14:36   36.71  n/a
 244:0023--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:J1          1401.00   21.262 No_date   14:36   36.71  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-J1.244
     remark:Confluence Hydrograph for J1
 244:0024--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:J1          1401.00   21.262 No_date   14:36   36.71  n/a
     [RDT= 1.00] out<- 02:C1          1401.00   20.019 No_date   15:14   36.71  n/a
     [L/S/n= 2670./ .205/.039]
     {Vmax= 1.135:Dmax= 2.233}
 244:0025--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C1          1401.00   20.019 No_date   15:14   36.71  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C1.244
     remark:Routing Hydrograph for C1
 244:0026--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB NASHYD       01:M1           874.00   16.846 No_date   13:54   37.88 .342
     [CN= 59.4: N= 3.00]
     [Tp= 1.76:DT= 1.00]
 244:0027--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M1           874.00   16.846 No_date   13:54   37.88  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M1.244
     remark:Runoff Hydrograph for M1
 244:0028--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M1           874.00   16.846 No_date   13:54   37.88  n/a
                  +  02:C1          1401.00   20.019 No_date   15:14   36.71  n/a
     [DT= 1.00]  SUM=  03:N1          2275.00   34.410 No_date   14:40   37.16  n/a
 244:0029--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N1          2275.00   34.410 No_date   14:40   37.16  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N1.244
     remark:Confluence Hydrograph for N1
 244:0030--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N1          2275.00   34.410 No_date   14:40   37.16  n/a
     [RDT= 1.00] out<- 02:C2          2275.00   33.307 No_date   15:07   37.16  n/a
     [L/S/n= 1580./ .178/.038]
     {Vmax= 1.000:Dmax= 2.621}
 244:0031--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C2          2275.00   33.307 No_date   15:07   37.16  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C2.244
     remark:Routing Hydrograph for C2
 244:0032--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M2           222.30   27.506 No_date   12:07   81.27 .733
     [XIMP=.46:TIMP=.51]
     [LOSS= 2 :CN= 71.8]
     [Pervious     area: IAper= 4.99:SLPP=2.00:LGP=  68.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1217.:MNI=.013:SCI=   .0]
 244:0033--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M2           222.30   27.506 No_date   12:07   81.27  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M2.244
     remark:Runoff Hydrograph for M2
 244:0034--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M2           222.30   27.506 No_date   12:07   81.27  n/a
                  +  02:C2          2275.00   33.307 No_date   15:07   37.16  n/a
     [DT= 1.00]  SUM=  03:N2          2497.30   35.194 No_date   15:02   41.09  n/a
 244:0035--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N2          2497.30   35.194 No_date   15:02   41.09  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N2.244
     remark:Confluence Hydrograph for N2
 244:0036--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N2          2497.30   35.194 No_date   15:02   41.09  n/a
     [RDT= 1.00] out<- 02:C3          2497.30   35.135 No_date   15:11   41.09  n/a
     [L/S/n=  390./ .234/.039]
     {Vmax=  .910:Dmax= 1.984}
 244:0037--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C3          2497.30   35.135 No_date   15:11   41.09  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C3.244
     remark:Routing Hydrograph for C3
 244:0038--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M3           598.80   36.989 No_date   12:13   53.89 .486
     [XIMP=.28:TIMP=.31]
     [LOSS= 2 :CN= 53.4]
     [Pervious     area: IAper=11.08:SLPP=2.00:LGP=  98.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1998.:MNI=.013:SCI=   .0]
 244:0039--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M3           598.80   36.989 No_date   12:13   53.89  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M3.244
     remark:Runoff Hydrograph for M3
 244:0040--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M3           598.80   36.989 No_date   12:13   53.89  n/a
                  +  02:C3          2497.30   35.135 No_date   15:11   41.09  n/a
     [DT= 1.00]  SUM=  03:N3          3096.10   64.633 No_date   12:14   43.56  n/a
 244:0041--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N3          3096.10   64.633 No_date   12:14   43.56  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N3.244
     remark:Confluence Hydrograph for N3
 244:0042--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N3          3096.10   64.633 No_date   12:14   43.56  n/a
     [RDT= 1.00] out<- 02:C4          3096.10   53.908 No_date   12:35   43.56  n/a
     [L/S/n= 1460./ .297/.040]
     {Vmax= 1.373:Dmax= 3.276}
 244:0043--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C4          3096.10   53.908 No_date   12:35   43.56  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C4.244
     remark:Routing Hydrograph for C4
 244:0044--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M4            50.70    6.531 No_date   12:04   78.24 .705
     [XIMP=.29:TIMP=.32]
     [LOSS= 2 :CN= 78.0]
     [Pervious     area: IAper= 3.58:SLPP=2.00:LGP=  73.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 582.:MNI=.013:SCI=   .0]
 244:0045--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M4            50.70    6.531 No_date   12:04   78.24  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M4.244
     remark:Runoff Hydrograph for M4
 244:0046--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M4            50.70    6.531 No_date   12:04   78.24  n/a
                  +  02:C4          3096.10   53.908 No_date   12:35   43.56  n/a
     [DT= 1.00]  SUM=  04:N4          3146.80   57.169 No_date   12:30   44.12  n/a
 244:0047--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           04:N4          3146.80   57.169 No_date   12:30   44.12  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N4.244
     remark:Confluence Hydrograph for N4
 244:0048--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            04:N4          3146.80   57.169 No_date   12:30   44.12  n/a
                  +  07:TC1          662.60   66.437 No_date   12:13   77.43  n/a
     [DT= 1.00]  SUM=  03:J2          3809.40  119.476 No_date   12:17   49.92  n/a
 244:0049--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:J2          3809.40  119.476 No_date   12:17   49.92  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-J2.244
     remark:Confluence Hydrograph for J2
 244:0050--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:J2          3809.40  119.476 No_date   12:17   49.92  n/a
     [RDT= 1.00] out<- 02:C5          3809.40  101.702 No_date   12:31   49.92  n/a
     [L/S/n=  980./ .094/.031]
     {Vmax= 1.038:Dmax= 3.354}
 244:0051--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C5          3809.40  101.702 No_date   12:31   49.92  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C5.244
     remark:Routing Hydrograph for C5
 244:0052--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M5           152.00   15.121 No_date   12:08   74.24 .669
     [XIMP=.26:TIMP=.29]
     [LOSS= 2 :CN= 75.7]
     [Pervious     area: IAper= 4.08:SLPP=2.00:LGP= 117.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1007.:MNI=.013:SCI=   .0]
 244:0053--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M5           152.00   15.121 No_date   12:08   74.24  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M5.244
     remark:Runoff Hydrograph for M5
 244:0054--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M5           152.00   15.121 No_date   12:08   74.24  n/a
                  +  02:C5          3809.40  101.702 No_date   12:31   49.92  n/a
     [DT= 1.00]  SUM=  03:N5          3961.40  113.072 No_date   12:27   50.85  n/a
 244:0055--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N5          3961.40  113.072 No_date   12:27   50.85  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N5.244
     remark:Confluence Hydrograph for N5
  ** END OF RUN : 244

 ************************************************************************************




 RUN:COMMAND#
 245:0001--------------------------------------------------------------------------------
    START
     [TZERO =    .00 hrs on        0]
     [METOUT=   2    (1=imperial, 2=metric output)]
     [NSTORM=   1 ]
     [NRUN  = 245 ]
#*************************************************************************
#  Project Name: [Mosquito]    Project Number: [10418]
#  Model Version: [V12-final]
#  Date        : 22 Sept 2021
#  Modeled by    : [ Tyler Bauman ]
#  Checked by    : [ Calvin Paul ]
#  Company     : Rideau Valley Conservation Authority
#  License #   :  5329846
#*************************************************************************
 245:0002--------------------------------------------------------------------------------
    READ STORM
     Filename = storm.001
     Comment  =
     [SDT=30.00:SDUR=  24.00:PTOT= 134.54]
 245:0003--------------------------------------------------------------------------------
    DEFAULT VALUES
     Filename = C:\MODEL_~1\Current\MOSQUI~1\mosq_val.val
     ICASEdv  = 1 (read and print data)
     FileTitle= File comment: [Bilberry Creek Default Value File]
                THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
     Horton's infiltration equation parameters:
     [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
     Parameters for PERVIOUS surfaces in STANDHYD:
     [IAper=   4.67 mm] [LGP=90.00 m] [MNP= .250]
     Parameters for IMPERVIOUS surfaces in STANDHYD:
     [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .045]
     Parameters used in NASHYD:
     [Ia=   1.50 mm] [N= 3.00]
# Tributary A
 245:0004--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB NASHYD       03:TA1          636.30   13.094 No_date   14:44   52.14 .388
     [CN= 58.9: N= 3.00]
     [Tp= 2.49:DT= 1.00]
 245:0005--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:TA1          636.30   13.094 No_date   14:44   52.14  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA1.245
     remark:Runoff Hydrograph for TA1
 245:0006--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:TA1          636.30   13.094 No_date   14:44   52.14  n/a
     [RDT= 1.00] out<- 02:C6          636.30   12.421 No_date   15:36   52.14  n/a
     [L/S/n= 2390./ .199/.032]
     {Vmax= 1.037:Dmax= 1.566}
 245:0007--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C6          636.30   12.421 No_date   15:36   52.14  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C6.245
     remark:Routing Hydrograph for C6
 245:0008--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB NASHYD       01:TA2          220.80    4.856 No_date   13:59   44.58 .331
     [CN= 53.7: N= 3.00]
     [Tp= 1.83:DT= 1.00]
 245:0009--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:TA2          220.80    4.856 No_date   13:59   44.58  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA2.245
     remark:Runoff Hydrograph for TA2
 245:0010--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:TA2          220.80    4.856 No_date   13:59   44.58  n/a
                  +  02:C6          636.30   12.421 No_date   15:36   52.14  n/a
     [DT= 1.00]  SUM=  05:N7          857.10   16.262 No_date   15:02   50.19  n/a
 245:0011--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           05:N7          857.10   16.262 No_date   15:02   50.19  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N7.245
     remark:Confluence Hydrograph for N7
# Tributary B
 245:0012--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
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    CALIB NASHYD      03:TB1          331.30    9.972 No_date   13:24   48.58 .361
     [CN= 56.5: N= 3.00]
     [Tp= 1.36:DT= 1.00]
245:0013---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          03:TB1          331.30    9.972 No_date   13:24   48.58  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB1.245
     remark:Runoff Hydrograph for TB1
245:0014---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:TB1          331.30    9.972 No_date   13:24   48.58  n/a
     [RDT= 1.00] out<- 02:C7           331.30    8.813 No_date   14:09   48.58  n/a
     [L/S/n= 1590./ .168/.028]
     {Vmax=  .746:Dmax= 1.561}
245:0015---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          02:C7           331.30    8.813 No_date   14:09   48.58  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C7.245
     remark:Routing Hydrograph for C7
245:0016---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB NASHYD      01:TB2          212.60    5.023 No_date   14:47   60.52 .450
     [CN= 64.3: N= 3.00]
     [Tp= 2.56:DT= 1.00]
245:0017---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          01:TB2          212.60    5.023 No_date   14:47   60.52  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB2.245
     remark:Runoff Hydrograph for TB2
245:0018---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD           01:TB2          212.60    5.023 No_date   14:47   60.52  n/a
                  +  02:C7           331.30    8.813 No_date   14:09   48.58  n/a
     [DT= 1.00]  SUM=  06:N9          543.90   13.650 No_date   14:17   53.25  n/a
245:0019---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          06:N9           543.90   13.650 No_date   14:17   53.25  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N9.245
     remark:Confluence Hydrograph for N9
# Tributary C
245:0020---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD    07:TC1          662.60   89.372 No_date   12:12   98.20 .730
     [XIMP=.41:TIMP=.45]
     [LOSS= 2 :CN= 70.9]
     [Pervious     area: IAper= 5.21:SLPP=2.00:LGP=  70.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=2102.:MNI=.013:SCI=   .0]
245:0021---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          07:TC1          662.60   89.372 No_date   12:12   98.20  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-TC1.245
     remark:Runoff Hydrograph for TC1
# Main Channel
245:0022---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD           05:N7           857.10   16.262 No_date   15:02   50.19  n/a
                  +  06:N9           543.90   13.650 No_date   14:17   53.25  n/a
     [DT= 1.00]  SUM=  03:J1          1401.00   29.402 No_date   14:38   51.38  n/a
245:0023---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          03:J1           1401.00   29.402 No_date   14:38   51.38  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-J1.245
     remark:Confluence Hydrograph for J1
245:0024---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:J1          1401.00   29.402 No_date   14:38   51.38  n/a
     [RDT= 1.00] out<- 02:C1          1401.00   27.657 No_date   15:28   51.38  n/a
     [L/S/n= 2670./ .205/.039]
     {Vmax= 1.083:Dmax= 2.513}
245:0025---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          02:C1           1401.00   27.657 No_date   15:28   51.38  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C1.245
     remark:Routing Hydrograph for C1
245:0026---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB NASHYD      01:M1           874.00   23.774 No_date   13:52   52.88 .393
     [CN= 59.4: N= 3.00]
     [Tp= 1.76:DT= 1.00]
245:0027---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          01:M1           874.00   23.774 No_date   13:52   52.88  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M1.245
     remark:Runoff Hydrograph for M1
245:0028---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD           01:M1           874.00   23.774 No_date   13:52   52.88  n/a
                  +  02:C1          1401.00   27.657 No_date   15:28   51.38  n/a
     [DT= 1.00]  SUM=  03:N1          2275.00   47.439 No_date   14:37   51.96  n/a
245:0029---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          03:N1           2275.00   47.439 No_date   14:37   51.96  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N1.245
     remark:Confluence Hydrograph for N1
245:0030---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N1          2275.00   47.439 No_date   14:37   51.96  n/a
     [RDT= 1.00] out<- 02:C2          2275.00   46.319 No_date   15:03   51.96  n/a
     [L/S/n= 1580./ .178/.038]
     {Vmax= 1.055:Dmax= 2.859}
245:0031---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          02:C2           2275.00   46.319 No_date   15:03   51.96  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C2.245
     remark:Routing Hydrograph for C2
245:0032---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD    01:M2           222.30   36.324 No_date   12:06  102.47 .762
     [XIMP=.46:TIMP=.51]
     [LOSS= 2 :CN= 71.8]
     [Pervious     area: IAper= 4.99:SLPP=2.00:LGP=  68.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1217.:MNI=.013:SCI=   .0]
245:0033---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          01:M2           222.30   36.324 No_date   12:06  102.47  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M2.245
     remark:Runoff Hydrograph for M2
245:0034---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD           01:M2           222.30   36.324 No_date   12:06  102.47  n/a
                  +  02:C2          2275.00   46.319 No_date   15:03   51.96  n/a
     [DT= 1.00]  SUM=  03:N2          2497.30   48.657 No_date   15:01   56.45  n/a
245:0035---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          03:N2           2497.30   48.657 No_date   15:01   56.45  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N2.245
     remark:Confluence Hydrograph for N2
245:0036---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N2          2497.30   48.657 No_date   15:01   56.45  n/a
     [RDT= 1.00] out<- 02:C3          2497.30   48.592 No_date   15:05   56.45  n/a
     [L/S/n=  390./ .234/.039]
     {Vmax=  .974:Dmax= 2.148}
245:0037---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          02:C3           2497.30   48.592 No_date   15:05   56.45  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C3.245
     remark:Routing Hydrograph for C3
245:0038---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD    01:M3           598.80   51.057 No_date   12:12   70.23 .522
     [XIMP=.28:TIMP=.31]
     [LOSS= 2 :CN= 53.4]
     [Pervious     area: IAper=11.08:SLPP=2.00:LGP=  98.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1998.:MNI=.013:SCI=   .0]
245:0039---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          01:M3           598.80   51.057 No_date   12:12   70.23  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M3.245
     remark:Runoff Hydrograph for M3
245:0040---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD           01:M3           598.80   51.057 No_date   12:12   70.23  n/a
                  +  02:C3          2497.30   48.592 No_date   15:05   56.45  n/a
     [DT= 1.00]  SUM=  03:N3          3096.10   88.802 No_date   12:12   59.12  n/a
245:0041---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          03:N3           3096.10   88.802 No_date   12:12   59.12  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N3.245
     remark:Confluence Hydrograph for N3
245:0042---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N3          3096.10   88.802 No_date   12:12   59.12  n/a
     [RDT= 1.00] out<- 02:C4          3096.10   71.739 No_date   12:32   59.12  n/a
     [L/S/n= 1460./ .297/.040]
     {Vmax= 1.349:Dmax= 3.553}
245:0043---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          02:C4           3096.10   71.739 No_date   12:32   59.12  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C4.245
     remark:Routing Hydrograph for C4
245:0044---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD    01:M4            50.70    8.698 No_date   12:04   99.61 .740
     [XIMP=.29:TIMP=.32]
     [LOSS= 2 :CN= 78.0]
     [Pervious     area: IAper= 3.58:SLPP=2.00:LGP=  73.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 582.:MNI=.013:SCI=   .0]
245:0045---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          01:M4            50.70    8.698 No_date   12:04   99.61  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M4.245
     remark:Runoff Hydrograph for M4
245:0046---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD           01:M4            50.70    8.698 No_date   12:04   99.61  n/a
                  +  02:C4          3096.10   71.739 No_date   12:32   59.12  n/a
     [DT= 1.00]  SUM=  04:N4          3146.80   75.927 No_date   12:29   59.77  n/a
245:0047---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          04:N4           3146.80   75.927 No_date   12:29   59.77  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N4.245
     remark:Confluence Hydrograph for N4
245:0048---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD           04:N4           3146.80   75.927 No_date   12:29   59.77  n/a
                  +  07:TC1          662.60   89.372 No_date   12:12   98.20  n/a
     [DT= 1.00]  SUM=  03:J2          3809.40  158.773 No_date   12:16   66.45  n/a
245:0049---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          03:J2           3809.40  158.773 No_date   12:16   66.45  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-J2.245
     remark:Confluence Hydrograph for J2
245:0050---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:J2          3809.40  158.773 No_date   12:16   66.45  n/a
     [RDT= 1.00] out<- 02:C5          3809.40  135.645 No_date   12:27   66.45  n/a
     [L/S/n=  980./ .094/.031]
     {Vmax= 1.112:Dmax= 3.662}
245:0051---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          02:C5           3809.40  135.645 No_date   12:27   66.45  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C5.245
     remark:Routing Hydrograph for C5
245:0052---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD    01:M5           152.00   20.627 No_date   12:07   95.10 .707
     [XIMP=.26:TIMP=.29]
     [LOSS= 2 :CN= 75.7]
     [Pervious     area: IAper= 4.08:SLPP=2.00:LGP= 117.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1007.:MNI=.013:SCI=   .0]
245:0053---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          01:M5           152.00   20.627 No_date   12:07   95.10  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M5.245
     remark:Runoff Hydrograph for M5
245:0054---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD           01:M5           152.00   20.627 No_date   12:07   95.10  n/a
                  +  02:C5          3809.40  135.645 No_date   12:27   66.45  n/a
     [DT= 1.00]  SUM=  03:N5          3961.40  151.391 No_date   12:25   67.55  n/a
245:0055---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD          03:N5           3961.40  151.391 No_date   12:25   67.55  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N5.245
     remark:Confluence Hydrograph for N5
  ** END OF RUN : 245

************************************************************************************




 RUN:COMMAND#
 246:0001---------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 246 ]
#************************************************************************
#  Project Name: [Mosquito]    Project Number: [10418]
#  Model Version: [V12-final]
#  Date       : 22 Sept 2021
#  Modeled by    : [ Tyler Bauman ]
#  Checked by    : [ Calvin Paul ]
#  Company     : Rideau Valley Conservation Authority
#  License #   :  5329846
#************************************************************************
 246:0002---------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  =
      [SDT=30.00:SDUR=  24.00:PTOT= 144.23]
 246:0003---------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = C:\MODEL_~1\Current\MOSQUI~1\mosq_val.val
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Bilberry Creek Default Value File]
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=90.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .045]
      Parameters used in NASHYD:
      [Ia=   1.50 mm] [N= 3.00]
# Tributary A
 246:0004---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CALIB NASHYD      03:TA1          636.30   14.759 No_date   14:43   58.61 .406
      [CN= 58.9: N= 3.00]
      [Tp= 2.49:DT= 1.00]
 246:0005---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD          03:TA1          636.30   14.759 No_date   14:43   58.61  n/a
      fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA1.246
      remark:Runoff Hydrograph for TA1
 246:0006---------------ID:NHYD-----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
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    ROUTE CHANNEL   -> 03:TA1          636.30   14.759 No_date   14:43   58.61  n/a
     [RDT= 1.00] out<- 02:C6           636.30   13.944 No_date   15:35   58.61  n/a
     [L/S/n= 2390./ .199/.032]
     {Vmax= 1.004:Dmax= 1.625}
246:0007--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C6           636.30   13.944 No_date   15:35   58.61  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C6.246
     remark:Routing Hydrograph for C6
246:0008--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB NASHYD       01:TA2          220.80    5.510 No_date   13:59   50.42 .350
     [CN= 53.7: N= 3.00]
     [Tp= 1.83:DT= 1.00]
246:0009--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:TA2          220.80    5.510 No_date   13:59   50.42  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA2.246
     remark:Runoff Hydrograph for TA2
246:0010--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:TA2          220.80    5.510 No_date   13:59   50.42  n/a
                  +  02:C6           636.30   13.944 No_date   15:35   58.61  n/a
     [DT= 1.00]  SUM=  05:N7          857.10   18.276 No_date   15:09   56.50  n/a
246:0011--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           05:N7           857.10   18.276 No_date   15:09   56.50  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N7.246
     remark:Confluence Hydrograph for N7
# Tributary B
246:0012--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB NASHYD       03:TB1          331.30   11.276 No_date   13:24   54.77 .380
     [CN= 56.5: N= 3.00]
     [Tp= 1.36:DT= 1.00]
246:0013--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:TB1          331.30   11.276 No_date   13:24   54.77  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB1.246
     remark:Runoff Hydrograph for TB1
246:0014--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:TB1          331.30   11.276 No_date   13:24   54.77  n/a
     [RDT= 1.00] out<- 02:C7           331.30    9.937 No_date   14:05   54.77  n/a
     [L/S/n= 1590./ .168/.028]
     {Vmax=  .739:Dmax= 1.612}
246:0015--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C7           331.30    9.937 No_date   14:05   54.77  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C7.246
     remark:Routing Hydrograph for C7
246:0016--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB NASHYD       01:TB2          212.60    5.625 No_date   14:46   67.63 .469
     [CN= 64.3: N= 3.00]
     [Tp= 2.56:DT= 1.00]
246:0017--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:TB2          212.60    5.625 No_date   14:46   67.63  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB2.246
     remark:Runoff Hydrograph for TB2
246:0018--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:TB2          212.60    5.625 No_date   14:46   67.63  n/a
                  +  02:C7           331.30    9.937 No_date   14:05   54.77  n/a
     [DT= 1.00]  SUM=  06:N9          543.90   15.314 No_date   14:14   59.80  n/a
246:0019--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           06:N9           543.90   15.314 No_date   14:14   59.80  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N9.246
     remark:Confluence Hydrograph for N9
# Tributary C
246:0020--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     07:TC1          662.60   99.109 No_date   12:11  106.88 .741
     [XIMP=.41:TIMP=.45]
     [LOSS= 2 :CN= 70.9]
     [Pervious     area: IAper= 5.21:SLPP=2.00:LGP=  70.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=2102.:MNI=.013:SCI=   .0]
246:0021--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           07:TC1          662.60   99.109 No_date   12:11  106.88  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-TC1.246
     remark:Runoff Hydrograph for TC1
# Main Channel
246:0022--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            05:N7           857.10   18.276 No_date   15:09   56.50  n/a
                  +  06:N9           543.90   15.314 No_date   14:14   59.80  n/a
     [DT= 1.00]  SUM=  03:J1          1401.00   32.926 No_date   14:39   57.78  n/a
246:0023--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:J1           1401.00   32.926 No_date   14:39   57.78  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-J1.246
     remark:Confluence Hydrograph for J1
246:0024--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:J1          1401.00   32.926 No_date   14:39   57.78  n/a
     [RDT= 1.00] out<- 02:C1          1401.00   30.931 No_date   15:29   57.78  n/a
     [L/S/n= 2670./ .205/.039]
     {Vmax= 1.064:Dmax= 2.604}
246:0025--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C1          1401.00   30.931 No_date   15:29   57.78  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C1.246
     remark:Routing Hydrograph for C1
246:0026--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB NASHYD       01:M1           874.00   26.785 No_date   13:52   59.42 .412
     [CN= 59.4: N= 3.00]
     [Tp= 1.76:DT= 1.00]
246:0027--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M1           874.00   26.785 No_date   13:52   59.42  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M1.246
     remark:Runoff Hydrograph for M1
246:0028--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M1           874.00   26.785 No_date   13:52   59.42  n/a
                  +  02:C1          1401.00   30.931 No_date   15:29   57.78  n/a
     [DT= 1.00]  SUM=  03:N1          2275.00   53.067 No_date   14:37   58.41  n/a
246:0029--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N1           2275.00   53.067 No_date   14:37   58.41  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N1.246
     remark:Confluence Hydrograph for N1
246:0030--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N1          2275.00   53.067 No_date   14:37   58.41  n/a
     [RDT= 1.00] out<- 02:C2          2275.00   51.911 No_date   15:01   58.41  n/a
     [L/S/n= 1580./ .178/.038]
     {Vmax= 1.081:Dmax= 2.952}
246:0031--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C2          2275.00   51.911 No_date   15:01   58.41  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C2.246
     remark:Routing Hydrograph for C2
246:0032--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M2           222.30   40.076 No_date   12:06  111.31 .772
     [XIMP=.46:TIMP=.51]
     [LOSS= 2 :CN= 71.8]
     [Pervious     area: IAper= 4.99:SLPP=2.00:LGP=  68.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1217.:MNI=.013:SCI=   .0]
246:0033--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M2           222.30   40.076 No_date   12:06  111.31  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M2.246
     remark:Runoff Hydrograph for M2
246:0034--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M2           222.30   40.076 No_date   12:06  111.31  n/a
                  +  02:C2          2275.00   51.911 No_date   15:01   58.41  n/a
     [DT= 1.00]  SUM=  03:N2          2497.30   54.436 No_date   14:57   63.12  n/a
246:0035--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N2           2497.30   54.436 No_date   14:57   63.12  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N2.246
     remark:Confluence Hydrograph for N2
246:0036--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N2          2497.30   54.436 No_date   14:57   63.12  n/a
     [RDT= 1.00] out<- 02:C3          2497.30   54.372 No_date   15:04   63.12  n/a
     [L/S/n=  390./ .234/.039]
     {Vmax= 1.002:Dmax= 2.213}
246:0037--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C3          2497.30   54.372 No_date   15:04   63.12  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C3.246
     remark:Routing Hydrograph for C3
246:0038--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M3           598.80   57.462 No_date   12:12   77.22 .535
     [XIMP=.28:TIMP=.31]
     [LOSS= 2 :CN= 53.4]
     [Pervious     area: IAper=11.08:SLPP=2.00:LGP=  98.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1998.:MNI=.013:SCI=   .0]
246:0039--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M3           598.80   57.462 No_date   12:12   77.22  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M3.246
     remark:Runoff Hydrograph for M3
246:0040--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M3           598.80   57.462 No_date   12:12   77.22  n/a
                  +  02:C3          2497.30   54.372 No_date   15:04   63.12  n/a
     [DT= 1.00]  SUM=  03:N3          3096.10   99.679 No_date   12:12   65.84  n/a
246:0041--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N3           3096.10   99.679 No_date   12:12   65.84  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N3.246
     remark:Confluence Hydrograph for N3
246:0042--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N3          3096.10   99.679 No_date   12:12   65.84  n/a
     [RDT= 1.00] out<- 02:C4          3096.10   79.955 No_date   12:30   65.84  n/a
     [L/S/n= 1460./ .297/.040]
     {Vmax= 1.357:Dmax= 3.662}
246:0043--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C4          3096.10   79.955 No_date   12:30   65.84  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C4.246
     remark:Routing Hydrograph for C4
246:0044--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M4            50.70    9.657 No_date   12:03  108.52 .752
     [XIMP=.29:TIMP=.32]
     [LOSS= 2 :CN= 78.0]
     [Pervious     area: IAper= 3.58:SLPP=2.00:LGP=  73.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 582.:MNI=.013:SCI=   .0]
246:0045--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M4            50.70    9.657 No_date   12:03  108.52  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M4.246
     remark:Runoff Hydrograph for M4
246:0046--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M4            50.70    9.657 No_date   12:03  108.52  n/a
                  +  02:C4          3096.10   79.955 No_date   12:30   65.84  n/a
     [DT= 1.00]  SUM=  04:N4          3146.80   84.787 No_date   12:27   66.53  n/a
246:0047--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           04:N4          3146.80   84.787 No_date   12:27   66.53  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N4.246
     remark:Confluence Hydrograph for N4
246:0048--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            04:N4          3146.80   84.787 No_date   12:27   66.53  n/a
                  +  07:TC1          662.60   99.109 No_date   12:11  106.88  n/a
     [DT= 1.00]  SUM=  03:J2          3809.40  176.921 No_date   12:15   73.55  n/a
246:0049--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:J2          3809.40  176.921 No_date   12:15   73.55  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-J2.246
     remark:Confluence Hydrograph for J2
246:0050--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:J2          3809.40  176.921 No_date   12:15   73.55  n/a
     [RDT= 1.00] out<- 02:C5          3809.40  151.104 No_date   12:26   73.55  n/a
     [L/S/n=  980./ .094/.031]
     {Vmax= 1.145:Dmax= 3.794}
246:0051--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C5          3809.40  151.104 No_date   12:26   73.55  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C5.246
     remark:Routing Hydrograph for C5
246:0052--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M5           152.00   23.032 No_date   12:07  103.82 .720
     [XIMP=.26:TIMP=.29]
     [LOSS= 2 :CN= 75.7]
     [Pervious     area: IAper= 4.08:SLPP=2.00:LGP= 117.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1007.:MNI=.013:SCI=   .0]
246:0053--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M5           152.00   23.032 No_date   12:07  103.82  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M5.246
     remark:Runoff Hydrograph for M5
246:0054--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M5           152.00   23.032 No_date   12:07  103.82  n/a
                  +  02:C5          3809.40  151.104 No_date   12:26   73.55  n/a
     [DT= 1.00]  SUM=  03:N5          3961.40  169.010 No_date   12:22   74.71  n/a
246:0055--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N5          3961.40  169.010 No_date   12:22   74.71  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N5.246
     remark:Confluence Hydrograph for N5
 ** END OF RUN : 246

************************************************************************************




 RUN:COMMAND#
 247:0001--------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 247 ]
#*************************************************************************
#  Project Name: [Mosquito]    Project Number: [10418]
#  Model Version: [V12-final]
#  Date        : 22 Sept 2021
#  Modeled by    : [ Tyler Bauman ]
#  Checked by    : [ Calvin Paul ]
#  Company     : Rideau Valley Conservation Authority
#  License #   :  5329846
#*************************************************************************
 247:0002--------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
```

```
     Comment  =
     [SDT=30.00:SDUR=  24.00:PTOT= 150.87]
247:0003----------------------------------------------------------------------------
    DEFAULT VALUES
     Filename = C:\MODEL_~1\Current\MOSQUI~1\mosq_val.val
     ICASEdv  = 1 (read and print data)
     FileTitle= File comment: [Bilberry Creek Default Value File]
              THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
     Horton's infiltration equation parameters:
     [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
     Parameters for PERVIOUS surfaces in STANDHYD:
     [IAper=   4.67 mm] [LGP=90.00 m] [MNP= .250]
     Parameters for IMPERVIOUS surfaces in STANDHYD:
     [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .045]
     Parameters used in NASHYD:
     [Ia=   1.50 mm] [N= 3.00]
# Tributary A
247:0004--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB NASHYD       03:TA1          636.30   15.938 No_date   14:43   63.16 .419
     [CN= 58.9: N= 3.00]
     [Tp= 2.49:DT= 1.00]
247:0005--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:TA1          636.30   15.938 No_date   14:43   63.16  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA1.247
     remark:Runoff Hydrograph for TA1
247:0006--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:TA1          636.30   15.938 No_date   14:43   63.16  n/a
     [RDT= 1.00] out<- 02:C6           636.30   15.025 No_date   15:36   63.16  n/a
     [L/S/n= 2390./ .199/.032]
     {Vmax=  .984:Dmax= 1.665}
247:0007--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C6           636.30   15.025 No_date   15:36   63.16  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C6.247
     remark:Routing Hydrograph for C6
247:0008--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB NASHYD       01:TA2          220.80    5.975 No_date   13:58   54.55 .362
     [CN= 53.7: N= 3.00]
     [Tp= 1.83:DT= 1.00]
247:0009--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:TA2          220.80    5.975 No_date   13:58   54.55  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-TA2.247
     remark:Runoff Hydrograph for TA2
247:0010--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:TA2          220.80    5.975 No_date   13:58   54.55  n/a
                     +  02:C6           636.30   15.025 No_date   15:36   63.16  n/a
     [DT= 1.00]  SUM=  05:N7           857.10   19.703 No_date   15:09   60.94  n/a
247:0011--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           05:N7           857.10   19.703 No_date   15:09   60.94  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N7.247
     remark:Confluence Hydrograph for N7
# Tributary B
247:0012--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB NASHYD       03:TB1          331.30   12.202 No_date   13:23   59.13 .392
     [CN= 56.5: N= 3.00]
     [Tp= 1.36:DT= 1.00]
247:0013--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:TB1          331.30   12.202 No_date   13:23   59.13  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB1.247
     remark:Runoff Hydrograph for TB1
247:0014--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:TB1          331.30   12.202 No_date   13:23   59.13  n/a
     [RDT= 1.00] out<- 02:C7           331.30   10.756 No_date   14:02   59.13  n/a
     [L/S/n= 1590./ .168/.028]
     {Vmax=  .739:Dmax= 1.644}
247:0015--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C7           331.30   10.756 No_date   14:02   59.13  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C7.247
     remark:Routing Hydrograph for C7
247:0016--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB NASHYD       01:TB2          212.60    6.049 No_date   14:46   72.61 .481
     [CN= 64.3: N= 3.00]
     [Tp= 2.56:DT= 1.00]
247:0017--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:TB2          212.60    6.049 No_date   14:46   72.61  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-TB2.247
     remark:Runoff Hydrograph for TB2
247:0018--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:TB2          212.60    6.049 No_date   14:46   72.61  n/a
                     +  02:C7           331.30   10.756 No_date   14:02   59.13  n/a
     [DT= 1.00]  SUM=  06:N9           543.90   16.530 No_date   14:17   64.40  n/a
247:0019--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           06:N9           543.90   16.530 No_date   14:17   64.40  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N9.247
     remark:Confluence Hydrograph for N9
# Tributary C
247:0020--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     07:TC1          662.60  106.200 No_date   12:11  112.89 .748
     [XIMP=.41:TIMP=.45]
     [LOSS= 2 :CN= 70.9]
     [Pervious     area: IAper= 5.21:SLPP=2.00:LGP=  70.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=2102.:MNI=.013:SCI=   .0]
247:0021--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           07:TC1          662.60  106.200 No_date   12:11  112.89  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-TC1.247
     remark:Runoff Hydrograph for TC1
# Main Channel
247:0022--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            05:N7           857.10   19.703 No_date   15:09   60.94  n/a
                     +  06:N9           543.90   16.530 No_date   14:17   64.40  n/a
     [DT= 1.00]  SUM=  03:J1          1401.00   35.459 No_date   14:39   62.28  n/a
247:0023--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:J1           1401.00   35.459 No_date   14:39   62.28  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-J1.247
     remark:Confluence Hydrograph for J1
247:0024--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:J1          1401.00   35.459 No_date   14:39   62.28  n/a
     [RDT= 1.00] out<- 02:C1          1401.00   33.259 No_date   15:30   62.28  n/a
     [L/S/n= 2670./ .205/.039]
     {Vmax= 1.051:Dmax= 2.663}
247:0025--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C1           1401.00   33.259 No_date   15:30   62.28  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C1.247
     remark:Routing Hydrograph for C1
247:0026--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB NASHYD       01:M1           874.00   28.917 No_date   13:51   64.01 .424
     [CN= 59.4: N= 3.00]
     [Tp= 1.76:DT= 1.00]
247:0027--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M1           874.00   28.917 No_date   13:51   64.01  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M1.247
     remark:Runoff Hydrograph for M1
247:0028--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M1           874.00   28.917 No_date   13:51   64.01  n/a
                     +  02:C1          1401.00   33.259 No_date   15:30   62.28  n/a
     [DT= 1.00]  SUM=  03:N1          2275.00   57.057 No_date   14:37   62.95  n/a
247:0029--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N1           2275.00   57.057 No_date   14:37   62.95  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N1.247
     remark:Confluence Hydrograph for N1
247:0030--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N1          2275.00   57.057 No_date   14:37   62.95  n/a
     [RDT= 1.00] out<- 02:C2          2275.00   55.883 No_date   15:00   62.95  n/a
     [L/S/n= 1580./ .178/.038]
     {Vmax= 1.098:Dmax= 3.014}
247:0031--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C2           2275.00   55.883 No_date   15:00   62.95  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C2.247
     remark:Routing Hydrograph for C2
247:0032--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M2           222.30   42.522 No_date   12:05  117.42 .778
     [XIMP=.46:TIMP=.51]
     [LOSS= 2 :CN= 71.8]
     [Pervious     area: IAper= 4.99:SLPP=2.00:LGP=  68.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1217.:MNI=.013:SCI=   .0]
247:0033--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M2           222.30   42.522 No_date   12:05  117.42  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M2.247
     remark:Runoff Hydrograph for M2
247:0034--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M2           222.30   42.522 No_date   12:05  117.42  n/a
                     +  02:C2          2275.00   55.883 No_date   15:00   62.95  n/a
     [DT= 1.00]  SUM=  03:N2          2497.30   58.542 No_date   14:57   67.80  n/a
247:0035--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N2           2497.30   58.542 No_date   14:57   67.80  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N2.247
     remark:Confluence Hydrograph for N2
247:0036--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N2          2497.30   58.542 No_date   14:57   67.80  n/a
     [RDT= 1.00] out<- 02:C3          2497.30   58.484 No_date   15:02   67.80  n/a
     [L/S/n=  390./ .234/.039]
     {Vmax= 1.021:Dmax= 2.254}
247:0037--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C3           2497.30   58.484 No_date   15:02   67.80  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C3.247
     remark:Routing Hydrograph for C3
247:0038--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M3           598.80   62.039 No_date   12:12   82.10 .544
     [XIMP=.28:TIMP=.31]
     [LOSS= 2 :CN= 53.4]
     [Pervious     area: IAper=11.08:SLPP=2.00:LGP=  98.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1998.:MNI=.013:SCI=   .0]
247:0039--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M3           598.80   62.039 No_date   12:12   82.10  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M3.247
     remark:Runoff Hydrograph for M3
247:0040--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M3           598.80   62.039 No_date   12:12   82.10  n/a
                     +  02:C3          2497.30   58.484 No_date   15:02   67.80  n/a
     [DT= 1.00]  SUM=  03:N3          3096.10  107.033 No_date   12:11   70.56  n/a
247:0041--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N3           3096.10  107.033 No_date   12:11   70.56  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N3.247
     remark:Confluence Hydrograph for N3
247:0042--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:N3          3096.10  107.033 No_date   12:11   70.56  n/a
     [RDT= 1.00] out<- 02:C4          3096.10   85.798 No_date   12:29   70.56  n/a
     [L/S/n= 1460./ .297/.040]
     {Vmax= 1.367:Dmax= 3.730}
247:0043--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C4           3096.10   85.798 No_date   12:29   70.56  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C4.247
     remark:Routing Hydrograph for C4
247:0044--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M4            50.70   10.266 No_date   12:03  114.67 .760
     [XIMP=.29:TIMP=.32]
     [LOSS= 2 :CN= 78.0]
     [Pervious     area: IAper= 3.58:SLPP=2.00:LGP=  73.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 582.:MNI=.013:SCI=   .0]
247:0045--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M4            50.70   10.266 No_date   12:03  114.67  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M4.247
     remark:Runoff Hydrograph for M4
247:0046--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M4            50.70   10.266 No_date   12:03  114.67  n/a
                     +  02:C4          3096.10   85.798 No_date   12:29   70.56  n/a
     [DT= 1.00]  SUM=  04:N4          3146.80   90.936 No_date   12:26   71.27  n/a
247:0047--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           04:N4           3146.80   90.936 No_date   12:26   71.27  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N4.247
     remark:Confluence Hydrograph for N4
247:0048--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            04:N4           3146.80   90.936 No_date   12:26   71.27  n/a
                     +  07:TC1          662.60  106.200 No_date   12:11  112.89  n/a
     [DT= 1.00]  SUM=  03:J2          3809.40  189.902 No_date   12:15   78.51  n/a
247:0049--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:J2           3809.40  189.902 No_date   12:15   78.51  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-J2.247
     remark:Confluence Hydrograph for J2
247:0050--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ROUTE CHANNEL   -> 03:J2          3809.40  189.902 No_date   12:15   78.51  n/a
     [RDT= 1.00] out<- 02:C5          3809.40  162.159 No_date   12:25   78.51  n/a
     [L/S/n=  980./ .094/.031]
     {Vmax= 1.167:Dmax= 3.883}
247:0051--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           02:C5           3809.40  162.159 No_date   12:25   78.51  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-C5.247
     remark:Routing Hydrograph for C5
247:0052--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    CALIB STANDHYD     01:M5           152.00   24.825 No_date   12:07  109.86 .728
     [XIMP=.26:TIMP=.29]
     [LOSS= 2 :CN= 75.7]
     [Pervious     area: IAper= 4.08:SLPP=2.00:LGP= 117.:MNP=.250:SCP=   .0]
     [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1007.:MNI=.013:SCI=   .0]
247:0053--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           01:M5           152.00   24.825 No_date   12:07  109.86  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-M5.247
     remark:Runoff Hydrograph for M5
247:0054--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    ADD HYD            01:M5           152.00   24.825 No_date   12:07  109.86  n/a
                     +  02:C5          3809.40  162.159 No_date   12:25   78.51  n/a
     [DT= 1.00]  SUM=  03:N5          3961.40  181.603 No_date   12:21   79.71  n/a
247:0055--------------ID:NHYD----------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
    SAVE HYD           03:N5           3961.40  181.603 No_date   12:21   79.71  n/a
     fname :C:\MODEL_~1\Current\MOSQUI~1\H-N5.247
     remark:Confluence Hydrograph for N5
247:0002----------------------------------------------------------------------------
```

```
      FINISH
--------------------------------------------------------------------------------
********************************************************************************
     WARNINGS / ERRORS / NOTES
     -------------------------
   Simulation ended on 2021-10-27     at 13:04:17
================================================================================
```

Appendix E

Road Crossings - Photographs

Downey Road (Upstream)

Downey Road (Downstream)

Lot 26 Farm Access (Upstream)

Lot 26 Farm Access (Downstream)

Lot 27 Farm Access (Upstream)

Lot 27 Farm Access (Downstream)

Rideau Road (West of Downey Road) (Upstream)

Rideau Road (West of Downey Road) (Downstream)

Bowesville Road (Upstream)

Bowesville Road (Downstream)

Osgoode Link Pathway (Upstream)

Osgoode Link Pathway (Downstream)

Rideau Road (East of Downey Road) (Upstream)

Rideau Road (East of Downey Road) (Downstream)

Earl Armstrong Road (Upstream)

Earl Armstrong Road (Upstream)

Limebank Road (Upstream)

Limebank Road (Downstream)

Spratt Road (Upstream)

Spratt Road (Downstream)

Leitrim Road (Upstream)

Leitrim (Downstream)

River Road (Upstream)

River Road (Downstream)

Appendix F

Full-Size Drawings

(Drawings MQ-1 and MQ-2)

Drawing MQ-1
Mosquito Creek cross-sections and regulatory flood levels

Cross Section (XS ID : RFL)

Study Limit

1m LiDAR-derived contours

100yr Floodline

100yr Floodplain

10 NOV 2021

Rideau Valley Conservation Authority

Spatial Reference: U.T.M. Zone 18 - NAD 83 Datum Vertical Datum: CGVD28 HT2.0	N
File name: Drawing MQ-1	
Modified by: TB	
Date Modified: 11/10/2021 9:18:10 AM	
Location: Z:\GIS_Data\CA_Data\FPM\RVCA\RV3\Mosquito2018\Drawing_MQ-1.mxd	

Scale 1:7,500

0 250 500

Meters

Floodline and map layout created in ArcGIS 10.8.1.

The information in this drawing is for information purposes only. Authoritative information on flood hazard is maintained in RVCA's GIS system and is updated from time to time based on new data.

LiDAR captured by Airborne Imaging between April 25 - 29, 2015.

Export Date: 10 NOV 2021 9:19:04 AM

Drawing MQ-2
Mosquito Creek
flood hazard area

Study Limit
100yr Floodline
100yr Floodplain

10 NOV 2021

Study Limit Spill Section
Study Limit
Rideau River
Mosquito Creek
Mosquito Creek
Mosquito Creek
Tributary C (Thomas Gamble Drain)
Tributary A (Spratt Drain)
Tributary B (Nolan Drain)
Study Limit Spill Section
Study Limit Spill Section
Study Limit
Study Limit Spill Section
Study Limit
Dancy Drain
Keith Moodie Drain
Downey Drain
Nolan Drain

Rideau Valley Conservation Authority

Projection note: U.T.M. Zone 18 - NAD 83 Datum

N

File name: Drawing MQ-2

Modified by: TB

Date Modified: 11/10/2021 9:26:32 AM

Location:
Z:\GIS_Data\CA_Data\FPM\RVCA\RV3\Mosquito2018\Drawing_MQ-2.mxd

Scale 1:7,500

0 250 500

Meters

Floodline and map layout created in ArcGIS 10.8.1.

The information in this drawing is for information purposes only. Authoritative information on flood hazard is maintained in RVCA's GIS system and is updated from time to time based on new data.

Aerial photography captured between May 16 - 20, 2017.

Export Date: 10 NOV 2021 9:29:15 AM